

Heterogeneous Friends-and-Neighbors Voting*

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Abstract

Previous work shows that candidates receive more personal votes, frequently called “friends-and-neighbors” votes, in areas where they have local attachments. This article examines heterogeneity in friends-and-neighbors voting near candidates’ counties of birth and residence in U.S. statewide executive office elections. Using two large datasets, I estimate how the magnitude of the friends-and-neighbors vote varies across candidate types, electoral environments, offices, and voters. Candidates’ vote shares increase by substantially more in their counties of birth and residence than in neighboring counties. Candidates vote shares increase by more in home counties that are less populated and generally less supportive of their party. The salience of the office does not relate to the amount of friends-and-neighbors voting. Although incumbents and non-incumbents receive similar amounts of friends-and-neighbors votes, challengers who currently hold local or state-legislative office receive more friends-and-neighbors support. Finally, I show that friends-and-neighbors voting decreased across time.

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1 Introduction

Since at least Key (1949), political scientists recognized that political candidates often receive increased support from voters in geographic areas where they have some local attachment. Key coined the phrase “friends-and-neighbors” voting to describe this phenomenon. Subsequent work demonstrates that voters disproportionately support candidates who were raised or reside in close geographic proximity to themselves in numerous contexts, including presidential elections in the United States (Lewis-Beck and Rice, 1983; Dudley and Rapoport, 1989), gubernatorial, senatorial, and statewide judicial elections in the United States (Tatalovich, 1975; Rice and Macht, 1987*a*; Aspin and Hall, 1987), parliamentary elections in Ireland, Brazil, and the United Kingdom (Parker, 1982; Ames, 1995; Arzheimer and Evans, 2012) and local elections in New Zealand and the United States (Johnston, 1974; Brunk, Ramesh and Adams, 1988).

Despite many demonstrations of candidates receiving electoral benefits from local attachments, little is known about why this occurs. Many theories have been put forth to explain friends-and-neighbors voting. Candidates’ ideological and party preferences may align better with local voters. Voters could also perceive that they receive distributional benefits from local representation (Key, 1949; Lewis-Beck and Rice, 1983). A number of less instrumental explanations have been hypothesized for friends-and-neighbors voting. Lewis-Beck and Rice argue that voters receive psychological satisfaction from voting for someone who shares a common trait with them. Bowler, Donovan and Snipp (1993) and Gimpel et al. (2008) contend that voters are relatively more aware of local candidates, which particularly in less salient elections is an important determinant of the personal vote (Beck et al., 1992). Finally, Rice and Macht (1987*b*) note that candidates may be better at mobilizing supporters in their own community.

Unfortunately, existing literature provides little evidence that is useful for identifying which of these potential mechanisms cause candidates to receive more votes in areas where they have local attachments. Theories of friends-and-neighbors voting rarely predict the

amount of additional support candidates should receive from geographically proximate voters. Rather, most theories of friends-and-neighbors voting make the observationally equivalent prediction that candidates will receive disproportionate support from voters who live in close proximity to their place of birth or residence. Thus, we learn little about which, if any, of these many possible mechanisms leads to friends-and-neighbors voting when only observing that candidates with local attachment receive more votes.

Some mechanisms do make contrasting predictions about how the magnitude of the friends-and-neighbors vote should vary across contexts. If voters support geographically proximate candidates because they believe that local representation provides distributional benefits, then more friends-and-neighbors voting should occur in high salience races, as these offices have larger discretionary budgets. Key's (1949) contention that voters use local attachments as a heuristic when they have little other basis for differentiating between candidates makes the opposite prediction. Thus, observing that friends-and-neighbors voting increases with the salience of the office is more consistent with voters seeking distributional benefits from local representation, while observing that friends-and-neighbors voting decreases with the salience of the office is more consistent with voters using local attachments as a low-information cue. More generally, theories differ in their predictions about how the friends-and-neighbors vote should vary across candidate types, electoral environments, offices, and voters. Thus, comparing the observed patterns of heterogeneity in the friends-and-neighbors vote to these predictions can help identify which of the potential sources of the friends-and-neighbors vote are most likely to be causing candidates to receive more votes in areas where they have local attachments.

Despite being useful for testing theories of friends-and-neighbors voting, previous studies generally lack large enough samples to estimate the contextual nature of voter support for geographically proximate candidates. This paper fills this gap in the literature by looking at heterogeneity in a county's support for candidates who were born or reside nearby using two large datasets. I first examine friends-and-neighbors voting in the 2010 midterm elections.

Many states held multiple elections in which candidates from the same party who were born and reside in different parts of a state competed for similar offices. I estimate the magnitude of the friends-and-neighbors vote by relating variation across concurrent elections in a county's support for a party's candidates to variation in the distance between the county and a candidate's county of birth and residence. I find that candidates' increased support in their county of birth and residence varies with the population of the county, the county's general support for the local candidate's party, and the candidate's previous political experience. Having data on a large number of races also allows me to build on recent work by Gimpel et al. (2008) that shows the friends-and-neighbors vote quickly dissipates as a function of the distance between voters and candidates.

I also look at friends-and-neighbors voting in gubernatorial elections using a panel of county-level election returns and locations of candidates' place of birth and residence from 1965 to 2011. I estimate the magnitude of the friends-and-neighbors vote by relating variation across time in a county's support for Democratic candidates to the distance between the county and the place of birth and residence of each party's candidate. The estimates of the friends-and-neighbors vote in this panel are similar to those in the 2010 midterm panel. Because the composition of voters varies across time, but remains relatively constant across concurrent elections, finding similar estimates of these two approaches suggests that mobilization is not the primary cause of friends-and-neighbors voting. I also show that candidates received less additional support from geographically proximate voters over time.

2 Contribution to Literature

Key (1949) is one of the earliest and best known discussions of friends-and-neighbors voting. He repeatedly shows that candidates performed best in areas where they had local attachments in statewide races in the South during the early 1900s. Although Key primarily measures local attachments with the candidate's place of birth and residence, he also

highlights elections in which a candidate performed well in their campaign manager's place of residence or in the congressional district that he formerly represented. Consistent with Key's conjecture that friends-and-neighbors voting frequently occurs, subsequent work by Tatalovich (1975) shows a significant negative correlation between a candidate's vote share in a county and the distance between the county and the candidate's county of residence in 62 of the 103 competitive elections for senator, governor, and lieutenant governor in Mississippi between 1943 and 1973.

One issue when interpreting Key's (1949) work is that candidates may receive higher vote shares because local voters both find them personally appealing and prefer their partisan and ideological leanings. Subsequent work often attempts to isolate the personal component of the friends-and-neighbors vote. Lewis-Beck and Rice (1983) compare the relative performance of a presidential candidate in their home state to the relative performance of the previous five candidates from his party in the state, attributing the difference between these two quantities to personal friends-and-neighbors votes. Variations on this approach have been widely adopted in subsequent literature studying the home-state advantage in presidential elections (Garand, 1988; Dudley and Rapoport, 1989; Powell, 2004; Disarro, Barber and Rice, 2007; Devine and Kopko, 2011). Rice and Macht (1987*a*) use a similar approach to isolate personal friends-and-neighbors votes that gubernatorial candidates receive in their county of residence.

One weakness of Lewis-Beck and Rice's (1983) method for isolating the personal friends-and-neighbors vote is that it does not account for the effect of the explanatory variables in previous elections. For example, the average Republican vote share in Texas in the 1980, 1984, 1988, 1992, and 1996 presidential elections is used to estimate George W. Bush's home-state advantage using Lewis-Beck and Rice's method. Thus, any friends-and-neighbors votes George H. W. Bush received in Texas in the 1988 and 1992 presidential elections are included in this average. Consequently, estimates of the friends-and-neighbors obtained using Lewis-Beck and Rice's method will be biased downwards if a party's candidates tend to come from

the same states across time. To avoid this problem, I develop two alternate approaches that use a combination of fixed effects to model the counterfactual vote share that a party's candidate would receive absent any personal friends-and-neighbors votes (see also Kahane, 2009). One of my approaches contrasts with previous work by exploiting variation in the home counties of candidates competing for similar offices on the same ballot to estimate the effect of local candidates. Using this approach allows me to also study the effect of local candidates on ballot roll-off.

Theories of friends-and-neighbors voting often make predictions about how the friends-and-neighbors vote should vary across contexts. For example, Tatalovich (1975) summarizes eight hypotheses taken from Key (1949) about how the magnitude of the friends-and-neighbors vote should vary across different types of candidates, elections, offices, and time periods. Most empirical tests of heterogeneity in friends-and-neighbors focus on the presidential election. Because of the limited number of cases, the results of these tests are often sensitive to sample selection and the specific variables that are included in the model. For example, both Lewis-Beck and Rice (1983) and Mixon and Tyrone (2004) report that presidential candidates from less populated states receive more friends-and-neighbors votes, while Devine and Kopko (2011) finds no relationship once they expand the number of cases and include more control variables.

Two previous papers, Tatalovich (1975) and Rice and Macht (1987*a*), examine heterogeneity in friends-and-neighbors voting in gubernatorial and senate elections. Tatalovich shows that the correlation between a candidate's vote share in a county and the distance between the county and the candidate's county of residence is more frequently statistically significant in primary elections, elections that occurred earlier in the sample, when the strongest opposing candidate lives more than 100 miles away, and when the candidate has not previously run for the office. Unfortunately, Tatalovich only makes bivariate comparisons and provides no test of whether any of these patterns can be distinguished from statistical noise. Rice and Macht (1987*a*) show that challengers and candidates from less-populated

counties receive significantly more friends-and-neighbors votes in their county of residence than incumbents and candidates from more-populated counties.

This paper makes a number of contributions to this literature on heterogeneity in friends-and-neighbors voting. Because of the size of my samples, I have greater statistical power than previous work to estimate the contextual nature of the friends-and-neighbors vote. Similar to Rice and Macht (1987*a*), I examine whether the percentage of the state's population that resides in a county and the incumbency status of candidates moderates the degree of friends-and-neighbors voting. I extend this work by investigating whether the amount of friends-and-neighbors votes cast for challengers relates to their previous political experience. Because my 2010 dataset includes elections for a wide range of different state executive office, I also test Key's (1949) hypothesis that friends-and-neighbors voting decreases with the salience of the election. Finally, I explore whether friends-and-neighbors voting is larger in counties that are generally less supportive of the local candidate's party.

I also build upon recent work by Gimpel et al. (2008) that examines how quickly the friends-and-neighbors vote dissipates as a function of the distance between a county and a candidate's county of residence. Gimpel et al. shows a non-linear relationship between this distance and gubernatorial candidate performance. Because I observe more cases, I am able to map out this non-linear relationship more precisely. I am particularly interested in the difference between the number of friends-and-neighbors votes that candidates receive in their county of birth or residence and the counties that border their county of birth or residence, as this provides evidence about whether friends-and-neighbors voting is regional.

Finally, this paper contributes to the broader literature on the sources of the personal vote. Ansolabehere and Snyder (2002) show that the incumbency advantage, the most studied component of the personal vote, increased between the 1940s and 1990s for governors. One potential explanation for this increase in the gubernatorial incumbency advantage is that voters were generally casting more personal votes in gubernatorial elections. No work systematically examines how any component of the personal vote besides the incumbency ad-

vantage varied over time. Thus, estimating how the magnitude of the friends-and-neighbors vote varies between 1965-2011 fills this gap in the literature.

3 Data

County-level election returns were collected from two sources. Data on gubernatorial elections from 1965 to 1986 comes from a cleaned version of ICPSR (1984). Data on gubernatorial elections from 1987 to 2011 and all statewide executive office elections in 2010 comes from Meredith (2013). Using these data, I construct $off_{c,t}$, the two-party Democratic vote share in the election for office off in county c at time t .

Data on the county of birth and residence of gubernatorial candidates came from a number of sources. The primary sources of data from 1965 to 1986 are biographical records contained in biennial publications of *Who'sWho in American Politics*. If the biography indicates that a candidate was holding or previously held statewide office, I coded place of residence as the county of residence when first entering state politics. If the biography indicated that a candidate had previously served in the state legislature, I coded place of residence as the county of residence when the candidate served in the state legislature. A variety of secondary sources, including archived newspaper articles, historical census data, Wikipedia, and Political Graveyard were consulted to obtain information about place of birth and residence in cases where *Who'sWho in American Politics* does not contain a candidate's biography or lacked information about a candidate's place of birth or residence. Data on the county of birth and residence of gubernatorial candidates from 1987 to 2011 comes from Meredith (2013).

Data on the county of birth and residence of all 2010 statewide executive office candidates were also collected from a number of sources. The primary sources of these data were responses to questionnaires distributed by the Project Vote Smart to all statewide executive office candidates. I consulted *Who'sWho in American Politics*, archived newspaper arti-

cles, candidate websites, Wikipedia, and Ballotpedia when these data were unavailable from Project Vote Smart.

I construct distance measures between each county and candidates' counties of birth and residence. $DemDistBorn_{c,t,off}$ is defined as the distance between county c and the county of birth of the Democratic candidate for office off at time t . This value is set to infinity when the Democratic candidate was born out of state. Similarly, $DemDistReside_{c,t,off}$ is defined as the distance between county c and the county of residence of the Democratic candidate for office off at time t . Analogous distance measures $RepDistBorn_{c,t,off}$ and $RepDistReside_{c,t,off}$ are constructed to measure the distance between a county c and the county of birth and residence of the Republican candidates for office off at time t . See Meredith (2013) for more details about how these distances are calculated.

I use these distance measure to generate indicators of whether one party's candidate likely has a friends-and-neighbors advantage over the other party's candidate in a county. $Born_{c,t,off}$ and $Reside_{c,t,off}$ are the most straightforward of these indicators. $Born_{c,t,off}$ indicates whether one party's candidate for office off at time t was born in county c . Specifically,

$$Born_{c,t,off} = \begin{cases} 1 & \text{if } DemBornDist_{c,t,off} = 0 \text{ and } RepBornDist_{c,t,off} > 0 \\ -1 & \text{if } DemBornDist_{c,t,off} > 0 \text{ and } RepBornDist_{c,t,off} = 0 \\ 0 & \text{otherwise} \end{cases} .$$

Analogously, $Reside_{c,t,off}$ indicates whether one party's candidate for office off at time t resides in county c , such that

$$Reside_{c,t,off} = \begin{cases} 1 & \text{if } DemResideDist_{c,t,off} = 0 \text{ and } RepResideDist_{c,t,off} > 0 \\ -1 & \text{if } DemResideDist_{c,t,off} > 0 \text{ and } RepResideDist_{c,t,off} = 0 \\ 0 & \text{otherwise} \end{cases} .$$

In some specifications the information contained in $Born_{c,t,off}$ and $Reside_{c,t,off}$ is pooled into a single measure, $Local_{c,t,off}$, of which candidate likely has a friends-and-neighbors ad-

vantage in a county. $Local_{c,t,off}$ is defined such that

$$Local_{c,t,off} = \begin{cases} 1 & \text{if } \min(DemBornDist_{c,t,off}, DemResideDist_{c,t,off}) = 0 \text{ and} \\ & \min(RepBornDist_{c,t,off}, RepResideDist_{c,t,off}) > 0 \\ -1 & \text{if } \min(DemBornDist_{c,t,off}, DemResideDist_{c,t,off}) > 0 \text{ and} \\ & \min(RepBornDist_{c,t,off}, RepResideDist_{c,t,off}) = 0 \\ 0 & \text{otherwise} \end{cases} .$$

I also construct indicators of whether a county is close to one candidate's county of birth or residence. $BornX_{c,t,off}$ indicates whether a county is within X miles of the county of birth of one party's candidate for office off at time t . Specifically,

$$BornX_{c,t,off} = \begin{cases} 1 & \text{if } DemBornDist_{c,t,off} < X \text{ and } RepBornDist_{c,t,off} \geq X \\ -1 & \text{if } DemBornDist_{c,t,off} \geq X \text{ and } RepBornDist_{c,t,off} < X \\ 0 & \text{otherwise} \end{cases} .$$

Thus, $Born25_{c,t,off} = -1$ indicates that in the race for office off at time t the Republican candidate was born in a county that is within 25 miles of county c , but that the Democratic candidate was not. $ResideX_{c,t,off}$ is defined in an analogous manner for counties close to one candidate's county of residence. As before, I also construct $LocalX_{c,t,off}$ to pool the information contained in $BornX_{c,t,off}$ and $ResideX_{c,t,off}$. Specifically,

$$LocalX_{c,t,off} = \begin{cases} 1 & \text{if } \min(DemBornDist_{c,t,off}, DemResideDist_{c,t,off}) < X \text{ and} \\ & \min(RepBornDist_{c,t,off}, RepResideDist_{c,t,off}) > X \\ -1 & \text{if } \min(DemBornDist_{c,t,off}, DemResideDist_{c,t,off}) > X \text{ and} \\ & \min(RepBornDist_{c,t,off}, RepResideDist_{c,t,off}) < X \\ 0 & \text{otherwise} \end{cases} .$$

Table 1 provides descriptive statistics about the place of birth and residence of candi-

Table 1: Counties of Birth and Residence of 2010 Midterm Candidates

	# of Obs.	Percent of State Population	Population Density (2005)	Average Income (2005)	Percent Kerry (2004)	Percent Containing Capital	Born Out of State	Missing
Counties of Birth:								
Democrats	90	0.106	2256.3	34,586	0.504	0.122	47	11
Republicans	90	0.082	818.0	33,254	0.444	0.111	46	12
Counties of Residence:								
Democrats	148	0.145	2174.2	36,505	0.514	0.270	0	0
Republicans	148	0.125	736.5	34,969	0.442	0.216	0	0
Democratic Advantage in County	174	0.107	2056.8	35,243	0.502	0.184		
Republican Advantage in County	169	0.083	686.8	34,203	0.436	0.160		
Avg. County (unweighted)		0.028	264.2	28,865	0.407	0.028		
Avg. County (pop. weighted)		0.112	999.9	33,288	0.453	0.116		

dates in the 2010 midterm elections. Table 1 shows that candidates were born and reside in counties that are more supportive of their party. John Kerry received about 50 percent of the vote in the 90 in-state counties of birth of Democratic candidates, but he only received about 44 percent of the vote in the 90 in-state counties of birth of Republican candidates. Even larger differences in John Kerry's vote share are observed in the counties of residence of Democratic and Republican candidates. As a point of comparison, the final row of Table 1 shows that John Kerry should receive about 45 percent of the vote in candidates' counties of birth and residence if candidates were randomly selected from their state's population. I must properly account for the fact that candidates' counties of birth and residence disproportionately support their party to prevent incorrect classification of partisan support as personal friends-and-neighbors votes.

Table 1 highlights some additional noteworthy characteristics of Democratic and Republican candidates' home counties. Democratic and Republican candidates were born in counties that are slightly less populated than their state's average and reside in counties that are more populated than their state's average. Both parties' candidates also tend to disproportionately reside in wealthy counties and in the county containing the state capital. Although Democratic candidates were born and reside in counties that are more densely populated than the state average, Republican candidates were born and reside in counties that are slightly less dense than the state average.

Table 2 provides similar descriptive statistics about the home counties of gubernatorial candidates. Nearly all of the patterns observed in the 2010 candidate sample also hold in this sample. One additional noteworthy pattern is a slight widening of the partisan gap in the Democratic presidential vote share in Democratic and Republican gubernatorial candidates' home counties over time. The difference in the average Michael Dukakis vote share in Democratic and Republican candidates' home counties grew from about 2.6 percentage points (p.p.) between 1965 and 1988 to 4.5 p.p. between 1989 and 2011. I must properly account for these changes across time in partisan support in candidates' counties of birth and residence

to prevent classifying these changes as an increase in friends-and-neighbors voting across time.

Because information about a candidate's place of birth and residence is more likely to be accessible when a candidate receives greater friends-and-neighbors support, missing data will likely cause friends-and-neighbors support to be overestimated. Thus, I highlight that Table 1 and Table 2 show my collection of information on county of residence for every candidate and county of birth for about 92 percent of candidates in the 2010 sample and over 99 percent of candidates in the gubernatorial sample. Because candidates are less likely to publicize their place of birth when they are born out of state, I suspect many of the remaining missing counties of birth are for candidates who were not born in the state in which they are running. These few missing cases may cause me to slightly overestimate the magnitude of friends-and-neighbors voting in the county of birth in the 2010 candidate sample.

4 2010 Election Midterm Elections

4.1 Empirical Specification

Previous work typically estimates the magnitude of the friends-and-neighbors vote by comparing a candidate's vote share in areas where they do and do not have local attachments. Controls are often included in such analyses to account for variables that both relate to the place of birth and residence of candidates and affect a candidate's performance in the area. Table 1 shows that 2010 statewide executive office candidates come from counties that were more supportive of their party's presidential candidate in 2004 than their state at-large. If the controls imperfectly capture these party preferences, the magnitude of friends-and-neighbors voting will be overstated.

I account for a county's party preferences using a combination of fixed effects that are

Table 2: Counties of Birth and Residence of Gubernatorial Candidates

	# of Obs.	Percent of State Population	Population Density (1988)	Average Income (2005)	Percent Dukakis (1988)	Percent Containing Capital	Born Out of State	Missing
Counties of Birth								
1965 - 1988:								
Democrats	194	0.078	1707.7	31,607	0.475	0.124	84	3
Republicans	168	0.094	1410.2	33,411	0.459	0.131	109	4
1989 - 2011:								
Democrats	149	0.096	1952.4	32,978	0.468	0.154	103	0
Republicans	148	0.081	794.9	33,101	0.437	0.095	103	1
Counties of Residence								
1965 - 1988:								
Democrats	281	0.116	1681.1	34,864	0.474	0.235	0	0
Republicans	281	0.117	995.1	35,293	0.448	0.221	0	0
1989 - 2011:								
Democrats	252	0.131	1666.6	35,394	0.472	0.333	0	0
Republicans	252	0.115	684.5	35,677	0.427	0.210	0	0
Democratic Advantage in County								
1965 - 1988	307	0.079	1376.0	32,862	0.469	0.176		
1989 - 2011	287	0.097	1903.8	33,988	0.472	0.240		
Republican Advantage in County								
1965 - 1988	310	0.085	856.5	33,774	0.443	0.161		
1989 - 2011	282	0.079	601.3	34,190	0.427	0.131		
Avg. County (unweighted)								
1965 - 1988		0.028	242.2	28,960	0.430	0.028		
1989 - 2011		0.029	249.2	29,078	0.427	0.029		
Avg. County (pop. weighted)								
1965 - 1988		0.094	924.5	32,948	0.447	0.101		
1989 - 2011		0.099	861.8	33,364	0.437	0.103		

identified by variation in candidates' home counties across a state's concurrent statewide executive office elections held on November 2, 2010. Let Δ_1 represent the difference in the vote share of the party's candidate in county A and county B in races in which no candidate has a friends-and-neighbors advantage in either county and Δ_2 represent the difference in the vote share of the party's candidate in county A and county B in a race in which the party's candidate has a friends-and-neighbors advantage in county A, but not county B. I use Δ_1 to estimate the contribution of party preferences to Δ_2 and attribute $\Delta_2 - \Delta_1$ to personal friends-and-neighbors votes.

The intuition presented in the previous paragraph is formalized in equation 1. Equation 1 models the expected vote share of the Democratic candidate for office *off* in county *c* in 2010, $off_{c,2010}$, as a combination of two fixed effects, λ_c and $\lambda_{s(c),off}$. The county-specific fixed effect, λ_c , captures differences across counties in their relative support of Democratic and Republican candidates, whereas the election-specific fixed effect, $\lambda_{s(c),off}$, captures differences in the relative quality of the Democratic and Republican candidates running for different offices in state *s*. Equation 1 also includes the local-candidate indicator, $Local_{c,2010,off}$, and this local-candidate indicator interacted with $Z_{c,2010,off}$, a vector of county, election, and candidate characteristics. The variables contained in $Z_{c,2010,off}$ are the share of the state population of the county, the share of the state population of the surrounding area, the previous political experience of the candidates, and the salience of the office. I follow Ansolabehere and Snyder (2002) and classify attorney general, lieutenant governor, and secretary of state as high salience down-ballot offices and all others as low salience down-ballot offices. Finally, equation 1 includes an unobservable component, $\epsilon_{c,2010,off}$, that is clustered by both county and election.

$$off_{c,2010} = \lambda_{s(c),off} + \lambda_c + (\beta + \theta Z_{c,2010,off})Local_{c,2010,off} + \epsilon_{c,2010,off} \quad (1)$$

One concern when estimating equation 1 is that coattails will cause the observable determinants of a party's vote share in one race to relate to the unobservable determinants of the party's vote share in another race. Coattails refer to a process in which the personal identity of a party's candidate in one race affects the performance of the party's other candidates running in concurrent elections (Miller, 1955). If votes cast for a local candidate also improve the performance of other candidates from the local candidate's party, then races without local candidates do not make good races from which to isolate party preferences. It is generally thought the largest coattails are from a party's candidate in the most prominent race onto the party's candidates in less salient races. Consistent with this expectation, Meredith (2013) finds that gubernatorial coattails affect down-ballot races, but that down-ballot candidates do not affect either gubernatorial or other down-ballot races. Consequently, my baseline specification excludes gubernatorial elections.

4.2 Results

The first two columns of Table 3 confirm that candidates perform better in their home counties both because candidates tend to come from counties that disproportionately support their party and friends-and-neighbors voting. Candidates receive a 7.3 (s.e. 0.9) p.p. greater vote share in their home counties (i.e., county in which they were born or reside) than in counties where neither candidate has a home-county advantage. Once party preferences are controlled for through the inclusion of county fixed effects, candidates are estimated to receive a 3.1 (s.e. 0.4) p.p. increase in their personal vote in their home counties. This attenuation of the home county coefficient suggests that any method used to estimate friends-and-neighbors voting that does not properly account for preexisting partisan differences near candidates' place of birth and residence risks overstating the personal friends-and-neighbors vote.

If candidates receive more support in their place of birth and residence because of personal voting, then candidates with deeper personal ties to an area should receive greater

Table 3: Diffusion of Friends-and-Neighbors Voting in 2010

County Fixed Effects	(1) No	(2) Yes	(3) Yes	(4) Yes	(5) Yes	(6) Yes	(7) Yes
Born or/and Reside:							
In County	0.072 (0.009)	0.031 (0.004)	0.025 (0.005)	0.012 (0.005)	0.012 (0.005)	0.012 (0.005)	0.012 (0.005)
< 25 Miles of County				0.013 (0.004)	0.006 (0.003)	0.006 (0.003)	0.006 (0.003)
< 50 Miles of County					0.006 (0.003)	0.003 (0.002)	0.003 (0.002)
< 75 Miles of County						0.003 (0.003)	0.001 (0.002)
< 100 Miles of County						0.003 (0.003)	0.002 (0.003)
Born and Reside:							
In County			0.024 (0.011)	0.022 (0.011)	0.022 (0.011)	0.020 (0.011)	0.020 (0.011)
< 25 Miles of County				0.005 (0.005)	-0.001 (0.004)	-0.002 (0.004)	-0.002 (0.004)
< 50 Miles of County					0.010 (0.004)	0.007 (0.003)	0.007 (0.003)
< 75 Miles of County						0.005 (0.003)	0.003 (0.002)
< 100 Miles of County						0.004 (0.003)	0.004 (0.003)

Notes: All specification also include election-specific fixed effects. N = 8,340 observations in 2,036 counties and 118 elections. Standard errors double clustered by county and election.

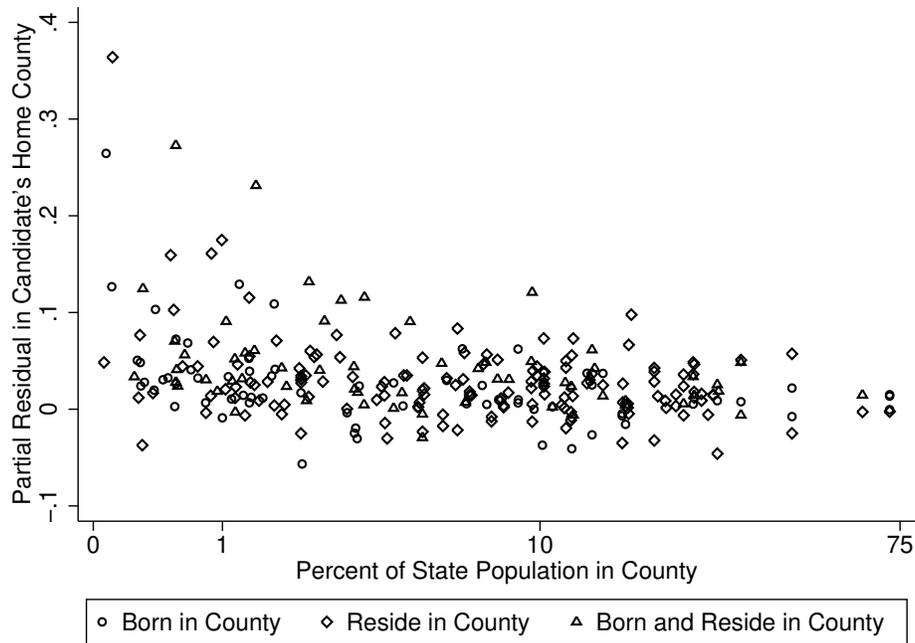
friends-and-neighbors support. The regression reported in Column 3 of Table 3 addresses this possibility by testing whether candidates receive greater support in home counties in which they both were born and reside. Consistent with expectations, candidates receive an additional 2.4 (s.e. 1.1) p.p. increase in friends-and-neighbors votes in counties in which they both were born and reside, above and beyond the 2.6 (s.e. 0.5) p.p. increase that candidates receive in counties in which they were born or reside.

The remainder of Table 3 shows that friends-and-neighbors votes substantially drop off even in counties that border a candidate's county of birth or residence. Column 4 shows that candidates receive about 50 percent fewer friends-and-neighbors votes in a county that is within 25 miles of a candidate's home county than in a home county. The number of friends-and-neighbors votes goes down by an additional 50 percent for every additional 25 miles of distance between a county and a candidate's home county. Thus, a county that is between 75 and 100 miles away from a candidate's county of birth and residence only gives the candidate about 0.6 p.p. (e.g., $0.4 + 0.2$) ($p < .001$) more support than a county that is more than a 100 miles away from both the candidate's county of birth and residence.

Table 4 explores a number of potential sources of heterogeneity in the magnitude of the friends-and-neighbors vote. Column 2 shows that candidates receive a similar number of friends-and-neighbors votes in their county of birth and their county of residence. Column 3 shows how the population of the county, the county's tendency to support the local candidate's party, the candidate's previous local political experience, and the office relate to the home-county advantage. Like Lewis-Beck and Rice (1983) and Rice and Macht (1987*a*), I find that less populated areas demonstrate more friends-and-neighbors voting. Figure 1 plots the partial residuals from the regression presented in Column 2 of Table 3 in candidates' home counties as a function of the county's share of the state population. Nearly all of the largest partial residuals are located in counties in which the population is less than one percent of the total state population. The results in Column 3 of Table 4 confirm that a local candidate's vote share is 4.8 p.p. (s.e. 1.6) higher in a home county that contains less than

one percent of the state population as compared to a home county that contains between one and ten percent of the state population. Similarly, a local candidate's vote share is 1.8 p.p. ($p < .001$) higher in a home county that contains between one and ten percent of the state population than in a home county that contains more than ten percent of the state population.

Figure 1: Partial Residuals in 2010 Home Counties by County Population Share



Notes: Partial residuals from regression in Column 2 of Table 3

Many of the largest partial residuals in Figure 1 are also cases where the local candidate's home county is not generally supportive of the local candidate's party. This suggests that the partisan composition of local candidates' home counties may affect how many friends-and-neighbors votes that they receive. If friends-and-neighbors votes tend to be cast by people who identify with the opposing party, then there are more potential friends-and-neighbors votes in areas that are less supportive of the local candidates party. Figure 2 plots

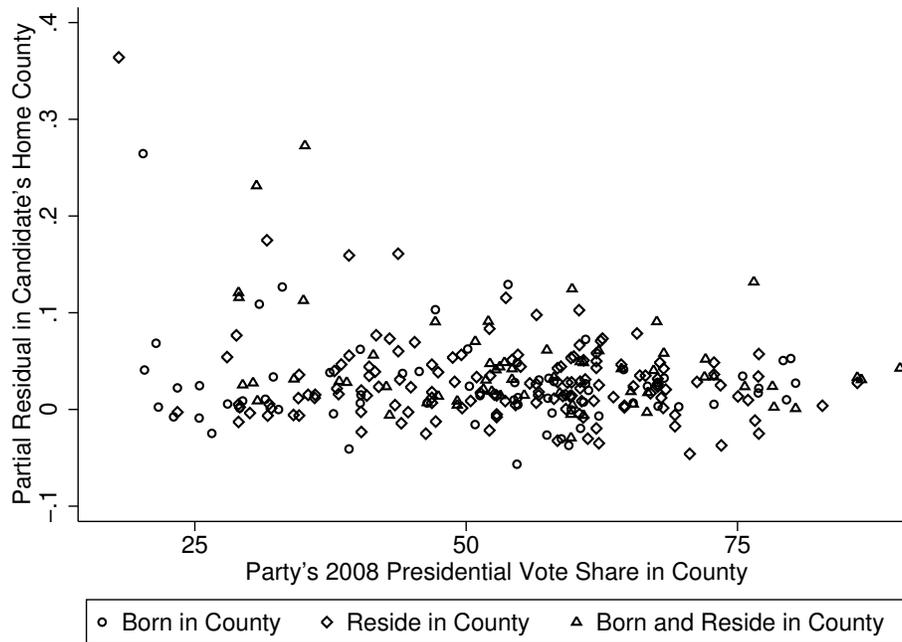
Table 4: Moderators of Friends-and-Neighbors Voting in 2010

	(1)	(2)	(3)	(4)	(5)
Born or/and Reside In County	0.026 (0.005)		0.124 (0.037)	0.117 (0.033)	0.107 (0.009)
X 1% to 10% of State Pop. In County			-0.048 (0.016)	-0.043 (0.014)	-0.041 (0.015)
X 10%+ of State Pop. In County			-0.066 (0.017)	-0.062 (0.014)	-0.051 (0.015)
X Party's '08 Pres. Vote Share In County			-0.110 (0.047)	-0.105 (0.041)	-0.111 (0.045)
X Currently Holds Local Office			0.029 (0.011)	0.025 (0.011)	0.023 (0.010)
X Currently Holds State Legislative Office			0.028 (0.011)	0.028 (0.009)	0.021 (0.008)
X Currently Holds Statewide Office			0.008 (0.012)	0.010 (0.011)	0.007 (0.010)
X High Salience Office			-0.008 (0.008)	-0.009 (0.008)	-0.006 (0.006)
X Governor				-0.006 (0.009)	
Born In County		0.022 (0.007)			
Reside In County		0.027 (0.006)			
Born and Reside In County	0.024 (0.011)	0.000 (0.014)	0.023 (0.009)	0.023 (0.008)	0.018 (0.009)
Born or/and Reside < 50 Miles from County					0.021 (0.017)
X 1% to 10% of State Pop. < 50 Miles from County					0.002 (0.016)
X 10%+ of State Pop. < 50 Miles from County					-0.023 (0.016)
X Party's '08 Pres. Vote Share In County					-0.001 (0.008)
X Currently Holds Local Office					0.004 (0.006)
X Currently Holds State Legislative Office					0.003 (0.007)
X Currently Holds Statewide Office					-0.002 (0.007)
X High Salience Office					-0.003 (0.005)
Born and Reside < 50 Miles of County					0.015 (0.004)

Notes: All specification also include county and election-specific fixed effects. N = 8,340 observations in 2,036 counties and 118 elections, except in Column 5 in which N = 10,287 in 2,096 counties and 148 elections. Standard errors double clustered by county and election.

the partial residuals from the regression presented in Column 2 of Table 3 in candidates' home counties as a function of 2008 presidential vote share in the county. Consistent with hypothesis that local candidates receive more friends-and-neighbors votes in counties that are less supportive of their party, most of the largest partial residuals are cases where the county cast less than a majority of their votes in 2008 for the presidential candidate from their party. The coefficient reported in Column 3 of Table 4 implies that every 10 p.p. increase in vote share for the presidential candidate from the local candidate's party attenuates the home county advantage by about 1.1 (s.e. 0.4) p.p.

Figure 2: Partial Residuals in 2010 Home Counties by 2008 Presidential Vote Share



Notes: Partial residuals from regression in Column 2 of Table 3

Previous work finds that incumbents receive fewer friends-and-neighbors votes in their home counties (Rice and Macht, 1987a). I expand on this finding by examining how political experience more generally affects the home-county advantage. Because previous work suggests that candidate visibility is an important determinant of the personal vote in statewide

executive office elections (Beck et al., 1992), I expect that candidates who are more visible locally than statewide will receive more friends-and-neighbors votes. Candidates currently serving in local or state-legislative offices are assumed to be relatively more visible locally than candidates who do not currently hold political office. In contrast, candidates currently serving in a statewide office are assumed to be better known outside their local area and hence have less relative local visibility. Consistent with expectations, the coefficients in Column 3 of Table 4 show that candidates who currently hold local or state legislative office receive almost three p.p more friends-and-neighbors votes than candidates who do not currently hold a political office and about two p.p. more friends-and-neighbors votes than candidates who currently hold statewide office.

Table 4 shows little relationship between the salience of the race and the amount of friends-and-neighbors voting. Column 3 shows that candidates for a high-salience down-ballot office receive 0.8 (s.e. 0.8) p.p. fewer friends-and-neighbors votes than candidates for a low-salience down-ballot office. I expand the sample in the regression reported in Column 4 to also include gubernatorial elections. Keeping in mind the caveat that gubernatorial coattails may cause Equation 1 to understate friends-and-neighbors voting in gubernatorial elections, Column 4 shows a statistically insignificant negative relationship between friends-and-neighbors voting and gubernatorial elections. Including gubernatorial elections has little effect on any of the other coefficient estimates.

Finally, Column 5 in Table 4 reports results of regressions that look at the moderators of the diffusion of friends-and-neighbors votes to counties within 50 miles of a county of birth or residence. There is significantly more diffusion in areas that contain less than ten percent of the total state population and when both the place of birth and residence of one candidate is within 50 miles of a county. All of the other coefficients are both statistically insignificant and have a substantively small relationship with the amount of diffusion.

It is important to consider the implications of using a within election-year research design when interpreting these results. As these are concurrent elections, the same subset of the

electorate turned out to vote in all of the races in a given state. However, this does not necessarily imply that the same subset of the electorate casts ballots in each race as there may be less rolloff when a local candidate is running. To test this hypothesis, I estimate a modified version of equation 1 where the dependent variable is the natural log of the total number of votes cast and the home-county indicator is equal to one if either the Democratic or Republican candidate was born or resides in the county. I find that the presence of a local candidate increases the number of ballots cast in the county by about 0.84 (s.e. 0.11) percent. While this suggests that rolloff is one channel through which local candidates receive more votes, it can only explain a relatively small fraction of the total vote share increase in candidates' home counties.

5 Gubernatorial Elections from 1965 - 2011

5.1 Empirical Specification

As in the previous section, the additional votes that candidates receive near their county of birth and residence are decomposed into partisan and personal votes. I account for a county's party preferences using a combination of fixed effects that are identified by variation across time in the home counties of gubernatorial candidates. Let Δ_t be the difference in the Democratic vote share in county A and county B in an election-year t when neither parties' candidates have a geographic advantage in either county and $\Delta_{t'}$ be the difference in Democratic candidate performance in county A and county B in an election-year t' in which one party's candidate has a geographic advantage in county A but not county B. I use Δ_t to estimate the contribution of party preferences to $\Delta_{t'}$ and attribute $\Delta_{t'} - \Delta_t$ to personal friends-and-neighbors votes. Because I have data from many election-years, I also include relatively flexible county time trends to account for Miller's (1979) critique of measures of the normal vote that are time invariant.

The intuition presented in the previous paragraph is formalized in equation 2. Equation

2 models the expected Democratic gubernatorial vote share in county c and time t , $gov_{c,t}$, as a combination of an election-year fixed effect, $\lambda_{s(c),t}$, a county-specific k th order time trend, $\sum_{j=0}^k \lambda_{c,j}t^j$, a vector of local-candidate indicators, $Local_{c,t,gov}$, the vector of local candidate indicators interacted with with $Z_{c,t,gov}$, a vector of county, election, and candidate characteristics, and an unobservable component $\epsilon_{c,t}$. The variables included in $Z_{c,t,gov}$ are the county’s share of the state population, the share of the state population that is within 50 miles of the county, time-period indicators, and the incumbency status of the candidates. Standard errors are double clustered by county and election-year to account for both autocorrelation across races within counties and across counties within races.

$$gov_{c,t} = \lambda_{s(c),t} + \sum_{j=0}^k \lambda_{c,j}t^j + (\beta + \theta Z_{c,t})Local_{c,t,gov} + \epsilon_{c,t} \quad (2)$$

5.2 Results

Table 5 shows that estimates of the home-county advantage in gubernatorial elections are similar to those observed in the previous section in 2010 statewide executive office elections. The attenuation of the estimate between Column 1 and Column 2 again shows that candidates come from counties that tend to support their party. In contrast, the stability of the estimate between Column 2 and Column 3 suggest that changes across time in counties’ partisan preferences are generally unrelated to changes across time in the home counties of candidates. Candidates are estimated to receive a 4.4 p.p. (s.e. 0.3 p.p.) and 4.2. p.p. (s.e. 0.3 p.p.) increase in vote share in their home counties when linear county time trends are excluded and included respectively. As in the previous section, Column 4 shows the home-county advantage is similar in counties of birth and counties of residence. Also, candidates receive about a 1.5 p.p. additional increase in vote share in counties of birth and residence.

The remainder of Table 5 shows that estimates of the home-county advantage are robust to the inclusion of alternative specifications of time trends. One concern is that linear

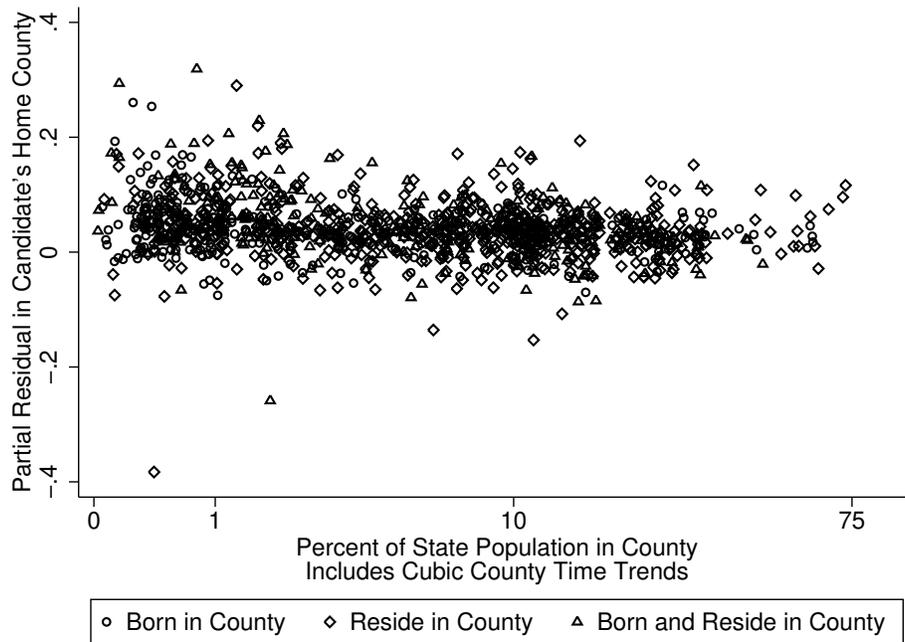
Table 5: Friends-and-Neighbors Voting in Gubernatorial Elections

County Fixed Effects	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
County Time Trends	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	None	None	Linear	Linear	Cubic	Cubic	Spline	Spline
Born or/and Reside in County	0.058 (0.004)	0.044 (0.003)	0.042 (0.003)		0.041 (0.003)		0.041 (0.003)	
Born in County				0.039 (0.005)		0.041 (0.005)		0.040 (0.005)
Reside in County				0.037 (0.004)		0.035 (0.004)		0.036 (0.004)
Born and Reside in County				-0.022 (0.008)		-0.024 (0.009)		-0.024 (0.009)

county time trends may not be flexible enough to capture rapid shifts in a county’s partisan preferences. Thus, the robustness of the results to the inclusions of cubic time trends and a linear spline function with notches in 1980 and 1996 are presented in Columns 5 through 8. The stability of the results when using these more flexible time controls suggests that the coefficients on the local candidate indicators are not biased because they related to unmeasured trends in partisan preferences.

As in the previous section, Figure 3 shows that a higher percentage of voters in less populated counties cast friends-and-neighbors votes for gubernatorial candidates. This figure presents the partial residuals from the specification that includes county cubic time trends. A positive partial residual is observed in 1,008 of the 1,202 gubernatorial home counties. Much like in Figure 1 in the previous section, most of the largest partial residuals are from home counties that make up less than one percent of the state’s population.

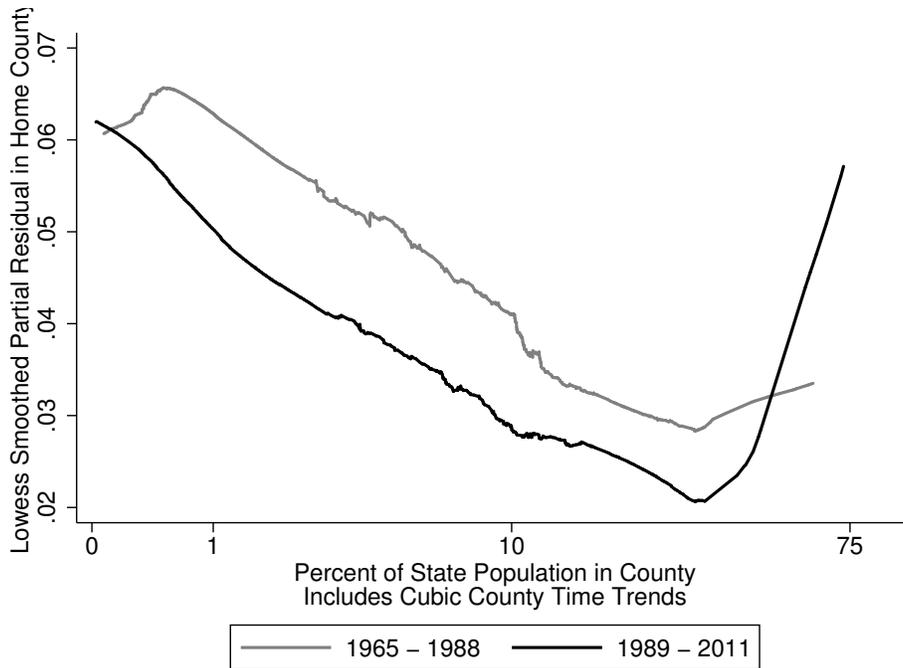
Figure 3: Partial Residuals in Gubernatorial Home Counties by County Population Share



Notes: Partial residuals from regression in Column 5 of Table 5

The primary reason for analyzing these panel data is to examine whether the magnitude of the home-county advantage changed across time. Figure 4 plots a Lowess smoothed average of the partial residuals presented in Figure 3 from two sets of elections: those that occurred between 1965 and 1988 and those that occurred between 1989 and 2011. Except in the largest counties, Figure 4 shows that candidates received a greater home-county advantage in the earlier time period. For example, the average partial residual in a county that contains about one percent of the state population is about 6.5 p.p between 1965 and 1988 versus 5 p.p. between 1989 and 2011. While the exact difference varies, the average partial residual is between one and two p.p. larger in the earlier time period for most values of population. Figure 3 shows that there is little data in the population range where this relationship reverses, so this reversal likely reflects sampling error.

Figure 4: Friends-and-Neighbors Votes in Home County by Election Year



Notes: Partial residuals from regression in Column 5 of Table 5

Table 6 confirms the statistical significance of the patterns displayed in Figure 3 and

Figure 4. Column 2 shows that in comparison to counties that contain less than one percent of the state population, the home-county advantage is 3.0 p.p. (s.e. 0.8 p.p.) and 6.0 p.p. (s.e. 0.8 p.p.) smaller in counties that contain between one and ten percent of the state population and more than ten percent of the state population respectively. Column 2 also shows the peak home-county advantage occurred between 1977 and 1988, which was about three p.p. larger than the home-county advantage observed between 2001 and 2011. The null hypothesis that the average of the two coefficients from the pre-1988 period equals the two coefficients from the post-1988 period is rejected at the $p < .002$ level, two tailed. Finally, Column 2 shows that incumbents and non-incumbents receive similar amounts of friends-and-neighbors votes.

The remainder of Table 6 examines the diffusion of the friends-and-neighbors vote to counties within 50 miles of a home county. Column 3 shows that gubernatorial candidates receive a 0.7 p.p. (s.e. 0.2) increase in vote share in a county within 50 miles of a home county. This is a similar magnitude to the corresponding coefficient in Table 3, although gubernatorial candidates who both were born and reside within 50 miles on a county receive a smaller additional increase than comparable 2010 midterm candidates. Column 4 shows that the increase in vote share in counties within 50 miles of a home county is larger when less of the state's population lives within 50 miles of the county. Column 4 also provides some evidence that the diffusion of the friends-and-neighbors vote is decreasing across time. The null hypothesis that the average of the two diffusion coefficients from the pre-1988 period equals the two diffusion coefficients from the post-1988 period is rejected at the $p < .070$ level, two tailed.

6 Discussion

This article finds substantial heterogeneity in the magnitude of the friends-and-neighbors vote across different contexts. Consistent with Rice and Macht (1987*a*), I show that the

Table 6: Moderators of Friends-and-Neighbors Voting in Gubernatorial Elections

	(1)	(2)	(3)	(4)
Born or/and Reside in County	0.037 (0.003)		0.033 (0.003)	
X 1965 \leq Year \leq 1976		0.070 (0.011)		0.065 (0.010)
X 1977 \leq Year \leq 1988		0.085 (0.009)		0.077 (0.009)
X 1989 \leq Year \leq 2000		0.065 (0.008)		0.063 (0.008)
X 2001 \leq Year \leq 2011		0.056 (0.008)		0.051 (0.051)
X 1% to 10% of State Pop. In County		-0.030 (0.008)		-0.029 (0.008)
X 10%+ of State Pop. In County		-0.060 (0.008)		-0.057 (0.008)
X Incumbent		0.002 (0.002)		0.002 (0.002)
Born and Reside in County	0.015 (0.007)	0.015 (0.006)	0.014 (0.007)	0.014 (0.006)
Born or/and Reside < 50 Miles from County			0.007 (0.002)	
X 1965 \leq Year \leq 1976				0.057 (0.022)
X 1977 \leq Year \leq 1988				0.062 (0.022)
X 1989 \leq Year \leq 2000				0.052 (0.022)
X 2001 \leq Year \leq 2011				0.058 (0.022)
X 1% to 10% of State Pop. < 50 Miles from County				-0.042 (0.022)
X 10%+ of State Pop. < 50 Miles from County				-0.051 (0.022)
X Incumbent				-0.005 (0.003)
Born and Reside < 50 Miles of County			0.001 (0.002)	0.003 (0.002)

local candidates' vote shares increase more in less-populated home counties in both the 2010 and gubernatorial samples. This does not imply that more friends-and-neighbors votes are cast in less-populated counties. Rather, the most populated counties cast more friends-and-neighbors votes because the increased number of voters dominates the reduced effect on vote share. This provides another potential reason for why statewide candidates disproportionately come from more populated areas of states (Gimpel, Lee and Thorpe, 2011). I also find that the friends-and-neighbors vote varies with the partisan composition of the county and decreases over time. This decrease in the friends-and-neighbors vote over time contrasts with the increase in the number of personal votes cast for incumbents over this time period.

In contrast to Rice and Macht (1987*a*), I find no difference in the number of friends-and-neighbors votes received by incumbent and non-incumbent governors. Instead, my 2010 results suggest that the local attachments of challenging candidates are more important. Because challengers currently serving in local or state-legislative office receive the most friends-and-neighbors votes, incumbents receive fewer friends-and-neighbors votes when challenging candidates come from these positions instead of from statewide office or outside of politics.

I also do not find that friends-and-neighbors voting systematically differs across offices. Governors are more important than other statewide executive officials and gubernatorial candidates are better known than other statewide executive office candidates. My estimates of the friends-and-neighbors vote in gubernatorial elections, which are similar in both the 2010 and panel samples, suggest that governors receive a similar number of friends-and-neighbors votes as candidates for offices like agricultural commissioner and auditor. Thus, it would not appear that the importance of the office and salience of the race are first-order determinants of the friends-and-neighbors vote.

Finally, I show in both the 2010 and panel samples that candidates receive a substantially smaller increase in their vote share in areas near home counties. The results in both samples show that the home-county advantage is reduced by about 50% for every 25 miles of distance between the county and the home county. Vote shares increase by more in counties near a

home county when a smaller percentage of the state's population lives in the area. However, fewer friends-and-neighbors votes diffuse in less-populated areas because this increase is not large enough to compensate for there being fewer voters in less populated areas.

I motivated this article by arguing that the patterns of heterogeneity in friends-and-neighbors voting provides evidence about the mechanisms that cause it to occur. Thus, I conclude by discussing what theories of friends-and-neighbors voting are most likely to generate the patterns I observe. The increased relative visibility of local candidates could produce most of the observed heterogeneity. Visibility likely increases knowledge of candidate's place of birth or residence as well as potentially increasing affect, awareness, and many other known components of vote choice. Candidates are more visible when they have deeper ties to the community, hold local office, and live in a smaller community. All of these positive associate with the amount of friends-and-neighbors voting. Unfortunately, aggregated election data is not particularly well-suited for studying why visibility is important. Future work should build on the small literature that studies friends-and-neighbors voting at the individual-level (Bowler, Donovan and Snipp, 1993; Arzheimer and Evans, 2012) to better understand how local attachments relate to knowledge about the candidates, assessments of their traits, and evaluations of their policies.

In contrast, my results do not support Rice and Macht's (1987*a*) conjecture that turnout is an important cause of friends-and-neighbors voting. Rice and Macht argue that local candidates mobilize supporters to vote who otherwise would abstain. Nearly the same subset of the electorate participated in each race in the 2010 sample, while the subset of the electorate that voted varies across time in the panel of gubernatorial elections. If turnout is an important mechanism causing the friends-and-neighbors vote, then the friends-and-neighbors vote conditional on turnout should be smaller than the friends-and-neighbors vote when turnout varies. In contrast, my estimates of the friends-and-neighbors vote in the two samples are very similar. Combining this finding with Meredith's (2013) result that total votes only slightly increase when a local gubernatorial candidate is on the ballot suggests

that turnout can only explain a small portion of the friends-and-neighbors vote. Rather, the friends-and-neighbors vote appears to be caused by people who generally support the opposing party converting to support the candidate with local attachments. The finding that local candidates do better in counties that are generally less supportive of their party and thus contain more potential converts is also consistent with this hypothesis.

Without measures of distributional expectations, it hard to test whether voters support local candidates because they believe that local representation has distributional benefits. However, I infer some indirect evidence against this hypothesis from finding that the magnitude of the friends-and-neighbors vote is constant across office types. If friends-and-neighbors voting is primarily instrumental, I expect to observe more friends-and-neighbors voting in races for more important offices with larger discretionary budgets.

Finally, my results demonstrate that partisan preferences explain a substantial portion of the association between local attachments and vote shares. Including county fixed effects reduce the estimated home-county coefficient by more than 50% in the 2010 sample and by about 25% in the gubernatorial panel. This highlights the importance of using an identification strategy that accounts for both partisan and personal votes for candidates with local attachments. It also highlights the difficulty in studying friends-and-neighbors voting in primaries and other nonpartisan settings where it harder to learn about voter preferences using previous election returns. Yet, Key (1949) argues that these are the elections in which friends-and-neighbors voting is most prevalent and potentially problematic. More work is needed to develop methods to separate ideological and personal friends-and-neighbors votes in these contexts, so that this assertion can is tested more rigorously.

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