

Electoral Rules and Voter Turnout in Mayoral Elections: An Analysis of Ranked-Choice Voting

June 28, 2019

Jason A. McDaniel
Department of Political Science
San Francisco State University
mcdaniel@sfsu.edu

ABSTRACT

Variation in electoral rules and institutions at the local level have an impact on voter turnout and representation. Ranked Choice Voting is a relatively new type of electoral system adopted in several cities throughout the U.S. Previous research focused, focused on only one or a small subset of cities, has found either no effect, or a small reduction in voter turnout under RCV. In this paper, I employ a differences-in-differences design to analyze turnout in elections in over 200 cities, ranging from the early 1990s to 2018. The results indicate a significant decrease in voter turnout of approximately 3–5 percentage points in RCV cities after the implementation of RCV. In addition, I find that the negative effect of RCV varies with election timing cycle, and that it diminishes as elections become more competitive. Finally, I find that the negative RCV effect is more pronounced in open-seat elections.

This paper is prepared for presentation at the Election Systems, Reform, and Administration Conference in Philadelphia, Pennsylvania, July 11–12, 2019.

Ranked-Choice Voting (also known as Instant Run-off Voting, the Alternative Vote, or preferential voting) is an electoral reform adopted by several cities to replace plurality electoral systems and those that require separate run-off elections between the top two candidates if no candidate receives a majority of votes in the general election. Rather than limiting voters to one candidate choice, Ranked-Choice Voting (RCV) allows voters to express multiple candidate preferences, ranking them in order of most preferred to least. If no candidate receives a majority of first preference votes, the “instant run-off” procedures take place, whereby the candidate with the fewest first place votes is dropped from the counting, and the votes of those who selected that candidate as their first preference are transferred to their second-choice candidate preference. If a voter does not record more than one candidate preference, then their ballot is “exhausted” and is not included in any further rounds of vote counting. This procedure is repeated, with votes being transferred from “eliminated” candidates to “surviving” ones, until one candidate achieves a majority of votes from non-exhausted ballots.

Many of those interested in electoral reform are beginning to look to Ranked-Choice Voting as a potential cure for what ails American elections. However, as with previous generations of electoral reformers, less attention is paid to how favored electoral reforms such as Ranked-Choice Voting might impact the level of voter participation. Proponents of RCV claim that expanding the range of choice offered to voters improves the fairness of elections by encouraging more sincere voting and reducing worries about “vote splitting” and “wasted” votes (Lavin 2019; Richie 2004; Richie, Bouricius, and Macklin 2001; Richie, Kleppner, and Bouricius 2000) Additionally, proponents argue that RCV will discourage negative campaigning and reduce the effect of money in politics. On the basis of the perceived benefits of expanded choice and reduced negativity, proponents argue that RCV will have a positive effect on voter participation and engagement in municipal elections (Fair Vote 2018).

Despite the claims of RCV advocates, the research on how RCV impacts voter turnout in local elections is limited, and the findings are somewhat mixed. In this paper, I develop a theory of how the increased information demands on voters associated with Ranked-Choice Voting can be expected to decrease voter turnout. I test the theory by constructing a series of difference-in-differences estimates of the causal effect of Ranked-Choice Voting on voter turnout after implementation. The findings indicate that the adoption of Ranked-Choice Voting decreases voter turnout in mayoral elections by approximately 3–5 percentage points. The negative effect of RCV is more pronounced in open-seat elections compared to those with an incumbent. Additionally, the effect varies with the timing of municipal elections and with the level of competitiveness of an election.

Voter Turnout in Municipal Elections

Variation in voter turnout rates across cities in the U.S. can be explained by several factors, including overarching legal rules and electoral institutions, the circumstances and context of particular elections, and characteristics of the electorate itself. Institutional and contextual factors can influence the overall level of voter turnout at the margins by altering the costs of voting for individual voters as well as the perceived benefits of voting. Electoral rules and institutions that make the benefits and stakes of voting clear will tend to increase turnout, whereas those rules and institutions that increase barriers to voting, or that confuse voters as to what change their vote might bring about, will tend to decrease turnout. Rules that require voters to be registered well in advance of an election are one example of an electoral institution that increases the time and effort costs of voting and, thus, results in lower turnout at the margins (Wood 2002). Cities that have mayor-council governing institutions in which voters elect their mayors tend to have higher turnout than cities that use council-manager forms of government (Caren 2007; Kelleher and Lowery 2004; Oliver 2000; Oliver, Ha, and Callen 2012; Wood 2002). The concentration of governing authority represented by an elected mayor increases the benefits of an individual vote; and the act of campaigning by candidates can increase the information available to voters, thus reducing the costs of casting an informed vote. Whether elections are officially partisan or non-partisan has been shown to affect voter turnout rates as well, with most of the evidence indicating that voter turnout tends to be higher in cities with partisan elections (Wood 2002; Caren 2007; Hajnal and Lewis 2003). Perhaps partisan labels provide voters with more information about the candidates and the stakes of an election; or by providing them with a sense of connection to and engagement with co-partisans (Schaffner, Streb, and Wright 2001).

In recent years, the electoral institution that has, perhaps, received the most attention is the timing of elections. When urban and local elections are held concurrently with higher level state and federal elections voter turnout tends to be higher than when local elections are held in off-cycle years when there are no higher-level elections to mobilize voters to turn out (Anzia 2013; Hajnal and Lewis 2003; Hajnal, Lewis, and Louch 2002). Separating local elections from state and federal elections is one common electoral reform that emerged from the Progressive era that would, in theory, allow voters to focus on issues of local import and thus disconnect local politics and politicians from the perceived pathologies of politics at higher levels (Bridges 1999; Hays 1964). In practice, conducting urban and local elections in off-cycle years seems to increase the information burdens on voters, with the result that the composition of the electorate is skewed towards those who are highly engaged and/or perceive more benefits from voting in those local elections, such as older voters, strong partisans, and those connected to powerful interest groups (Anzia 2011; Anzia 2013; Kogan, Lavertu, and Peskowitz 2018).

One result of relatively low turnout in urban and local elections is that the electorate tends to be composed of voters who have the civic skills, resources, experience, and interest to overcome the barriers put in place by electoral institutions that deter voter turnout (Hajnal and Trounstein 2005). Electorates that are, in the aggregate, older, more educated, and less racially diverse tend to have consistently higher turnout (Caren 2007; Oliver, Ha, and Callen 2012; Wood 2002). Smaller towns and cities with more racially homogenous electorates and more homeowners also tend to have higher participation and turnout (Oliver 2000; Oliver 2003; Oliver and Wong 2003; Oliver, Ha, and Callen 2012).

In addition to the more durable institutional and compositional factors, the specific context of an election can also impact the level of voter turnout. Turnout is often low when an incumbent is running for re-election at the local level (Caren 2007; de Benedictis-Kessner 2018). However, the effect of incumbency status can vary depending on incumbent racial identity (Barreto, Villarreal, and Woods 2005; Keele et al. 2017; Spence, McClerking, and Brown 2009; Shah and Marschall 2011). When an election is competitive, voters tend to perceive higher benefits to their participation, and turnout increases (Caren 2007). Competitive elections featuring high quality candidates usually feature higher levels of campaign spending, which can increase turnout by helping voters to be more informed (Holbrook and Weinschenk 2014b; Holbrook and Weinschenk 2014a).

Voters and Ranked-Choice Voting: More Choice and More Complexity

How might we expect the implementation of Ranked-Choice Voting to affect voters in urban and local elections? Compared to plurality run-off electoral systems, which provide voters the opportunity to choose one candidate from a list, RCV offers voters the opportunity to express an expanded set of preferences by rank-ordering. However, offering voters more choice is achieved “at the cost of increased complexity of the task facing voters” (Bowler, Donovan, and Brockington 2003). RCV increases the complexity of the voting task in at least two ways. First, the inherent complexity of RCV-style ballots and the voting process itself increase the costs of voting. Support for this argument can be found in several studies that examine voter propensity to make errors when marking their ballots. Neely and Cook (2008) find evidence that the complex RCV ballots produced higher aggregate rates of overvote ballot errors in San Francisco elections after RCV adoption. Neely and McDaniel (2015) examine individual ballot image files within a natural experiment, and find higher rates of ballot errors in RCV elections compared to non-RCV elections.

Research into the question of whether voters perceive RCV to be more complicated presents somewhat mixed findings. Neely, Cook, and Blash (2006) survey voters after the implementation of

RCV in San Francisco. They find that around 87% of survey respondents reported that they understood RCV “fairly well or perfectly well.” They do not find any significant disparities in understanding associated with age differences, but do find that reported level of understanding varies with education level. They also find that older voters were less likely to report satisfaction with RCV elections. According to a post-election survey of voters in Minneapolis, MN, about 90% of voters reported understanding RCV “perfectly well or fairly well” (Frank et al. 2010; Lewyn 2012). However, older voters indicated less understanding than younger voters, and higher education levels was associated with more understanding. A more recent survey experiment that matches survey respondents in several RCV cities with respondents in plurality cities finds stronger evidence for the complexity thesis (Donovan, Tolbert, and Gracey 2019). Donovan, Tolbert, Gracey (2019) find that voters in RCV cities are more likely to report that understanding voting instructions was “very or somewhat difficult” compared to voters in plurality voting systems. They find that older voters are significantly less likely to report understanding RCV systems very well than older voters in plurality systems. They find no racial disparities, but do suggest that more attention should be paid to improving voter education in RCV cities.

The psychological process of ranking candidate preferences is a second way in which RCV may increase the complexity of the voting task. If the psychological process of ranking multiple candidates compared to choosing one candidate is more cognitively demanding some voters may decline to participate. Although this proposition has not been directly tested with respect to RCV, there is evidence to support the argument. Most directly, Lau and Redlawsk (2006) find that rank-ordering candidate preferences requires significantly more cognitive effort than making one candidate preference. Indirect support for the complexity thesis is provided by studies showing that significant proportions of the electorate do not fully utilize the option afforded by RCV to rank-order multiple candidate preferences, with 25%-40% of voters not fully utilizing all of their candidate rank-preference slots (Burnett and Kogan 2015; Neely and Cook 2008; Nielson 2017). Neely and Cook (2008) do find evidence of a positive “learning curve” with voters adapting to the relatively new RCV system. Neely and McDaniel (2015) find variation in propensity to rank multiple candidates in RCV elections, with voters more likely to fully utilize their rank-order preferences in more high profile contests, such as mayoral elections. These results suggest that the increased cognitive effort required to rank multiple candidates causes some voters to choose not to do so, either through indifference, lack of appropriate information to guide preference formation, or as a way to minimize cognitive effort.

Additional support can be found in research that examines voter preferences in RCV style elections. Blais et al. (2012) find that voters alter the way they make their choices under RCV type systems

compared to plurality or first past the post systems. Alvarez, Hall, and Levin (2018) find that voters rely primarily upon candidate traits when developing rank-ordered candidate preferences in low-information RCV elections.

Third, several studies document voter and candidate confusion with the mechanical tabulation “instant run-off” process whereby RCV elections produce a winner. Neilson, Burnett and Kogan.

Voter Turnout and Ranked-Choice Voting

Advocates for Ranked-Choice Voting make various claims about how RCV will expand choice and reduce negative campaigning, which will mobilize voters and increase turnout (Fair Vote 2018; Jerdonek 2006; Lavin 2019). Research does suggest that candidates in RCV elections attempt to engage in more positive campaigning in order to appeal to supporters of other candidates, and that voters express recognition of and satisfaction with more positive campaigning (Donovan, Tolbert, and Gracey 2016). There is also evidence that RCV electoral systems may have a positive impact on the race and gender diversity of politicians running for election (John, Smith, and Zack 2018). These results suggest an indirect mechanism whereby voter turnout may increase after the adoption of Ranked-Choice Voting. However, a review of existing empirical research on the question of voter turnout under RCV is more consistent with the theory that the complexity of RCV increases voter information costs rather than the theory that RCV will attract new voters.

Previous empirical research into how Ranked-Choice Voting affects voter participation in local elections is fairly limited and the findings are somewhat mixed. McDaniel (2016) examines precinct-level voter turnout in San Francisco before and after the implementation of Ranked-Choice Voting in mayoral elections, and finds a significant association between RCV and lower turnout among some racial identity groups in the electorate. McDaniel also finds that disparities in voter participation related to age and education were exacerbated in elections after RCV implementation. Kimball and Anthony (2016) examine aggregate city-level voter turnout and employ a difference-in-differences research design that is more appropriate for assessing the potential causal impact of an election reform on aggregate voter turnout than the design used in McDaniel (2016). Kimball and Anthony (2016) report two difference-in-differences estimates of the RCV effect on turnout in general elections, both of which show a negative RCV effect. The first reported estimate, calculated from a model without any controls, suggests that RCV reduced general election by about five percentage points. However, the authors do not report any standard error or p-value for this particular estimate. The second estimate, calculated from a model that includes controls for several institutional factors, produced a negative coefficient (-4.1) with a large standard error (3.8) that is not statistically

significant. Based on this estimate, the authors conclude that RCV “does not appear to have a strong impact on voter turnout” in general elections. Kimball and Anthony (2016) go on to argue that RCV does have a positive effect on voter turnout when comparing turnout in RCV elections to plurality primary and run-off elections. By eliminating primary and run-off elections, RCV elections will usually be held at the same time as other local, state, and federal general elections, which tend to produce higher voter turnout than elections held at different times on the calendar, like primary elections. Given the consensus in the research literature on the importance of election timing, a plausible interpretation of this finding is that it is a result of the change in election timing rather than being caused by RCV itself. Therefore, it is far from clear whether this particular comparison is directly relevant to the overall question of how RCV affects voter turnout.

Hypothetical Expectations: More Complexity Leads to Lower Voter Turnout

The theoretical argument that the added complexity inherent to Ranked-Choice Voting increases the information costs of voting suggests that RCV will be associated with lower levels of voter turnout, at the margins. I develop that theoretical argument with the following four hypotheses:

H₁: Voter turnout rates will be lower in elections after the implementation of Ranked-Choice Voting compared to elections before RCV implementation.

H₂: The effect of RCV on voter turnout will vary with election timing cycle. Given that odd-year and off-cycle elections are associated with lower voter turnout in municipal elections, the effect of RCV will be more pronounced in odd-year elections compared to even-year elections.

H₃: Given that voter turnout tends to increase when elections are more competitive, the negative effect of RCV on voter turnout will be more pronounced as electoral competitiveness declines; as margin of victory increases, RCV will have a stronger negative effect on voter turnout, compared to more competitive elections with lower margins of victory.

H₄: Given that the presence of an incumbent in an election reduces the information costs of voting, the effect of RCV on voter turnout will vary with candidate incumbency status, with a larger decrease in voter turnout in elections without an incumbent, compared to elections with an incumbent.

Data and Exploratory Analysis

Table 1 lists the seven cities included in the current analysis, arranged by year of Ranked-Choice Voting implementation for mayoral elections.¹ The dataset includes fifty-six mayoral elections for these RCV cities during the time-periods listed in Table 1, including all primary, general, run-off, and special elections; thirty-six of the elections occurred prior to the adoption of RCV and twenty occurred after RCV implementation.

Table 1. Ranked-Choice Voting cities by year of implementation for mayoral elections

City	RCV Implementation	Election Timing Cycle (Elections years included in analysis)
San Francisco, California	2007	Odd Years (1995 – 2017, 2018)
Minneapolis, Minnesota	2009	Odd Years (1997 – 2017)
Oakland, California	2010	Even Years Non-Pres. (1998 – 2018)
San Leandro, California	2010	Even Years Non-Pres. (1998 – 2018)
Saint Paul, Minnesota	2013	Odd Years (1997 – 2017)
Berkeley, California	2012	Even Years Non-Pres. (1998 – 2006) Even Years Pres. (2008 – 2018)
Santa Fe, New Mexico	2018	Even Years Non-Pres. (2006 – 2018)

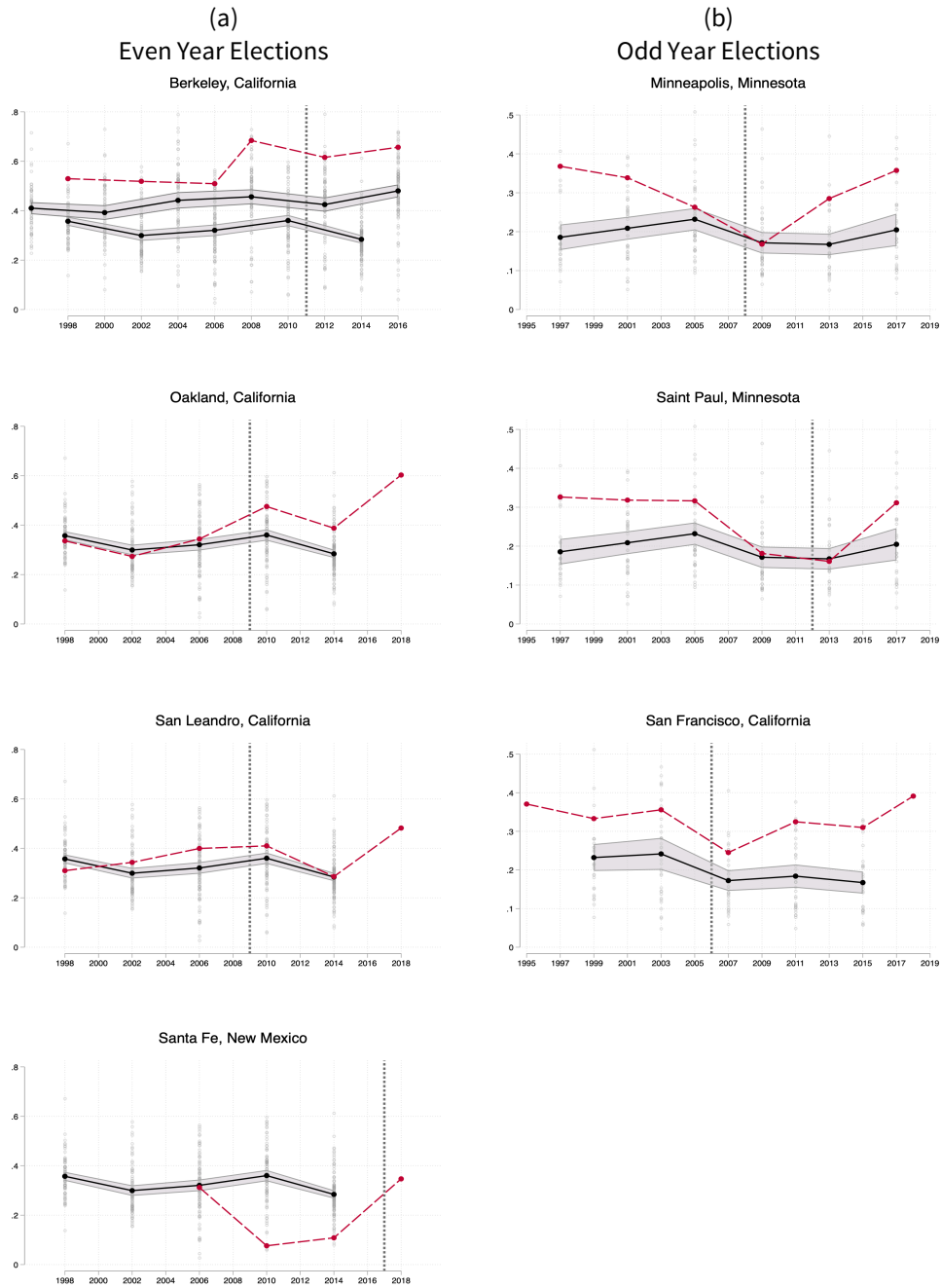
The timing of mayoral elections in the RCV cities varies widely. Four of the cities conduct their elections during even-numbered years. Oakland, San Leandro, and Santa Fe conduct their elections during non-presidential, midterm election years. Berkeley used the same midterm year election cycle until 2006, after which its elections were changed to coincide with presidential elections. Minneapolis and Saint Paul conduct their elections during odd-years, and San Francisco elections are on a different odd-year election cycle. The most recent San Francisco mayoral election, a special election to replace an incumbent who passed away before the end of his term, took place in 2018.

¹ The analysis does not include two RCV cities, Cambridge, MA, and Portland, ME. Portland implemented RCV at the same time as it adopted elections for mayor, which makes it practically impossible to separate out the effect of RCV. Cambridge has been using RCV for so long that it makes finding pre-RCV election data very difficult.

There are several possible ways to calculate the voter turnout rate in municipal elections. Cities and other local election jurisdictions usually report turnout as a percentage of registered voters. However, due to well-known differences between those individuals who are likely to register to vote and those who are not, the registered voter turnout rate systematically misrepresents the eligible electorate. The voting age population is a better measure of the electorate, but will consistently and systematically overestimate the eligible electorate in several ways, not least by including non-citizens (McDonald and Popkin 2001). The citizen voting age population (CVAP) measures provided through the U.S. Census and the American Community Survey are the best available approximation of the eligible electorate in local elections (Holbrook and Weinschenk 2014a; McDonald and Popkin 2001). I use those CVAP estimates as the basis for my calculation of the voter turnout rate.

The chronological trends of voter turnout in general elections for mayor in the seven RCV cities are shown in Figure 1, with the vertical dashed line indicating the divide between before and after RCV implementation for each city. The graphs are arranged by whether a city conducts elections in even-numbered years or odd-numbered years. The data in Figure 1 indicate that three of the four even-year cities saw an increase in voter turnout in the first election after RCV implementation, with Berkeley, CA being the one exception. In the three odd-year cities, voter turnout declined in the first mayoral election conducted with RCV. While turnout has generally increased in those three cities since the first RCV election, it is also notable that the first RCV election marks the nadir of voter turnout during the time period included in the analysis. The voter turnout trends for RCV cities in Figure 1 do suggest that any impact of RCV varies with election timing. Beyond that, the RCV city turnout data are not very informative about the overall effect of RCV on voter turnout.

Figure 1. Voter Turnout in Ranked-Choice Voting Cities Compared to Non-RCV Cities with Similar Election Timing



Note: Red lines indicate voter turnout in RCV cities. Grey dots indicate voter turnout in non-RCV cities, and the black lines indicate mean turnout with 95% CIs. Vertical dashed lines represent year of Ranked-Choice Voting adoption.

Empirical Strategy: Difference-in-Differences

A difference-in-differences research design is one quasi-experimental strategy for estimating the effect of the adoption of new electoral rules, such as RCV, when using observational data that is not randomly assigned to treatment and control groups (Angrist and Pischke 2008). In the current analysis, the “treatment” group is the group of RCV cities and elections indicated in Table 1. To construct the “control” or comparison group of cities and elections for the difference-in-differences analysis, I relied on three decision-rules designed to produce a comparison group that is similar to the RCV “treatment” group in terms of population demographics and electoral factors. First, I follow the work of several other scholars who examine RCV cities and match them with several demographically similar cities that use plurality election rules rather than Ranked-Choice Voting (Donovan, Tolbert, and Gracey 2016). Second, following the work of scholars who have examined voter turnout in urban elections, I added mayoral election data from 25 of the largest cities in the U.S. (Caren 2007; Hajnal and Trounstein 2014; Wood 2002). Finally, given that four of the seven RCV cities are in California, I utilized data from the California Elections Data Archive to add elections from every city in California that conducts elections for mayor during the period of 1995 - 2017 (Institute for Social Research Center for the Study of California 2017).

Table 2 displays averages for several important electoral and population demographic variables for the RCV cities and the comparison group of Non-RCV cities, for the period before and after RCV implementation.² Prior to the adoption of RCV, the RCV cities had populations that were, on average, more white, more black, less Latino. Additionally, prior to RCV, the RCV cities had a slightly higher proportion of their population that was age 65 or over, and a much higher proportion of their population had at least a B.A. degree. Although the population demographics of the comparison group of cities are not an exact match for the RCV cities, the post-RCV demographic trends are very similar between the two groups. Both groups of cities exhibit small increases in their black population, their Latino population, the population with at least a B.A. degree, and the proportion of their population age 65 and over. Both groups of cities exhibit an increase in median household income, and both groups exhibit a decline in white population proportion.

² For the RCV cities, elections are included in the post-RCV time period based upon the year of implementation indicated in Table 1. For the non-RCV comparison group, elections after 2009 are included in the post-RCV time period.

Table 2. Mean Comparison of Electoral Context and Population Demographics in RCV Cities and Non-RCV Cities

	RCV Cities (7)		Non-RCV Cities (204)	
	Pre-RCV	Post-RCV	Pre-RCV	Post-RCV
Race: Percent Black	0.127	0.133	0.079	0.081
Race: Percent Hispanic/Latino	0.150	0.183	0.342	0.398
Race: Percent White	0.531	0.444	0.461	0.387
Age: Percent Age 65 or Older	0.132	0.135	0.119	0.143
Education: Percent B.A. Degree plus	0.389	0.446	0.222	0.250
Median Household Income	\$44,166	\$60,494	\$50,686	\$59,094
Incumbent	0.583	0.550	0.600	0.587
Margin of Victory	0.176	0.262	0.374	0.383
Number of Candidates	5.389	8.300	2.728	2.904
Partisan Elections	0	0	0.033	0.042
Number of Elections	36	20	758	571

In addition to the selection of the comparison group, there several other specification issues which are important to consider when developing difference-in-differences models. Difference-in-differences estimation does not require the “treatment” and “control” groups to exhibit perfect covariate balance. However, in order to account for difference across cities and over time, some of the difference-in-differences models estimated include controls for demographic and electoral factors that may affect voter turnout. The specification of the models presented below is organized on the basis of three sets of city-level covariates: 1) all of the population demographic variables for race, age, education, and income included in Table 2 above; 2) over-time variation in electoral context, including incumbency, electoral competitiveness as indicated by margin of victory, and the number of candidates; 3) city-level variation in electoral institutions, including election timing cycle, partisan elections, and whether the election is a general election, primary, run-off, or special election.

A second model specification issue is related to the different implementation time periods within the RCV treatment group of cities. In order to account for different implementation time, the models include fixed effects for election year. In order to account for time-varying factors at the city level that are not captured by electoral context, institutions, or population demographic variables, the models include city fixed effects.

Finally, and most importantly, the parallel (common) trends assumption for difference-in-differences estimates means that although the treatment and control groups are not required to have the same levels of voter turnout in the pre-treatment period, they are expected to exhibit similar trends. This assumption is difficult to test definitively, but visual inspection of the data in Figure 1 does suggest that the comparison group election data may present a violation of the parallel trends assumption. In

such cases, it has been suggested that matching comparison and treatment units on the basis of pre-treatment observable characteristics is a way to improve the quality of the estimates (Ryan, Burgess, and Dimick 2015). Because of this, I estimate some difference-in-differences models with matching.

The RCV Effect on Voter Turnout

The central question addressed in this study is what effect, if any, does the adoption of Ranked-Choice Voting have on voter turnout in mayoral elections. The first hypothesis (H_1) stated the expectation that RCV would have a negative effect on voter turnout. The difference-in-difference model estimates for the average effect of Ranked-Choice Voting on voter turnout in RCV cities presented in Table 3 are designed to test that hypothesis. Each of the first three model estimates (DID 1, DID 2, and DID 3) are positive, but not statistically significant. The model that adjusts for city-level population demographics (DID 2) produces an estimate that is slightly more positive than the baseline model estimate (DID 1), but the addition of the city demographic variables (DID 2) reduces the overall model goodness of fit statistics. The model that adjusts for electoral context factors such as incumbency, number of candidates, and the overall competitiveness of the election (DID 3) produces a similar, positive coefficient with a large standard error.

Table 3. Difference-in-Differences Estimates of Average Effect of Ranked-Choice Voting on Voter Turnout in Mayoral Elections in RCV Cities

	DID 1	DID 2	DID 3	DID 4	DID 5	DID 6
Diff-in-Diff Estimate	0.017 (0.020)	0.023 (0.012)	0.024 (0.024)	-0.029** (0.010)	-0.033* (0.014)	-0.047* (0.022)
City Demographics		y			y	y
Electoral Context			y		y	y
Electoral Institutions				y	y	y
Year FEs	y	y	y	y	y	y
City FEs	y	y	y	y	y	y
Matched						y
R ²	0.438	0.353	0.463	0.462	0.509	0.922
BIC	-3579.527	-3553.768	-3696.174	-3815.723	-3924.226	-3593.279
N Elections (Treatment)	56	56	56	56	56	56
N Elections (Control)	1,323	1,323	1,319	1,323	1,319	1,319
N Elections (Total)	1,379	1,379	1,375	1,379	1,375	1,375

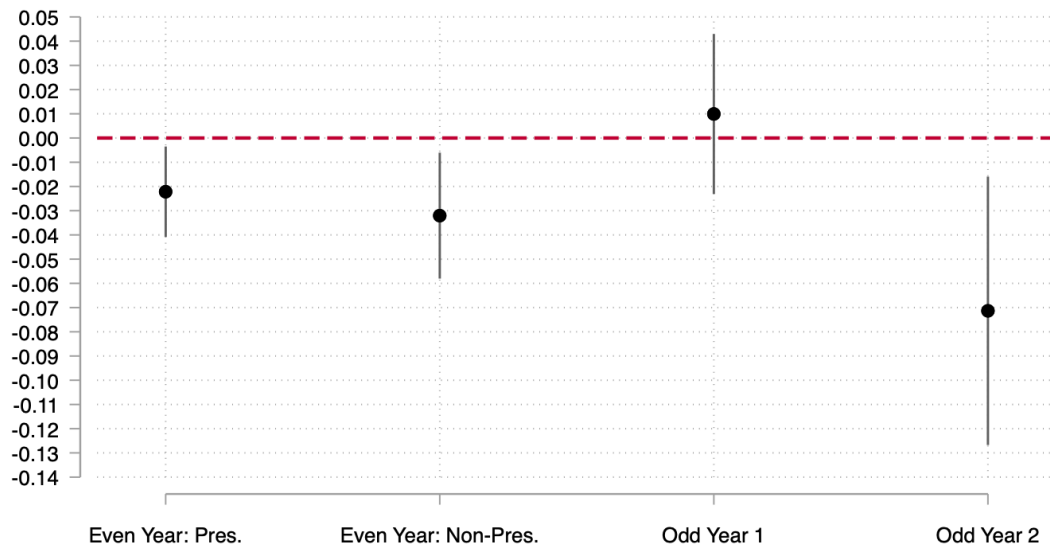
Note: Difference-in-difference estimates calculated from linear fixed-effects regression models with fixed-effects for city and election year plus different sets of covariates: 1) no covariates; 2) city population demographics; 3) electoral context (incumbency, competitiveness, number of candidates); 4) electoral institutions (timing, type, non-partisan); 5) all electoral and city demographic covariates; and 6) all covariates with matching of treatment and comparison group. Robust standard errors in parentheses. [†]p < 0.10, *p < 0.05, **p < 0.01

The fourth model estimate (DID 4) includes covariates accounting for differences in electoral institutions across cities, such as the election timing cycle, whether an election is a primary, general, run-off, or special election, and whether elections are officially partisan or non-partisan. The DID 4 estimate of -0.029 is statistically significant, as is the estimate of -0.033 for the fifth model (DID 5), which includes all of the previous model covariates. The sixth model (DID 6), which was specified after matching units on pre-treatment covariates, produces an estimate of the negative RCV effect of close to five percentage points. These results, consistent with H_1 , indicate that the adoption of Ranked-Choice Voting results in a decrease in voter turnout of approximately 3–5 percentage points, on average, in RCV cities.

The second hypothesis (H_2) presented the expectation that the effect of RCV would vary with the election timing cycle. The pattern of the DID 4 and DID 5 estimates are consistent with that hypothesis, suggesting that the RCV effect is connected to differences in electoral institutions, such as election the election timing cycle. However, the model estimates presented in Table 3 speak to the average effect across all RCV cities. In order to more properly evaluate H_2 , I develop a triple-differences model, so-called because it calculates the difference between the difference-in-differences estimates for specific sub-groups. The triple-differences model includes all of the covariates from full DID 5 model presented above, plus an additional difference-in-differences estimate for each election cycle subgroup.

The results from that model, presented in Figure 2, indicate that the effect of RCV does vary with election timing cycle, with estimates of a 2–3 percentage point decrease in turnout in RCV cities conducting elections on even-year election cycles. The results indicate a larger negative effect of about 7 points for RCV cities that hold elections on the second Odd Year cycle, which is the election timing cycle used for elections in San Francisco. The results show no significant RCV effect in the “Odd Year 1” election cycle cities (Minneapolis and Saint Paul). These results are consistent with the hypothetical expectation (H_2) that the effect of RCV would vary by election timing, but the specific pattern of the variation is only partially consistent with the expectation that the RCV effect would be larger for elections held during odd-year cycles, compared to those held during even-year cycles.

Figure 2. Average Effect of Ranked-Choice Voting on Voter Turnout by Election Timing Cycle

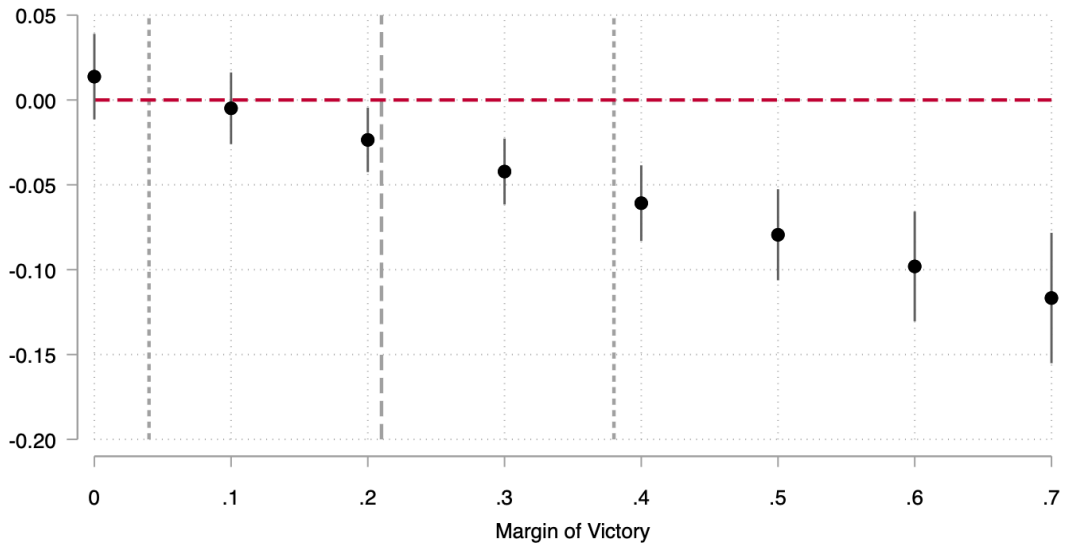


Note: Average marginal effects with 95% CIs estimated from triple-differences model with city and year fixed effects.

Electoral Context and the Effect of RCV on Voter Turnout

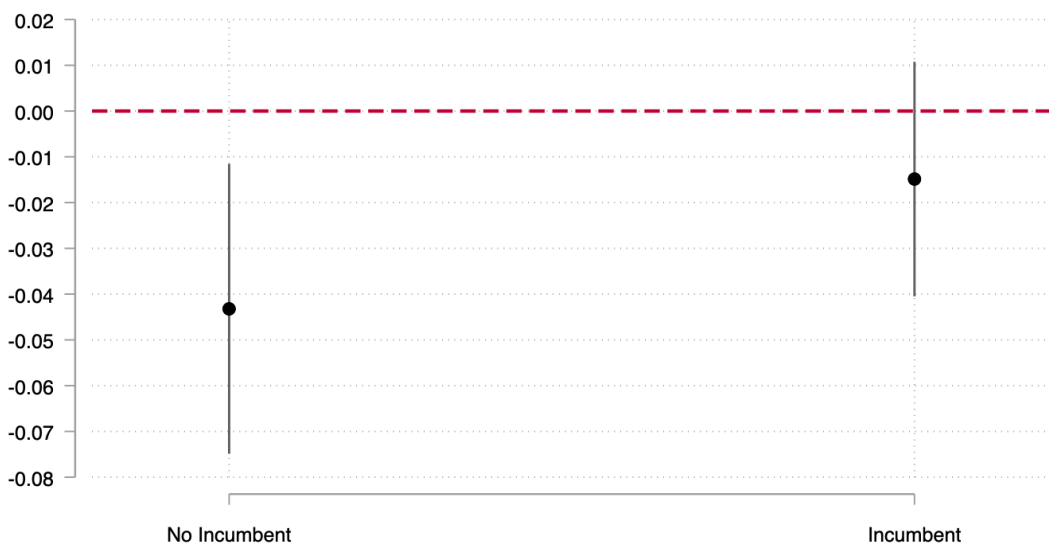
In the final two hypotheses, I posited that the effect of RCV on voter turnout would be conditional upon specific electoral context factors. In the third hypothesis (H_3), I argued that competitive elections should reduce the impact of RCV. In order to specifically evaluate that hypothesis, I again rely on a triple-differences model that includes the full DID 5 model covariates to produce difference-in-differences estimates of the RCV effect over the range of electoral competitiveness as measured by margin of victory. The results, presented in Figure 3, indicate that RCV has an increasingly negative impact on voter turnout as margin of victory increases. For RCV cities, the average margin of victory in mayoral elections is about 21%. In elections that are more competitive than average (margin of victory less than 20%), there is no significant RCV effect on voter turnout. In elections with a competitiveness level around the average, there is a statistically significant negative RCV effect of about 3 percentage points. The negative effect increases as elections become less competitive, ranging from about 5 points at one standard deviation above average, to about 10 points at the highest values for margin of victory observed in mayoral elections in RCV cities. These results are strongly consistent with H_3 , and suggest that the cognitive demands of RCV that might deter some voters are somewhat diminished in relatively competitive elections, when voters have higher incentives to turn out to vote.

Figure 3. Average Effect of Ranked-Choice Voting on Voter Turnout by Election Competitiveness



Note: Average marginal effects with 95% CIs estimated from triple-differences model with city and year fixed effects. Vertical dashed lines represent mean +/- one standard deviation for margin of victory in RCV cities.

Figure 4. Average Effect of Ranked-Choice Voting on Voter Turnout by Incumbency



Note: Average marginal effects with 95% CIs estimated from triple-differences model with city and year fixed effects.

In the fourth hypothesis (H_4), I posited that the presence of a familiar incumbent candidate in an election might also reduce the effect of RCV on voter turnout. Or, put another way, the cognitive demands of ranking which deter some people from voting, might be more apparent in open-seat elections when there are likely to be more candidates who are relatively unfamiliar to voters. The results presented in Figure 4, estimated from a triple-differences model, indicate that RCV has no significant effect on turnout when an incumbent is running for re-election. In open-seat elections that do not feature an incumbent candidate, there is a significant negative RCV effect on turnout of approximately 4 points, on average. These results are consistent with H_4 , and bolster the theory that the negative marginal effect of RCV on voter turnout is related to the increased complexity and cognitive demands of ranking candidates compared to the process of choosing a candidate in a plurality electoral system.

Discussion and Conclusion

Many who are interested in electoral reform to improve elections in American cities are considering the adoption of Ranked-Choice Voting. In the current study, I improve upon previous efforts to estimate the effect of RCV on voter participation in cities that adopt RCV. The findings suggest that the increased complexity of RCV will have a negative effect on voter turnout; an effect that can be expected to increase in some off-cycle odd-year elections and in elections that are relatively uncompetitive. The finding of a negative effect in even-year elections is particularly noteworthy, suggesting that the adoption of RCV may potentially counter-act one of the most effective ways of increasing turnout in municipal elections: changing election timing to coincide with higher level elections.

The finding of a negative effect in some odd-year elections but not others may present a challenge to the theory that increased complexity will have a marginal negative effect on voter turnout. However, it is also possible that the lack of any RCV effect in some odd-year elections is related to factors that are not included in the analysis. One such possibility is the quality of election administration. If so, this would suggest that the negative impact of RCV on voter participation may be alleviated by high quality election administration.

There are several other possible limitations to the generalizability of the current study. First, in terms of methodological limitations, it is possible that the results are overly sensitive to the composition of the comparison group. Second, it is possible that negative turnout effect of RCV would not generalize to elections for higher level offices, especially statewide elections for state and federal office. Such elections might be expected to pull more voters to the polls, overcoming any

expected RCV effect. Third, if RCV is implemented in cities that use partisan elections, it is possible that the information signals contained in partisan labels would overcome any negative RCV effect on turnout.

With those limitations noted, it is also important to note that up to this point, most of the cities that have adopted Ranked-Choice Voting are relatively high turnout cities. The finding of a negative marginal effect on turnout in these high turnout cities suggests that this may be a conservative estimate. If RCV is implemented in cities where relatively lower turnout is the norm, it is quite possible that the future estimates may find an even larger negative effect.

The results should also be considered in the context of research on the relationship between low voter turnout and democratic accountability (Anzia 2013; de Benedictis-Kessner 2018; Kogan, Lavertu, and Peskowitz 2018). By reducing voter turnout, the adoption of Ranked-Choice Voting may also serve to further empower certain interest groups and amplify the voices of those members of the electorate who are already likely to be over-represented in urban and local elections in the United States.

Works Cited

- Alvarez, R. Michael, Thad E Hall, and Ines Levin. 2018. "Low-Information Voting: Evidence From Instant-Runoff Elections." *American Politics Research*, March, 1–27. doi:10.1177/1532673X18759643.
- Angrist, Joshua D, and Jörn-Steffen Pischke. 2008. *Mostly Harmless Econometrics*. Princeton University Press.
- Anzia, Sarah F. 2011. "Election Timing and the Electoral Influence of Interest Groups." *The Journal of Politics* 73 (2): 412–27. doi:10.1017/S0022381611000028.
- Anzia, Sarah F. 2013. *Timing and Turnout*. University of Chicago Press.
- Barreto, M A, M Villarreal, and N D Woods. 2005. "Metropolitan Latino Political Behavior: Voter Turnout and Candidate Preference in Los Angeles." *Journal of Urban Affairs* 27 (1): 71–91.
- Blais, André, Maxime Héroux-Legault, Laura Stephenson, William Cross, and Elisabeth Gidengil. 2012. "Assessing the Psychological and Mechanical Impact of Electoral Rules: A Quasi-Experiment." *Electoral Studies* 31 (4): 829–37. doi:10.1016/j.electstud.2012.05.009.
- Bowler, Shaun, Todd Donovan, and David Brockington. 2003. *Electoral Reform and Minority Representation*. Ohio State University Press.
- Bridges, Amy. 1999. *Morning Glories: Municipal Reform in the Southwest*. Princeton, NJ: Princeton University Press.
- Burnett, Craig M., and Vladimir Kogan. 2015. "Ballot (and Voter) 'Exhaustion' Under Instant Runoff Voting: an Examination of Four Ranked-Choice Elections." *Electoral Studies* 37 (2015): 41–49.
- Caren, Neal. 2007. "Big City, Big Turnout? Electoral Participation in American Cities." *Journal of Urban Affairs* 29 (1): 31–46.
- de Benedictis-Kessner, Justin. 2018. "Off-Cycle and Out of Office: Election Timing and the Incumbency Advantage." *Journal of Politics* 80 (1): 119–32. doi:10.1086/694396.
- Donovan, Todd, Caroline Tolbert, and Kellen Gracey. 2016. "Campaign Civility Under Preferential and Plurality Voting." *Electoral Studies* 42: 157–63.
- Donovan, Todd, Caroline Tolbert, and Kellen Gracey. 2019. "Self-Reported Understanding of Ranked-Choice Voting." *Social Science Quarterly* 78 (4): 973–79. doi:10.1111/ssqu.12651.
- Fair Vote. 2018. "Ranked Choice Voting / Instant Runoff." Fairvote.org. <https://www.fairvote.org/rcv#rcvbenefits>
- Frank, Stephen, Michelle Kukoleca Hammes, David H. Robinson, Sandrine Zerbib, and Steven C Wagner. 2010. "St. Cloud State University Survey Research Report: Ranked Choice Voting 2009 City of Minneapolis Municipal Elections."
- Hajnal, Zoltan L., and Jessica L Trounstine. 2005. "Where Turnout Matters: the Consequences of Uneven Turnout in City Politics." *Journal of Politics* 67 (2): 515–35.
- Hajnal, Zoltan L., and Jessica L Trounstine. 2014. "What Underlies Urban Politics? Race, Class, Ideology, Partisanship, and the Urban Vote." *Urban Affairs Review* 50 (1): 63–99. doi:10.1177/1078087413485216.

- Hajnal, Zoltan L., and Paul G Lewis. 2003. "Municipal Institutions and Voter Turnout in Local Elections." *Urban Affairs Review* 38 (5): 645–68. doi:10.1177/1078087403038005002.
- Hajnal, Zoltan L., Paul George Lewis, and Hugh Louch. 2002. *Municipal Elections in California: Turnout, Timing, and Competition*. Public Policy Instit. of CA.
- Hays, Samuel P. 1964. "The Politics of Reform in Municipal Government in the Progressive Era." *The Pacific Northwest Quarterly* 55 (4): 157–69.
- Holbrook, Thomas M, and Aaron C Weinschenk. 2014a. "Campaigns, Mobilization, and Turnout in Mayoral Elections." *Political Research Quarterly* 67 (1): 42–55.
- Holbrook, Thomas M, and Aaron C Weinschenk. 2014b. "Money, Candidates, and Mayoral Elections." *Electoral Studies* 35 (September): 292–302. doi:10.1016/j.electstud.2014.02.002.
- Institute for Social Research, Center for the Study of California. 2017. "California Elections Data Archive." Sacramento, CA.
- Jerdonek, Christopher. 2006. "Ranked Choice Voting and Voter Turnout in San Francisco's 2005 Election." Fairvote.org. SFRCV. February 4.
<http://fairvotemn.org/sites/fairvotemn.org/files/turnout.pdf>.
- John, Sarah, Haley Smith, and Elizabeth Zack. 2018. "The Alternative Vote: Do Changes in Single-Member Voting Systems Affect Descriptive Representation of Women and Minorities?" *Electoral Studies* 54 (May): 90–102. doi:10.1016/j.electstud.2018.05.009.
- Keele, L J, P R Shah, I White, and K Kay. 2017. "Black Candidates and Black Turnout: a Study of Viability in Louisiana Mayoral Elections." *Journal of Politics* 79 (3): 780–91.
- Kelleher, C, and D Lowery. 2004. "Political Participation and Metropolitan Institutional Contexts." *Urban Affairs Review* 39 (6): 720–57. doi:10.1177/1078087404264219.
- Kimball, David C, and Joseph Anthony. 2016. "Voter Participation with Ranked Choice Voting in the United States." Presented at the Annual Meeting of the American Political Science Association, Philadelphia, PA.
- Kogan, Vladimir, Stéphane Lavertu, and Zachary Peskowitz. 2018. "Election Timing, Electorate Composition, and Policy Outcomes: Evidence From School Districts." *American Journal of Political Science* 62 (3): 637–51. doi:10.1111/ajps.12359.
- Lau, Richard R, and David P Redlawsk. 2006. *How Voters Decide: Information Processing in Election Campaigns*. New York: Cambridge University Press.
- Lavin, Nancy. 2019. "A Tale of Two Cities: What Chicago Can Learn From San Francisco's Mayoral Election." Fairvote.org. April 4.
- Lewyn, Michael. 2012. "Two Cheers for Instant Runoff Voting." *Phoenix Law Review* 6 (117): 117–36.
- McDaniel, Jason. 2016. "Writing the Rules to Rank the Candidates: Examining the Impact of Instant-Runoff Voting on Racial Group Turnout in San Francisco Mayoral Elections." *Journal of Urban Affairs* 38 (3): 387–408.
- McDonald, Michael P, and Samuel L. Popkin. 2001. "The Myth of the Vanishing Voter." *American Political Science Review* 95 (4): 963–74.

- Neely, Francis, and Corey Cook. 2008. "Whose Votes Count?: Undervotes, Overvotes, and Ranking in San Francisco's Instant-Runoff Elections." *American Politics Research* 36 (4): 530–54. doi:10.1177/1532673X08318110.
- Neely, Francis, and Jason McDaniel. 2015. "Overvoting and the Equality of Voice Under Instant-Runoff Voting in San Francisco." *California Journal of Politics and Policy* 7 (4).
- Neely, Francis, Corey Cook, and Lisel Blash. 2006. "An Assessment of Ranked-Choice Voting in the San Francisco 2005 Election Final Report July 2006." San Francisco, CA: Public Research Institute, San Francisco State University. (Accessed Feb. 22, 2007).
- Nielson, Lindsay. 2017. "Ranked Choice Voting and Attitudes Toward Democracy in the United States: Results From a Survey Experiment." *Politics & Policy* 45 (4): 535–70. doi:10.1111/j.1747-1346.2009.00196.x/full.
- Oliver, J. Eric. 2000. "City Size and Civic Involvement in Metropolitan America." *American Political Science Review* 94 (2): 361–73.
- Oliver, J. Eric. 2003. "Mental Life and the Metropolis in Suburban America: The Psychological Correlates of Metropolitan Place Characteristics." *Urban Affairs Review* 39 (2): 229–53.
- Oliver, J. Eric, and Janelle Wong. 2003. "Intergroup Prejudice in Multiethnic Settings." *American Journal of Political Science* 47 (4): 567–82. doi:10.1111/1540-5907.00040.
- Oliver, J. Eric, Shang E. Ha, and Zachary Callen. 2012. *Local Elections and the Politics of Small-Scale Democracy*. Princeton, NJ: Princeton University Press.
- Richie, Robert. 2004. "Instant Runoff Voting: What Mexico (and Others) Could Learn." *Election Law Journal* 3 (3):501–12.
- Richie, Robert, Caleb Kleppner, and Terrill Bouricius. 2000. "Instant Runoffs: A Cheaper, Fairer, Better Way to Conduct Elections." *National Civic Review* 89 (1): 95–110.
- Richie, Robert, Terrill Bouricius, and Philip Macklin. 2001. "Candidate Number 1: Instant Runoff Voting." *Science* 294 (5541): 303–6.
- Ryan, Andrew M, James F Burgess, and Justin B Dimick. 2015. "Why We Should Not Be Indifferent to Specification Choices for Difference-in-Differences." *Health Services Research* 50 (4): 1211–35. doi:10.1111/1475-6773.12270.
- Schaffner, Brian F., Matthew Streb, and Gerald Wright. 2001. "Teams Without Uniforms: The Nonpartisan Ballot in State and Local Elections." *Political Research Quarterly* 54 (1): 7–30.
- Shah, Paru, and Melissa Marschall. 2011. "The Supply Side of Minority Representation: When and Where Do Minority Candidates Run?" Presented at the Annual Meeting of the American Political Science Association, Seattle, WA.
- Spence, L K, H K McClerking, and R Brown. 2009. "Revisiting Black Incorporation and Local Political Participation." *Urban Affairs Review* 45 (2): 274–85. doi:10.1177/1078087409341546.
- Wood, Curtis. 2002. "Voter Turnout in City Elections." *Urban Affairs Review* 38 (2): 209–31. doi:10.1177/107808702237659.