

**Does Ranked Choice Voting Affect Turnout?:**

**An Examination of US Mayoral Elections**

by

Luz Rapoport

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## Abstract

How does the way we vote affect democratic participation? The goal of my thesis is to determine the effects of the adoption of Ranked Choice Voting (RCV) by looking at voter turnout across the United States. Whereas most people recognize what is called a Single Member Plurality system, 2 states, 3 counties, and 47 cities have established the use of Ranked Choice Voting (RCV) (FairVote, n.d.).

Based on previous literature, my initial hypothesis was that turnout is affected by RCV, whether positively or negatively. However, I will demonstrate via my findings that, in the aggregate, the usage of RCV does not significantly increase voter turnout. I used local and county level electoral data, including Voter Registered Population (VRP) and votes cast to calculate voter turnout and its statistical correlation to the usage of RCV. This answer is demonstrated through a quantitative, differences-in-differences analysis of turnout in these localities in comparison to others that use a plurality electoral system.

More research should be conducted on this specific question, as case studies and higher implementation rates could provide different results.

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## Introduction

Out of 13,000 electoral locations, two states, three counties, and 47 cities have established the use of Ranked Choice Voting (RCV), as of April 2025. The establishment of such a system has been argued to increase voter turnout, encourage constituent participation, and alter candidate engagement. These effects have been studied previously, yet the direct causal effects of RCV adoption on voter turnout are often overlooked. With that in mind, this thesis aims to answer one question: Does the usage of Ranked Choice Voting in local mayoral elections affect voter turnout? My original hypothesis is that the usage of RCV does affect voter turnout, either positively or negatively. This hypothesis is based on previous research and arguments made by advocates of ranked choice voting in the United States. Based on the results of my analysis, however, there is insufficient evidence to establish any systematic relationship between RCV and voter turnout in mayoral elections. Essentially, in the aggregate, adoption of RCV produces neither an increase nor a decrease in voter turnout.

This thesis begins with a literature review, which determines the academic consensus on what factors affect voter turnout. With that information, I focus on electoral systems, and how the usage of different systems can affect a variety of reasons as to whether the populace is more or less likely to turnout to vote. Then, I look at previous studies, which have broadly focused on the consequences of RCV on candidate and constituent behavior, and therefore voter turnout. Finally, I review RCV advocacy and how previous literature connects to the relevancy of my research.

I then break down my theory and hypothesis, detailing how electoral systems affect democracy, and how I operationalize both of these variables. This section also utilizes visuals to provide the null and alternative hypotheses that drive the rest of this paper. The research design details the quantitative, differences-in-differences approach used to compare control and treatment cities, those using Single Member Plurality (SMP) versus those that have implemented RCV, as well as how RCV can affect the same city's turnout across time. I discuss how I gathered data and determined what cities were studied, both factors determined by the availability of information.

The analysis section then presents the results by walking through the R-Studio run regression models, including tables and figures that visually detail how my conclusion was reached. I find that, *in the aggregate*, there is no direct effect from the establishment of RCV on voter turnout. However, because of the high p-value, I am unable to reject the null hypothesis. Finally, the discussion and conclusion reflect on these findings, their implications for electoral reform, and directions for future research.

## What Explains Voter Turnout? A Review of the Literature

Before diving into how RCV might affect voter turnout, we must first have a comprehensive understanding of a variety of factors that could also be at play when interpreting voter turnout statistics. According to Frank and Coma, who conducted a meta-analysis of 579 elections across 80 democracies, out of “over 127 potential predictors of voter turnout,” as many as 70 correlates are “robustly associated” with the outcome of interest (Frank and Coma 2023, 607). Key factors that have been agreed upon to affect voter turnout within the literature include economic development, degree of illiteracy, population size and density, the presence or absence of compulsory voting, voting age, the electoral system, the closeness of the electoral outcome, and the number of parties (Blais and Dobrzynska 1998; Blais 2006; Frank and Coma 2023).

In this analysis, I will be focusing on the effects of the electoral system of choice on turnout, while running a comparative framework that controls for most other variables between sample cities, such as median income and level of education.

### **Electoral systems**

When it comes to the specific study of the effects of electoral systems on voter turnout, the data is sparse or ambiguous. Blais (2006), in his article for the *Annual Review of Political Science* argues that while certain institutional factors surrounding election management have been proven to affect voter turnout, such as compulsory voting laws and voting age, the direct correlation between the electoral system and turnout is shaky, at best, considering an

inconsistency of results in transnational studies. Further research has continued to emerge that presents new data and reinterprets its results, both agreeing and challenging Blais' conclusion.

Electoral systems can vary broadly, depending on local and federal election laws. The first divergence in electoral system choice is whether to utilize a majoritarian system or a proportional system. Majoritarian systems work so that "officials are elected one at a time in single-member districts, with the winner being the candidate with the most votes — the plurality. (...) Among the advanced industrial democracies, only Great Britain and Canada join [the United States] in clinging to this eighteenth-century method of election" (Amy 2002, 2). In a proportional system, however, multimember districts allow for officials to be elected and assigned based on the proportion of votes their party receives. There are over a dozen variants of majoritarian electoral systems, including the Two Round System, Alternative Vote, Single Member Plurality or SMP (also called First-Past-The-Post (FPTP)), which is the main system used across the US, and Ranked Choice Voting.

In this study, considering that I am strictly analyzing cities within the United States, SMP will be considered to be the "starting point," and the system used by all of my control group cities. As per previous literature, SMP will be defined as based on the plurality principle, in which there has to be one single, absolute winner for a corresponding electoral district who is only required to win a plurality of the vote, rather than over half of the vote (majority) (Colomer 2005; Blais and Aarts 2006).

Ranked Choice Voting is often presented as “the alternative” for SMP, as it continues to provide a majoritarian, single representative result, yet has been argued to have a positive effect on democratic participation (as seen later). While there are multiple definitions of Ranked Choice Voting across the literature, I have found that Simmons et. al. provided the simplest yet most comprehensive definition. They write: “Ranked-choice voting is an electoral system where voters pick a first-choice candidate and have the option to rank further candidates in order of their preferences: second, third, and so on. If a candidate receives more than half of the first-choice preferences, that candidate wins. However, if there is no majority winner after counting first choices, the candidate with the fewest votes is eliminated, and voters who picked that candidate as their ‘number one’ will have their votes count for their next choice candidate. This process continues until a candidate wins with more than half of the votes” (Simmons, Gutierrez, and Transue 2022, 366).

Researchers that argue that electoral systems do affect voter behavior explain it via a variety of mechanisms. In the specific case of RCV, advocates claim that RCV reportedly could encourage the election of racial minorities and women in public office (Bowler, Brockington, and Donovan 2003; Drutman 2020), lead to “cleaner” elections with less “mud-slinging” (Donovan, Tolbert, and Gracey 2016), and encourage higher levels of community involvement and communication from candidates (Dowling et al. 2024; Bowler, Brockington, and Donovan 2003). These factors would then lead to the direct reasons as to why voter turnout would be higher in RCV systems. Per Blais, Proportional Representation (PR) systems have higher turnout because it is a “fairer system, and because it is fair people feel less alienated and are thus more

inclined to vote,” and it “increases the number of parties and the variety of options among which people can choose” (Blais and Dobrzynska 1998, 245). RCV in single member districts, although majoritarian, can be altered to be consistent with implementations of PR such as multi-member district RCV, and has been claimed to have similarities in its effects of voter attitudes, as will be explained later (Drutman 2020). Considering these factors, therefore, even though there is no demonstrated overarching, transnational effect of electoral system choice on voter turnout, it is logical that studies would seek to further investigate the effects of RCV specifically.

So, does the implementation of Ranked Choice Voting increase voter turnout? While this question has been tackled in an array of previous studies (Donovan, Tolbert, and Gracey 2016; Dowling et al. 2024; Kimball and Anthony 2016), I have found inconsistent and inconclusive results throughout, with claims ranging from an approximate 5% increase in turnout (Bowler, Brockington, and Donovan 2003; 2001), 17% increase in turnout (Dowling et al. 2024), or no effect on turnout at all (Donovan, Tolbert, and Gracey 2016; Kimball and Anthony 2016). This thesis does not aim to question the validity of these results. Instead, I seek to further refine estimates of the causal effect of electoral system choice on voter turnout by combining a variety of analysis tools used by the aforementioned researchers and focusing on specific case studies while controlling a variety of variables.

### **Advocacy for RCV**

Ranked Choice Voting, while not the “dominant” electoral system, can be seen active throughout the United States in multiple ways. According to FairVote, “As of December 2024,

51 American jurisdictions have RCV in place for all voters in public elections, nearly 14 million voters. This includes 2 states, 3 counties, and 46 cities” (FairVote, n.d.). As we can see, the usage of RCV is mainly seen in cities or towns, local governments through which it is generally easier to obtain the referendum needed to pass such electoral reform.

Nowadays, organizations such as FairVote, The Ranked Choice Voting Resource Center, and Rank the Vote maintain these efforts, actively advocating for the transition towards Ranked Choice Voting across the United States (Amy 2002). Furthermore, we see the active endorsement and approval of RCV across the political and socio-economic spectrum, as we have seen Elizabeth Warren, Bernie Sanders and Andrew Yang support it, while “members of the US Congress have put forward legislation that would adopt ranked-choice voting nationally” (Simmons, Gutierrez, and Transue 2022, 366–67). Not to mention, RCV also has wide-spread popular support: “New York City, the largest city in the U.S., adopted RCV in 2020 following 74% of the electorate voting in support of adoption” (Simmons, Gutierrez, and Transue 2022, 367)

### **Why do we need more research on this question?**

Blais and Aarts (2005) sought to understand how and why PR systems foster turnout, as many have claimed throughout years of academic literature and reinforced by reform movements. The authors look at transnational studies, and find a variety of results depending on the size of the democracy, how many parties are at play, and even the continent of the country being studied (ie, it appears as though, per previous literature, PR increases voter turnout

everywhere but in Latin America). They write: “We conclude that the pattern observed in established democracies is not robust and that until we have developed a more compelling explanation for how and why PR fosters turnout, a sceptical position is justified”(Blais and Aarts 2006, 180). What does this mean for my research?

I am not looking at *why* RCV affects turnout, because I believe that there first needs to be an established baseline, *Does RCV affect voter turnout in the first place?* I have found inconclusive results at best, with only one study (Kimball and Anthony 2016) tackling this specific question, without looking at candidate behavior, how many times a voter was contacted, or other factors that most studies within this field focus upon. Many advocates of RCV view the system as a solution to many of the problems that affect politics in the United States. A global decline in voter turnout, increased bias in public policy, and the disenfranchisement of people of color has advocates seeking reform in any possible way (Kostelka and Blais 2021). Drutman writes: “But again: almost every measure of system support is at record or near record lows and reflects a decades-long decline. Americans are signaling their discontent repeatedly [and] widespread discontent at such high magnitude is a serious problem. A functioning democracy requires at least some reservoir of public trust” (Drutman 2020, 255). As a consequence, more research needs to be conducted on what we can and cannot expect to be addressed by the implementation of RCV.

## Theory and Hypothesis

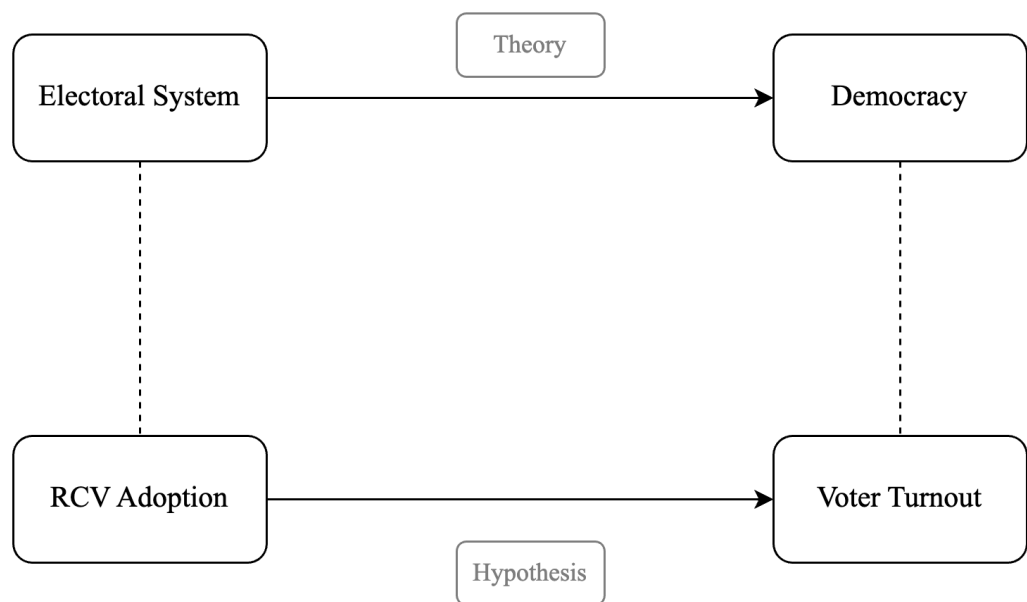
“The single most important political act for the average citizen is voting in elections” (Dowling et al. 2024, 1). Elections are widely perceived as the main (if not sole) way for citizens to be involved in politics and their democratic system, by choosing who represents them in a republic such as the United States. With this in mind, it can be said that elections directly affect democracy: how it works, how it is perceived, who participates, and how they participate.

So, how do electoral systems affect democracy? A democratic system is a government of the people, in which citizens often elect representatives to speak for all constituents under their jurisdiction. There are many ways in which citizens engage with their democracy, and electoral systems can guide those behaviors. This is because a government is often considered more or less “democratic” based on how effectively the wishes of the population are represented by those elected. For example, voter turnout, poll volunteers and town hall attendance are all ways in which people participate in their government, and more participation often means people have more power, thereby creating a “stronger” democracy. Consequently, if a system is considered to be “less” democratic (ie, corrupt elections, non-representative governments, lack of transparency), citizens are less likely to participate because they lose faith and trust in the system. It is imperative to upkeep trust in the government and the system, as it is the only way in which a democracy can continue to function.

If electoral systems are able to change who and how someone gets elected, they also change whether a voter feels represented by the result of such an election, and therefore whether

they are likely to participate or abstain. In essence: voting is the main method in which citizens interact with their democratic government, meaning that the apparatus by which they do so (the electoral system) will affect how “strong” they perceive their democracy to be, and consequently whether they participate in it or not. In this research, I am operationalizing the electoral system with the adoption of RCV and using voter turnout as a measure of democracy (Figure 1). I hypothesize that RCV adoption will result in increased average voter turnout.

**Figure 1**



Why would a change of electoral system lead to increased voter participation? From alternative formulas, to paper or electronic ballots, or whether someone has one or multiple representatives, variations in electoral systems have diverse effects on voting outcomes and voter perceptions. For example, citizens in a country that uses Proportional Representation (PR) are

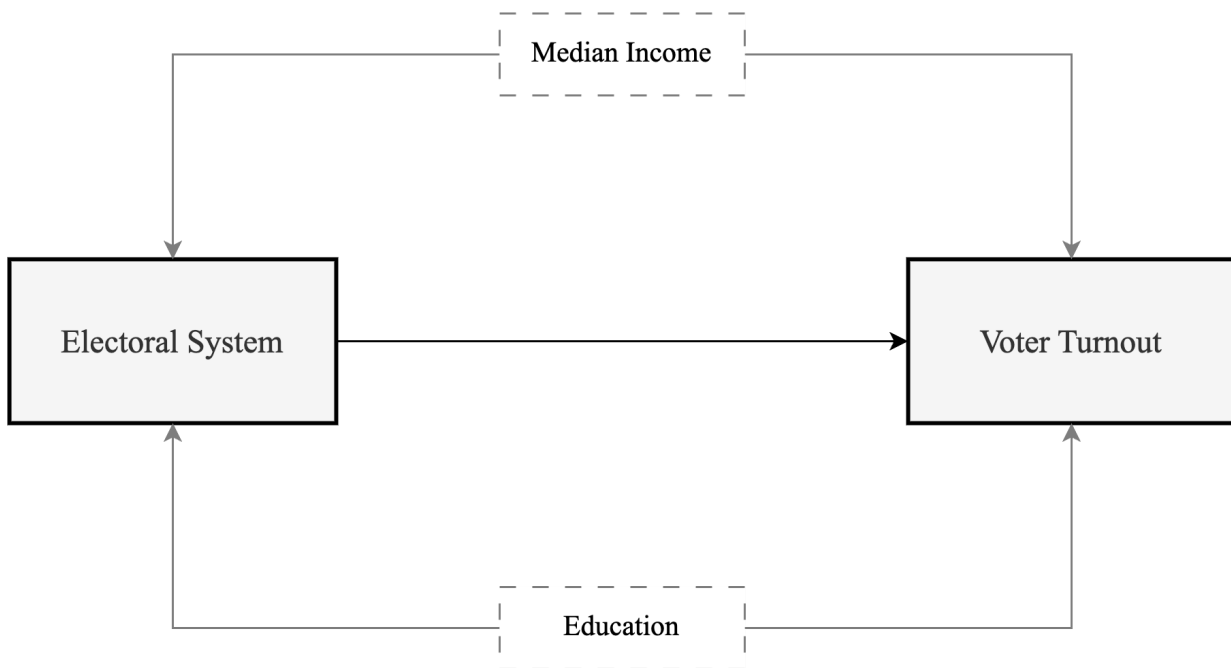
more likely to turnout to vote than those in majoritarian systems (Blais and Carty 1990). Some widely established reasons within the literature include higher sense of representation because of diversity of parties and multi-seat districts, and it makes sense: people are more likely to vote if they feel as though their vote will mean something.

As previously established, the majority of the United States uses SMP (a majoritarian system) as its electoral system, a decision made either locally or statewide depending on the state. Basing my theory on the demonstrated effect of PR in increasing voter turnout outside the United States, I turn towards alterations within majoritarian systems. I hypothesize that RCV would affect voter turnout because of its contrasts with the status quo that are similar to PR. For example, more parties and candidates can run under RCV, hypothetically increasing voter confidence in representation. However, it is important to note that RCV continues to be a majoritarian system, and in most places in which it is used, only one candidate holds the contested seat. This means that even though there might be more options on the ballot, a majority vote will be reached, and not all voters will be represented equally.

It is often hypothesized in the literature regarding the United States that the adoption of RCV will increase voter turnout; whether it is because of increased candidate outreach, “nicer” elections, or because people feel more represented. No matter through which specific cause, they mostly claim increased voter turnout as a consequence of the usage of RCV. This study seeks to challenge this claim, to conduct a study across the nation of comparable cities to determine whether RCV is indeed a factor that directly affects voter turnout.

Electoral systems, of course, are not the only factor that affect voter turnout. What about other variables that could affect voter turnout? It has been determined by decades of research and literature that factors such as income and education have a direct impact on whether citizens show up to vote (Figure 2). In fact, the higher the median income, and the higher the level of education, the more likely a citizen is to vote (Blais 2006; Bowler, Brockington, and Donovan 2001; Frank and Coma 2023).

**Figure 2**



Keeping all of this in mind, I am able to consolidate my null and alternative hypotheses as follows:

$H_0$ : The usage of Ranked Choice Voting has a statistically insignificant or no effect on average voter turnout in off-cycle mayoral elections in the United States.

$H_1$ : The usage of Ranked Choice Voting affects average voter turnout in off-cycle mayoral elections in the United States.

$H_0$ , or the null hypothesis, is an assumption of no change in the status quo, in which the usage of RCV does not have an effect on voter turnout in the cases indicated within my study.  $H_1$  (the alternative hypothesis), in contrast, presents a case in which RCV *does* have an effect on voter turnout. Note, however, that this *has no negative or positive connotation*. Meaning, this hypothesis presents the opportunity for RCV to affect turnout either positively or negatively. I find this to be the best neutral approach to this question, as I do not seek an explicitly positive effect on voter turnout, but rather, to figure out if there even *is* an effect. Furthermore, this style broadens the criteria by which we could find an effect, creating a more generous approach and interpretation of the effects of RCV.

## Research Design

RCV has been adopted at different levels, in different places, at different times across the United States. From state level to mayoral elections, we see RCV represented in a variety of ways and systems. Leveraging this diversity, I employ a difference in differences research design to determine whether RCV has an impact on voter turnout. Here I will discuss my identification strategy and data collection process for how I controlled for potentially confounding variables.

### **Differences in differences**

Traditional experimental research relies on the ability to input and manipulate independent and dependent variables, often in a controlled environment, allowing for researchers to observe causal connections. This also allows for random selection, which ensures that any changes can be attributed to the implemented variables. In contrast, Differences in Differences (DiD) is a statistical technique used in quantitative research that attempts to “mimic an experimental research design using observational study data, by studying the differential effect of a treatment on a 'treatment group' versus a 'control group' in a natural experiment” (Wikipedia 2025). DiD techniques account for differences in starting positions of observations, as I am comparing different outcomes (in voter turnout) with different starting positions post reform (electoral systems). With the nature of my study, I am unable to either create a controlled testing environment or a randomized test sample, as the observed subjects do not start from a “clean slate,” or the same situation, even if they utilize the same voting system. Every city is considered within two factors: whether they ever use RCV or not, and whether RCV is used in the

corresponding election, whether in the city itself or in its sibling city. So while all cities start by using SMP, the treatment cities eventually adopt RCV, a factor which is also accounted for in the control cities. As stated prior, this study does not allow for the creation of the “exact” same starting point, as cities differ naturally from each other based on population, demographics, geographic information, among others. Consequently, I use DiD as a tool to control for as many variables as possible that have been determined to affect voter turnout, and found cities that start in similar positions, to create comparable examples.

The main studies that have analysed the effects of RCV on voter turnout have used a DiD approach to identify “treatment” cities that switch from SMP to RCV and “control” cities that continue to use single-member plurality electoral systems (Dowling et al. 2024; Bowler, Brockington, and Donovan 2001; Kimball and Anthony 2016; Donovan, Tolbert, and Gracey 2016). These cities are matched via a set of criteria to eliminate possible confounding variables that have been previously established to affect voter turnout, such as education level, median household income, total population, demographic data, election cycle, and type of election. This method is further preferred as many cities that have adopted RCV do have a reputation of progressive politics, which is often linked to higher turnout rates (Kimball and Anthony 2016). By conducting an analysis through time, and looking at the contrast of the two groups of cities both before and after the treatment group’s adoption of RCV, one can conclude that any further increase in turnout is a consequence of the electoral system change.

## Data Collection

The primary selection criteria for the treatment group were based on three factors: 1) cities had to use RCV for mayoral elections; 2) have at least two cycles of RCV elections on record to account for any potential novelty effects; and 3) hold elections “off-cycle” to avoid turnout fluctuations caused by concurrent presidential contests.

To identify treatment cities, after narrowing the potential sample to nine, I conducted research on electoral data, including population statistics, voter turnout, and voter registration records. However, data accessibility constraints limited my collection efforts to only three RCV cities with publicly available electoral information. Consequently, I was limited to three cities to match with as corresponding controls. To identify control cities, I initially considered total population, median household income, and education levels to control for such variables. While some data required direct outreach to city or county offices, most were retrieved from state and local government databases.

Using RStudio, I compiled US Census data for 2000, 2010, and 2020 for total population, percentage of the population over the age of 25 years with a bachelor’s degree or higher, and median household income. I established a range of 5% variation for education level and \$5,000 variation for median income, and compiled lists of cities within this criteria. I then subset based on approximation of population total, allowing me to find the closest statistical match based on these variables. Finally, I ensured that the matching cities have the same electoral cycle (ie, off-cycle municipal elections or general midterm elections). This allowed for consistency in

expected turnout, as the year and month of an election can have an effect on turnout considering concurrent elections (or lack thereof). I utilized this data to ensure that the parameters established above are consistent throughout time and similar to those of their corresponding sibling city.

In the table below you can see the corresponding data of the RCV cities (marked in blue) in contrast to their “sibling” control cities (in white, directly below them).

Table 1

City-to-city analysis RCV-SMP						
RCV Cities Denoted In Blue						
Year	City	State	Income	Education	Population	Cycle
2000	St Paul	Minnesota	\$38,774	32%	287,151	Municipal, off cycle, Nov (2021)
2010	St Paul	Minnesota	\$45,439	37%	285,439	Municipal, off cycle, Nov (2021)
2020	St Paul	Minnesota	\$59,717	41%	311,527	Municipal, off cycle, Nov (2021)
2000	Cedar Rapids	Iowa	\$43,704	28%	120,563	Municipal, off cycle, Nov (2021)
2010	Cedar Rapids	Iowa	\$49,298	29%	125,450	Municipal, off cycle, Nov (2021)
2020	Cedar Rapids	Iowa	\$60,787	33%	137,710	Municipal, off cycle, Nov (2021)
2000	Minneapolis	Minnesota	\$37,974	37%	382,452	Municipal, off cycle, Nov (2021)
2010	Minneapolis	Minnesota	\$46,075	44%	383,280	Municipal, off cycle, Nov (2021)
2020	Minneapolis	Minnesota	\$66,068	52%	424,536	Municipal, off cycle, Nov (2021)
2000	Boston	Massachusetts	\$39,629	36%	589,141	Municipal, off cycle, Nov (2021)
2010	Boston	Massachusetts	\$50,584	42%	602,609	Municipal, off cycle, Nov (2021)
2020	Boston	Massachusetts	\$76,298	51%	675,647	Municipal, off cycle, Nov (2021)
2000	San Leandro	California	\$51,081	23%	79,452	General, Midterm, Nov (2022)
2010	San Leandro	California	\$62,609	27%	82,830	General, Midterm, Nov (2022)
2020	San Leandro	California	\$86,604	32%	90,489	General, Midterm, Nov (2022)
2000	Clifton	New Jersey	\$50,619	24%	78,672	General, Midterm, Nov (2022)
2010	Clifton	New Jersey	\$58,716	33%	82,776	General, Midterm, Nov (2022)
2020	Clifton	New Jersey	\$83,086	36%	90,296	General, Midterm, Nov (2022)

Source: US Census = 2000, 2010, 2020

My research began with obtaining a list of 49 “RCV locaties” from DeSilver et al. at the Pew Research Center, which provided a comprehensive rundown of cities using RCV by 2021. I

then cross-referenced this list with previous research and identified two consistently studied RCV cities: St. Paul, MN, and Minneapolis, MN (Kimball and Anthony 2016; Bowler, Brockington, and Donovan 2001; Donovan, Tolbert, and Gracey 2016; Dowling et al. 2024). Based on a list provided to me via email by DeSilver et al. and electoral data availability, San Leandro, CA, was also selected as part of the treatment group.

The next step involved identifying corresponding control (SMP) cities to serve as the control group. Given that St. Paul and Minneapolis are frequently used as case studies in the literature, I adopted their established match cities: Cedar Rapids, IA, and Boston, MA, respectively. To ensure these were appropriate matches for this study, I collected and compared data on key confounding variables, including population size, median household income, education level, electoral cycle, and data availability.

Finding a suitable match for San Leandro proved more challenging, as it had not been used by the “main” study that correlates to the question (Kimball and Anthony), but was used in other studies of RCV and turnout (Dowling et al. 2024; Bowler, Brockington, and Donovan 2001; Donovan, Tolbert, and Gracey 2016). However, by applying the same census data-driven matching process, Clifton, NJ, emerged as the best possible “equal” city, considering the inherent limitations of an observational study.

The final list of city pairings is the following: San Leandro, CA and Clifton, NJ; Minneapolis, MN and Boston, MA; and St Paul, MN and Cedar Rapids, IA (Table 1).

Once I was able to compile the best possible list of test and control cities, I began to gather electoral data. This included the voter-registered population (VRP) corresponding to the election at hand and number of votes cast for the mayoral election.

### *Why Voter-Registered Population (VRP)?*

Multiple factors led me to select VRP over other measures of voter participation, voting-age population (VAP) or voting-eligible population (VEP), which are more commonly used across electoral studies. VAP measures all possible voters that qualify based on age, but it does not filter out those not eligible to vote (ie, felons, non-citizens, etc.). Alternatively, VEP measures the voting-eligible population, which ensures that only those that can legally vote are counted. VRP, unlike either, strictly details how many people are registered to vote within a locality, county, or state. First, VRP provides the most accurate data of active voters: “One of the key advantages of using voter-registered and voting-eligible population turnout is that unlike voting age population turnout, they are unaffected by the rising influx of refugees and immigrants observed in some established democracies” (Kostelka and Blais 2021, 10). Furthermore, VRP is often the data point best recorded by government offices, which allows me to obtain city-level information, whereas VAP and VEP are often county or state wide. It is also relevant to note that leading projects that study voter turnout statistics utilize VRP as their preferred measure, including the US Elections Project from the University of Florida, and think tanks such as the Movement Advanced Project. Finally, it has been established in the literature that people registered to vote are most likely to become habitual voters, therefore most likely to vote in off-cycle elections, which all of my cases are (Sparacino 2022; Shino and Smith 2018).

### *Why the number of votes cast for mayor?*

Since this study specifically looks at mayoral elections, instead of going based on published turnout statistics or overall ballots cast, I strictly used the amount of ballots cast for the mayoral election. This allowed me to control for people that might not vote for mayor, invalid votes, or other discrepancies throughout the voting process.

### *Data Challenges*

Unfortunately, electoral data was hard to find, as it was largely inconsistent in its formatting, location and availability. I was able to find most data publicly via city and county websites. For example, I was unable to find the data for Clifton, NJ (either votes cast or VRP) anytime before 2014. In the cases of Boston and Clifton, consequently, I had to directly reach out to their corresponding electoral management offices to request their data. The city of Clifton was unable to find electoral records for their 2002 and 2006 mayoral elections, as they claim to have switched record keeping systems prior to the 2008 election season. Unfortunately, this does mean that I have uneven data for San Leandro-Clifton. However, considering that the records for 2010-2022 are available, I will be working on the assumption that the same voter trends continue before 2010.

## Analysis

The core data of this analysis identifies the ballots cast and VRP for a specific election, with the goal to compare it with other elections both within the city itself, and with its sibling city. Data was filtered by city pair, control versus treatment and voter turnout to obtain a variety of tables.

### *Defining the Variables*

To compare turnout, I utilized two dummy variables that allowed me to categorize elections based on the system established in a city in an observation. The variable “RCV” indicated whether cities had ever used RCV, denoting control vs treatment cities. The variable “before\_after” signals the time in which the election at hand took place, whether before RCV was established in the pair treatment city, or after. In the text explanations below, I will use “Before/After” to analyze this variable.

Below, you will see an in-depth explanation of what each variable combination means:

- A value of RCV=0 and before/after=0 means that that city is in the control group (because it has never used RCV), and the observed election was held before their sibling city established RCV.
- A value of RCV=1 and before/after=0 means that the city in the observation is in the treatment group, but has yet to establish RCV as their electoral system.

- A value of RCV=0 and before/after=1 means that the city is within the control group, yet the election observed is after the establishment of RCV in their sibling city.
- Lastly, a value of RCV=1 and before/after=1 is a city in the treatment group, with an observed election that actively uses RCV as its electoral system.

**Table 2**

<b>Mean Turnout by Before or After and RCV Variable</b>		
Comparison of Voter Turnout Before and After Implementation of RCV in Treatment and Control Cities		
Before/After	RCV Implemented	Mean Voter Turnout (%)
0 <sup>*</sup>	0 <sup>†</sup>	30.96
0 <sup>*</sup>	1 <sup>‡</sup>	38.69
1 <sup>§</sup>	0 <sup>†</sup>	31.65
1 <sup>§</sup>	1 <sup>‡</sup>	39.90

\* Before RCV was implemented.  
<sup>†</sup> Denotes control city.  
<sup>‡</sup> Denotes treatment city.  
<sup>§</sup> After RCV was implemented.

### Turnout “Gaps,” Before and After the Usage of RCV

Table 2 shows mean voter turnout in control and treatment cities before and after the usage of RCV. The two main results we see are consistent with the regression model below. First, treatment cities consistently have a higher average turnout than control cities, regardless of if they are actively using RCV or not, and this gap is 7.74%. Previous studies in this field also note

this consistency, mainly Kimball and Anthony in 2016. Second, after the establishment of RCV, there is no significant “widening of the gap,” meaning that it is not possible to state that RCV had a significantly relevant effect on voter turnout in our treatment cities.

### **Difference in Differences Regression Results**

The Differences in Differences regression formula is as follows:

$$Y = \beta_0 + \beta_1 \cdot \text{TreatedGroup} + \beta_2 \cdot \text{AfterTreatment} + \beta_3 \cdot \text{TreatedGroup} \cdot \text{AfterTreatment} + \epsilon$$

In a Differences in Differences model, there are two experimental groups, *Treatment* and *Control* that each have two levels, *Before* and *After*. We are consequently left with four categories in which an observation can fall into: *ControlBefore*, *ControlAfter*, *TreatmentBefore*, and *TreatmentAfter*. In the equation above, however, they are depicted as binary variables, 1 or 0, depending on *TreatmentGroup* (0 = Control, 1 = Treatment) and *AfterTreatment* (0 = Before Treatment, 1 = After Treatment). The way in which I think about it, is that if the variable (*TreatedGroup* or *AfterTreatment*) is 1, then that section of the equation is “activated,” otherwise, it is multiplied by 0 and not consequential.

Therefore, for example, an RCV city before treatment would lead to the equation looking like the following:

$$Y = \beta_0 + \beta_1 \cdot 1 + \beta_2 \cdot 0 + \beta_3 \cdot 1 \cdot 0 + \epsilon$$

We also see variables (depicted as “ $\beta$ ”), which informs how each prediction for Y varies given the category that a new observation falls into. More concretely,  $\beta_0$  predicts Y (voter turnout, in this case) for a control city before RCV was implemented in its sibling city.  $\beta_1$  is the percentage difference in voter turnout (Y) between control and treatment cities before the treatment is established.  $\beta_2$  represents the difference in the prediction of Y dependent on whether the observation is after treatment or not, regardless of whether the observation is in a control or treatment city. Finally,  $\beta_3$  is getting used when the observation strictly falls into the *TreatmentAfter* category.

Below, is a depiction of the formula as previously explained with the *TreatmentGroup* and *AfterTreatment* represented by its relevant variables in the data set at hand, those being RCV and before-after:

$$Y = \beta_0 + \beta_1 \cdot \text{RCV} + \beta_2 \cdot \text{Before-After} + \beta_3 \cdot \text{RCV} \cdot \text{Before-After} + \epsilon$$

**Table 3**

<b>Regression Results</b>				
Regression Results for Voter Turnout Comparison				
<b>Variable</b>	<b>Estimate</b>	<b>Std. Error</b>	<b>Statistic</b>	<b>P-Value</b>
Intercept	30.956	4.822	6.420	<0.001
Ranked Choice Voting	7.738	6.313	1.226	0.23
Before/After	0.697	5.906	0.118	0.907
RCV:Before/After	0.512	7.877	0.065	0.949

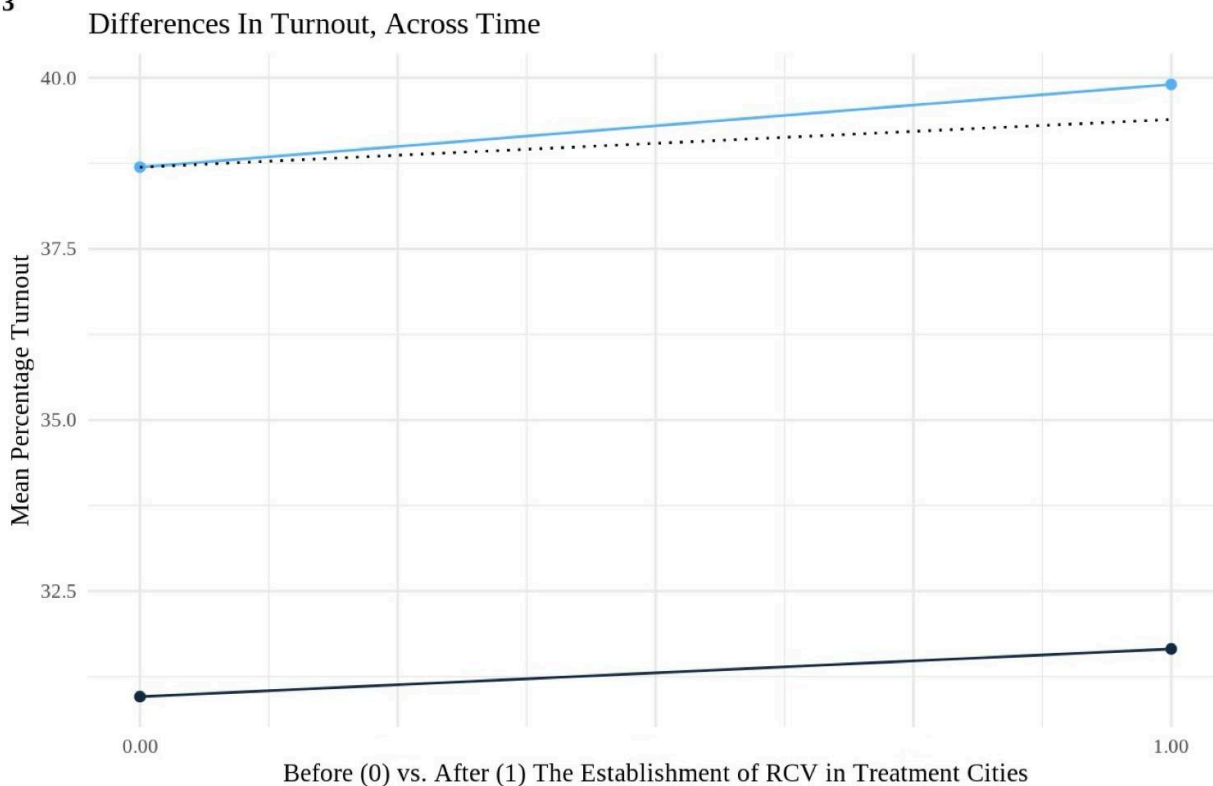
Data analysis using Difference-in-Differences (DiD) regression.

Table 3 above demonstrates the Differences in Differences regression. The intercept estimate (30.95) represents the mean turnout of our control cities prior to the adoption of RCV in their sibling cities. The RCV estimate (7.738) indicates the difference between this (control city mean turnout before the usage of RCV in the sibling city) and the mean turnout for treated cities before RCV. This result indicates that there is an inherent difference between the treatment and control cities: as previously pointed out, even before RCV is adopted, treatment cities have historically had a 7.7% higher mean voter turnout than the control cities.

Keeping in mind the previously explained formula for Differences in Differences, this formula represents the regression with the relevant numbers as determined by the regression results above:

$$Y = 30.9560 + 7.7383 \cdot \text{RCV} + 0.6970 \cdot \text{Before-After} + 0.5124 \cdot \text{RCV} \cdot \text{Before-After} + \epsilon$$

RCV:Before/After (before/after based on treatment vs control) denotes the coefficient of the regression, which is 0.512 (verified by manual and coded regression models). In simple terms, this result shows the percentage change in mean voter turnout from sibling cities before and after the treatment cities established RCV. Control cities had an average of 30.95% voter turnout before the usage of RCV in their sibling city, and treatment cities had an average voter turnout that was 7.74% higher than the control cities prior to their usage of RCV. The coefficient is denoting the further difference between the sibling cities after the establishment of RCV. Basically, how much more did the gap between control and treatment cities in voter turnout widen? As answered above, the “gap” only grew by a value of 0.512. The figure below details this “gap” in a visual representation:

**Figure 3**

In the above graph, we see the control cities in the black line, and the treatment cities in the blue. We can see that RCV cities consistently have a higher turnout than the control cities, and there is no significant change in trajectory over time. The line appears to increase at the same rate as the one representing the control cities, which denotes a natural increase in turnout throughout time. Meaning: turnout does not significantly increase in cities that establish RCV. The dotted line represents the hypothetical, in which RCV would not have been established in treatment cities, and as it can be seen, the difference is practically insignificant.

Noting this result, one can reach the preliminary conclusion that RCV cannot be determined to be the defining factor for a difference in turnout. Seeing as the p-value for this

variable is 0.95, the difference (0.51) cannot be determined to be significant. Because the p-value is so high, we fail to reject the null hypothesis that there is a difference in turnout caused when RCV is used at the population level. Another interpretation is that when RCV is implemented in the treatment cities (i.e., when RCV = 1 and before/after = 1), the difference in average predicted turnout between the treatment and control cities will be half a percent greater, meaning that the overall difference in predicted turnout is 8.25%. Regardless, this half a percent is not significant enough to solidly demonstrate a causal relationship between the usage of RCV and a change in voter turnout.

#### *Review of the Hypotheses and Final Analysis*

As a reminder:

$H_0$ : The usage of Ranked Choice Voting has a statistically insignificant or no effect on average voter turnout in off-cycle mayoral elections in the United States.

$H_1$ : The usage of Ranked Choice Voting affects average voter turnout in off-cycle mayoral elections in the United States.

While I am unable to conclude that RCV, **on average**, causes higher turnout, as the data does not demonstrate a significant enough difference, all variables held constant, it is *not* possible to make that argument for all cases. As we see above, turnout varies, and the difference between treatment and control cities appears to sometimes be affected by the implementation of RCV, while it sometimes is not. This indicates that while in the aggregate there is no significant

difference, I cannot make the statement that RCV *never* increases turnout. Future research should focus on other possible variables that I was unable to account for in detail. Furthermore, it is almost impossible to account for every single variable, so it is very possible that turnout is affected by an unquantifiable or unidentifiable variable, which I am not able to address in my undergraduate thesis.

## Discussion

Considering my above findings, how does my research fit into the wider conversation in this field? In current literature, there have been inconsistencies regarding the direct quantifiable effects of RCV on voter turnout, with results varying from no effect, to a 5% or 17% increase. However, one thing that is consistent are findings of correlated effects that can also be considered to affect a democracy. While voter turnout might not be affected, we do see an array of quantifiable effects on other factors that could also be operationalized as measures of democracy. Bowler, Brockington and Donovan study the effects of cumulative voting (CV) (which RCV is not) on voter turnout, by operationalizing it with PR. As explained in my theory section, PR is comparable to RCV in its effects for specific aspects. One of those, is the ability to have more choices, which RCV provides to single member districts similarly to how a proportional district would. They claim that CV provides a higher probability of the election of racial minorities and women in public office, an assertion argued to also be a benefit of RCV by Drutman (Bowler, Brockington, and Donovan 2003, 10; Drutman 2020, 217). Both the studies by Donovan et al. in 2016 study and Dowling et al. in 2024 study discuss candidate behavior and how it can be positively affected by the usage of RCV, from a constituent perspective. Donovan's research indicates that RCV allows for "cleaner" elections with less "mud-slinging," as candidates have less of an incentive to talk negatively about their opposition so as to not alienate their competition's voter base and aim to receive their second vote. While citizens in the RCV cities demonstrated higher satisfaction rates of how campaigns were run, the authors note that there was no identifiable effect on voter turnout (Donovan, Tolbert, and Gracey 2016, 159–60).

Concurrently, Dowling et al. claim that “individuals living in RCV jurisdictions were on average 17 percent more likely to vote in the 2021 off-year elections than those in non-RCV jurisdictions, all else equal” (Dowling et al. 2024, 5). The authors attribute this increase in voter turnout to increased voter contact, as people living in RCV cities are 8% more likely to be contacted in person, 3% more likely by paper mail, and 5.4% more likely over email by candidates (Dowling et al. 2024, 6). Dowling et al., Bowler et al., and Donovan et al. all also agree that candidates are more likely to engage in active community participation, including canvassing efforts (Dowling et al. 2024; Bowler, Brockington, and Donovan 2003; Donovan, Tolbert, and Gracey 2016). It is important to note, that while not all of these studies directly demonstrate an increase in voter turnout, they all demonstrate that RCV has an effect on alternative measurements of democracy, whether it be citizen engagement or friendly campaigns.

A compelling example of these assertions in practice is Zohran Kwame Mamdani’s victory in the New York City Democratic mayoral primary held on June 24, 2025. New York City held its first mayoral RCV election in 2021, which is why it did not fit the selection criteria for my study (Rank The Vote NYC, n.d.). Mamdani launched his campaign in October 2024 on a democratic socialist platform, advocating for fast and free buses, universal childcare, a rent freeze, city-owned grocery stores, and a 2% tax increase on the top 1%, among other policies (Fahy and McFadden 2025). Initially, Mamdani was not expected to win the Democratic primary: Andrew Cuomo was. As of February 2025, Mamdani was polling at just 1% (Emerson College 2025). Even as late as May 14, 2025, Cuomo held a lead of over 20 points, and most observers assumed he would secure the nomination (MaristPoll 2025; Kramer 2025). In contrast

to Cuomo, a former Governor with widespread name recognition, Mamdani faced multiple perceived disadvantages: he is an immigrant from Uganda, an outspoken democratic socialist, and was running in a competitive primary election (which historically have low turnout, as presented earlier).

As Bowler, Brockington, and Donovan, along with Drutman, argue, minority candidates are more likely to run and win in RCV elections. Mamdani also built a massive grassroots operation, recruiting a team of over 50,000 volunteers who knocked on more than 1.5 million doors, a strategy that has been credited with significantly increasing his chances of winning (Levine 2025). This aligns with the findings of Dowling et al. (2024), Bowler, Brockington, and Donovan (2003), and Donovan, Tolbert, and Gracey (2016), who highlight the importance of voter contact and community engagement in RCV systems.

Additionally, Mamdani cross-endorsed another candidate in the race, Brad Lander. He encouraged voters to rank him first and Lander second, and advised them not to rank Cuomo at all (Fitzsimmons 2025). The two candidates gave joint interviews, spoke positively about one another, and promoted ranking as many candidates as possible. Their collaboration reflects the kind of “clean” campaigning behavior that Donovan (2016) identifies as a common feature of RCV elections. While I cannot directly attribute Mamdani’s win to the use of RCV, this election demonstrates several of the potential benefits outlined by researchers and advocates of the system.

Keeping this in mind, should reformers continue to push for the establishment of Ranked Choice Voting? My answer is that it depends on the objectives of reformers and the specific locale in question. If the aim is to directly and definitively increase voter turnout, I would not encourage RCV as the best solution. However, if the goal of the advocates isn't directly increasing turnout, but instead, increasing citizen participation (such as canvassing efforts or volunteering to work in the polls), or creating nicer elections, then RCV might be a good alternative. Reformers should also keep in mind the possible negatives of the implementation of this system, such as the disenfranchisement of people of color, as some see in the case of Minneapolis (Kimball and Anthony 2016). Minneapolis, specifically, is divided in wards which are claimed to be demarcated based on race and socioeconomic status by Jacobs and Miller. Their findings were that “voters who were more affluent and white turned out at a higher rate, completed their ballots more accurately, and were more likely to use all three opportunities to rank their most preferred candidates compared to voters living in low-income neighborhoods and in communities of color” (Jacobs and Miller 2014, 1). However, Kimball and Anthony counter that the levels of disproportional voter participation between higher and lower income wards were also seen in SMP elections in Minneapolis, so RCV is not necessarily a determinant factor of this inequality (Kimball and Anthony 2016, 21). Furthermore, Lee Drutman, in his book *Breaking The Two-Party Doom Loop* writes “in Minneapolis, Minnesota, which has now used ranked-choice voting for three consecutive citywide elections, 92 percent of residents said they found ranked-choice voting to be ‘simple.’” (Drutman 2020, 181). All in all, while RCV might not have been the specific cause for this gap in valid votes or votes cast, it is important to be aware of such disparities and encourage the education of voters on RCV. Reformers should also

keep in mind that electoral reform takes time, effort and resources, which could be better spent on advocating for other systems or encouraging voter engagement.

A better solution that has been concretely proven to increase voter turnout, however, is a Proportional Representation system. As stated in the Literature Review and Theory sections, voters have been demonstrated to be more likely to vote in an election in which they feel represented, with a diversity in party choice and multi-seat districts (Blais and Dobrzynska 1998; Amy 2002). In his book *Real Choices, New Voices*, Amy claims that the usage of PR elections could “reinvigorate American elections,” and writes: “It would not only make elections fairer and more exciting, it would also encourage more citizen participation, broaden political debate, and make government more representative and accountable to the public” (Amy 2002, 13). I will note that most research of PR has been in comparative politics, and more studies should be conducted on the effects of the usage of PR in the United States specifically, although it will face limitations as the “true” implementation of PR requires system-wide reform. Drutman advocates for this system wide-reform both for single-member and multi-member ranked choice voting, describing the latter as a PR system. Not only does he promote an increase in the size of Congress (from 435 to 700), but centrally, he encourages the creation of more political parties, with any from four to six being in the “perfect range” (Drutman 2020). While I have not seen an increase in third or fourth party representation in mayoral elections, they seem to have taken a different approach: nonpartisan elections. In fact, most of the cities with RCV that I have looked at historically hold nonpartisan mayoral or council elections (although it is to note that both Minneapolis and St Paul run partisan elections, but the top candidates are consistently either

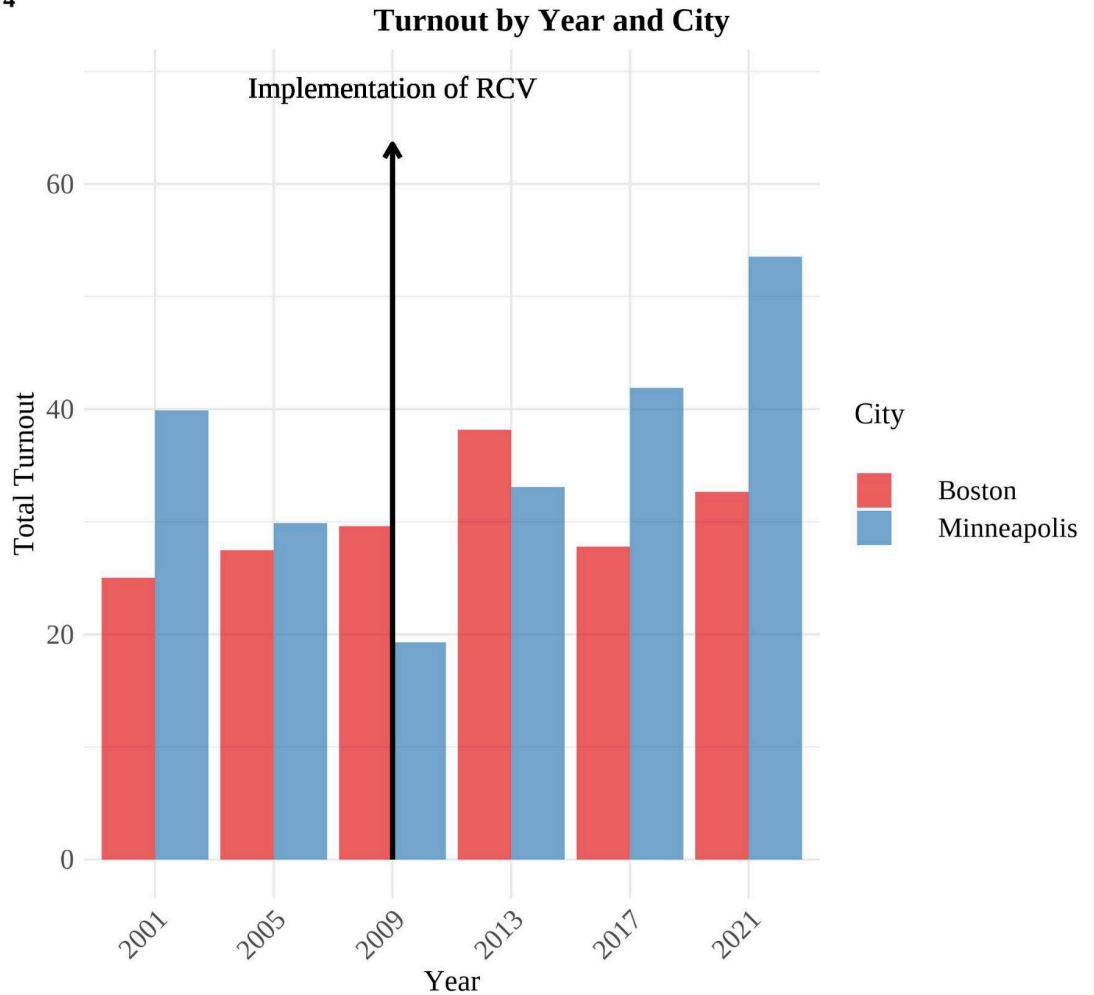
Democrats or Independent). Drutman advocates mainly for federal election reform in the House of Representatives (multi-winner RCV), the Senate (single-winner RCV) and the Presidential race (single-winner RCV), but these would all require massive electoral reform, and possible constitutional amendments. States, however, have their own power, and are already taking the lead: “States can be the innovators and incubators of electoral reform”(Drutman 2020, 202). We can see localities becoming these “innovators and incubators,” with the number of RCV cities increasing every year. Reform is not easy, as we have seen over and over again, both historically and in the literature. However, as Drutman explains, when distrust in the system is at its highest, it is the ripest for reform, and I believe that is now (Drutman 2020, 239).

### Conclusion

Unfortunately, there is currently not enough research about the relationship between RCV and voter turnout, especially how and why turnout might be affected. Future research should focus more on case studies, in which they can dive in depth about the effects (or lack thereof) of RCV. These studies should account for local variables, as results can vary city by city, as we see by the fact that while my results find no direct effect on turnout in the aggregate, it cannot be definitively said that there is no effect on a case-by-case basis. In fact, there is some evidence that RCV adoption may have increased turnout in some cities.

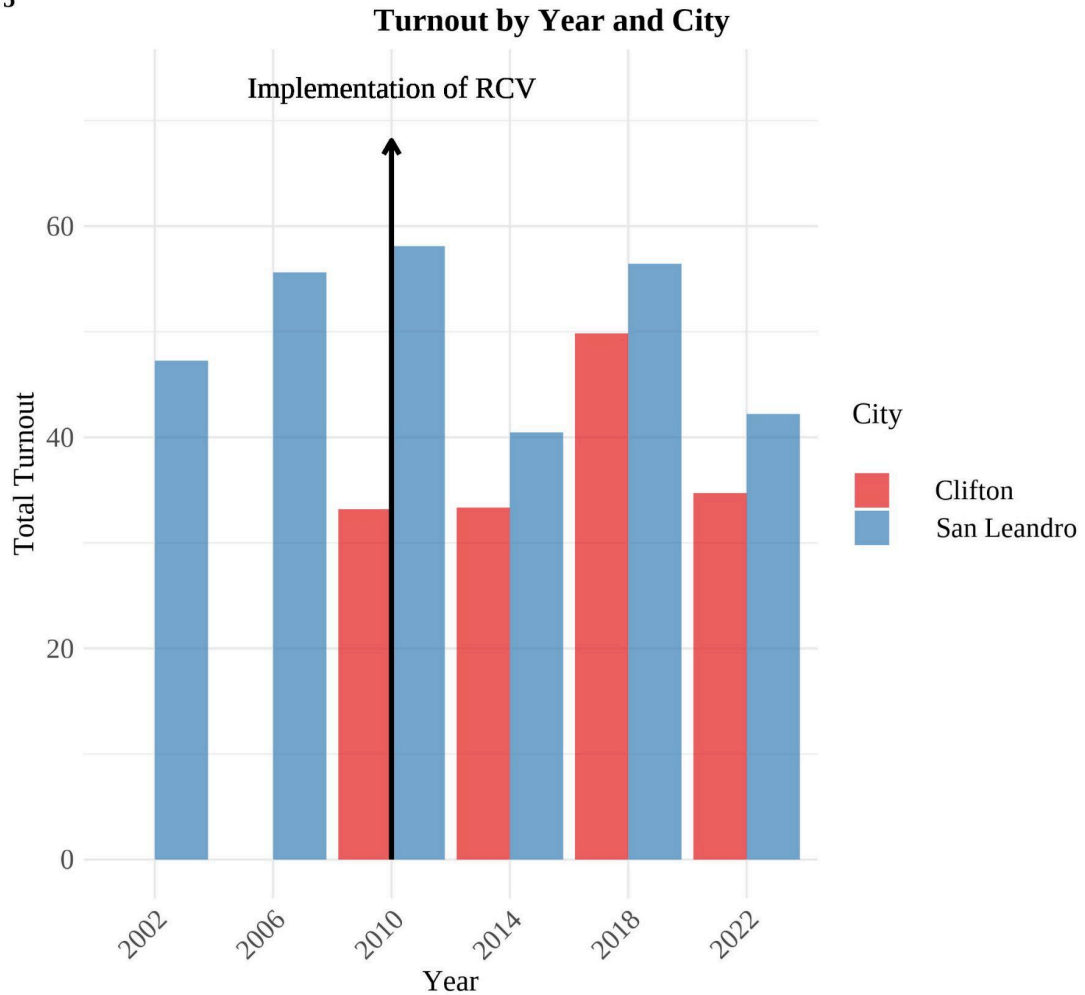
In all of the bar charts below, control cities are noted in red, and treatment cities are noted in blue. The pairings are those studied throughout this study: Boston, MA and Minneapolis, MN; Clifton, NJ and San Leandro, CA; and Cedar Rapids, IA and St Paul MN. The year in which RCV was implemented is also indicated in the visuals, those being 2009, 2010, and 2013 correspondingly.

Figure 4



The bar chart above documents voter turnout 2001-2021 in Boston, MA (red) and Minneapolis, MN (blue) in mayoral elections. We observe an assorted voter turnout pattern, in which there is no clear increase in voter turnout after the establishment of RCV in Minneapolis, the treatment city.

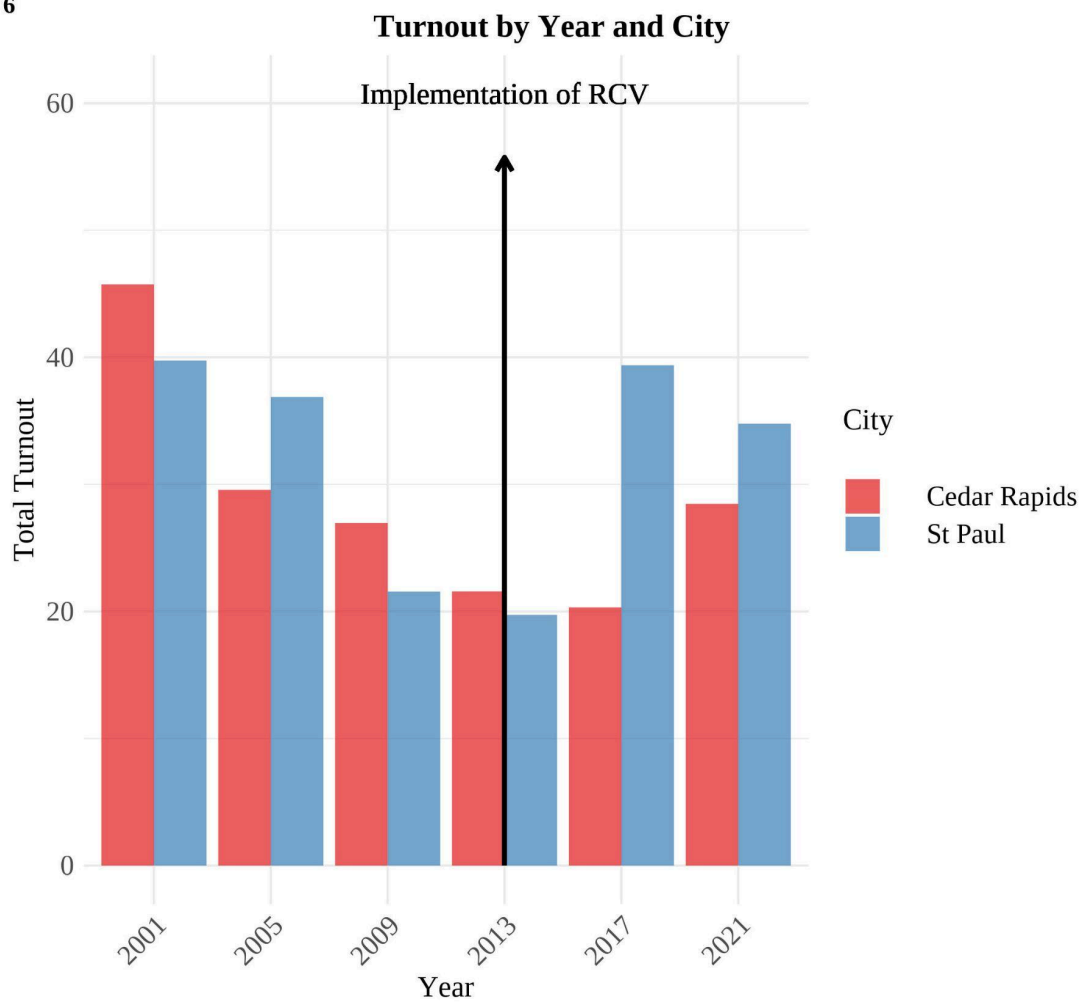
Figure 5



The bar chart above documents voter turnout 2002-2022 in Clifton, NJ (red) and San Leandro, CA (blue) in mayoral elections. Note that the voter turnout data for Clifton before the usage of RCV in San Leandro was not available, which is why those bars are not in the above visual. However, we can consistently see San Leandro having higher turnout than Clifton.

Unfortunately, I am not able to determine whether this is a consequence of the usage of RCV or simply, that, as stated prior, treatment cities historically have a higher turnout than control cities.

Figure 6



Finally, the bar chart above documents voter turnout 2001-2021 in Cedar Rapids, IA (red) and St Paul, MN (blue) in mayoral elections. Similarly to Boston and Minneapolis, we observe

an assorted voter turnout pattern, in which the gap between the cities appears to switch depending on the election at hand.

The aim of this study was to determine if Ranked Choice Voting has an effect on voter turnout in mayoral elections within the United States. Results of previous research were inconsistent, varying from no effect, to 5% increase in turnout, to a 17% increase. My results demonstrated that in the aggregate there is no causal effect of RCV on turnout.

However, as stated previously, it is not possible to determine that there is *no* effect on a case-by-case basis. Turnout might not be affected, that does not mean that other measures of democracy will not, such as voter engagement or candidate outreach, factors which were expanded upon in the discussion section.

Further research should look at a variety of elections. As stated previously, while 47 cities use RCV, so do two states and three counties, a number that continues to increase every electoral cycle. This study also did not include approximately 20 cities in Utah, all which use RCV, but where adoption was as recent as 2021, therefore not fitting my selection criteria. Continuing research could account for more confounding variables, including partisanship, gerrymandering, voting access and more.

In theory, RCV should affect voter turnout because of the reasons previously stated, yet my results render me unable to reach a definitive conclusion. Keeping this in mind, future

research should also focus on causality: given the inconsistent results, under what conditions does RCV affect voter turnout?

### Bibliography

- U.S. Census Bureau, "Profile of Selected Social Characteristics: 2000," 2000. *Decennial Census, DEC Summary File 4 Demographic Profile, Table DP2*, 2000, accessed on January 2, 2025,  
[https://data.census.gov/table/DECENNIALDPSF42000.DP2?q=DP2&g=010XX00US\\$1600000&y=2000](https://data.census.gov/table/DECENNIALDPSF42000.DP2?q=DP2&g=010XX00US$1600000&y=2000).
- U.S. Census Bureau, "SELECTED SOCIAL CHARACTERISTICS IN THE UNITED STATES," 2010. *American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP02*, 2010, accessed on January 2, 2025,  
[https://data.census.gov/table/ACSDP5Y2010.DP02?q=DP02&g=010XX00US\\$1600000&y=2010](https://data.census.gov/table/ACSDP5Y2010.DP02?q=DP02&g=010XX00US$1600000&y=2010).
- U.S. Census Bureau, "SELECTED SOCIAL CHARACTERISTICS IN THE UNITED STATES," 2020. *American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP02*, 2020, accessed on January 2, 2025,  
[https://data.census.gov/table/ACSDP5Y2020.DP02?q=DP02&g=010XX00US\\$1600000&y=2020](https://data.census.gov/table/ACSDP5Y2020.DP02?q=DP02&g=010XX00US$1600000&y=2020).
- U.S. Census Bureau, "Profile of Selected Economic Characteristics: 2000," 2000. *Decennial Census, DEC Summary File 4 Demographic Profile, Table DP3*, 2000, accessed on January 2, 2025,  
[https://data.census.gov/table/DECENNIALDPSF42000.DP3?q=DP3:+SELECTED+ECONOMIC+CHARACTERISTICS&g=010XX00US,\\$1600000&y=2000](https://data.census.gov/table/DECENNIALDPSF42000.DP3?q=DP3:+SELECTED+ECONOMIC+CHARACTERISTICS&g=010XX00US,$1600000&y=2000).
- U.S. Census Bureau, "SELECTED ECONOMIC CHARACTERISTICS," 2010. *American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP03*, 2010, accessed on January 2, 2025,  
[https://data.census.gov/table/ACSDP5Y2010.DP03?q=DP03&g=010XX00US,\\$1600000&y=2010](https://data.census.gov/table/ACSDP5Y2010.DP03?q=DP03&g=010XX00US,$1600000&y=2010).
- U.S. Census Bureau, "SELECTED ECONOMIC CHARACTERISTICS," 2020. *American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP03*, 2020, accessed on January 2, 2025,  
[https://data.census.gov/table/ACSDP5Y2020.DP03?q=DP03&g=010XX00US,\\$1600000&y=2020](https://data.census.gov/table/ACSDP5Y2020.DP03?q=DP03&g=010XX00US,$1600000&y=2020).
- U.S. Census Bureau, "Profile of General Demographic Characteristics: 2000," 2000. *Decennial Census, DEC Summary File 4 Demographic Profile, Table DP1*, 2000, accessed on January 2, 2025,  
[https://data.census.gov/table/DECENNIALDPSF42000.DP1?q=dp1&g=010XX00US\\$1600000&y=2000](https://data.census.gov/table/DECENNIALDPSF42000.DP1?q=dp1&g=010XX00US$1600000&y=2000).

- U.S. Census Bureau, "SEX BY AGE," 2010. American Community Survey, ACS 5-Year Estimates Detailed Tables, Table B01001, 2010, accessed on January 2, 2025, [https://data.census.gov/table/ACS5Y2010.B01001?q=b01001&g=010XX00US\\$160000&y=2010](https://data.census.gov/table/ACS5Y2010.B01001?q=b01001&g=010XX00US$160000&y=2010).
- U.S. Census Bureau, "SEX BY AGE," 2020. American Community Survey, ACS 5-Year Estimates Detailed Tables, Table B01001, 2020, accessed on January 2, 2025, [https://data.census.gov/table/ACS5Y2020.B01001?q=b01001&g=010XX00US\\$160000&y=2020](https://data.census.gov/table/ACS5Y2020.B01001?q=b01001&g=010XX00US$160000&y=2020).
- Amy, Douglas J. 2002. *Real Choices/New Voices: How Proportional Representation Elections Could Revitalize American Democracy*. 2nd ed. New York: Columbia University Press.
- Blais, André. 2006. "WHAT AFFECTS VOTER TURNOUT?" *Annual Review of Political Science* 9 (1): 111–25. <https://doi.org/10.1146/annurev.polisci.9.070204.105121>.
- Blais, André, and Kees Aarts. 2006. "Electoral Systems and Turnout." *Acta Politica* 41 (2): 180–96. <https://doi.org/10.1057/palgrave.ap.5500148>.
- Blais, André, and R. K. Carty. 1990. "Does Proportional Representation Foster Voter Turnout?" *European Journal of Political Research* 18 (2): 167–81. <https://doi.org/10.1111/j.1475-6765.1990.tb00227.x>.
- Blais, André, and Agnieszka Dobrzynska. 1998. "Turnout in Electoral Democracies." *European Journal of Political Research* 33 (2): 239–61. <https://doi.org/10.1111/1475-6765.00382>.
- Bowler, Shaun, David Brockington, and Todd Donovan. 2001. "Election Systems and Voter Turnout: Experiments in the United States." *The Journal of Politics* 63 (3): 902–15.
- . 2003. *Electoral Reform and Minority Representation: Local Experiments with Alternative Elections*. Columbus: Ohio State University Press.
- Colomer, Josep M. 2005. "It's Parties That Choose Electoral Systems (Or, Duverger's Laws Upside Down)." *Political Studies* 53 (1): 1–21. <https://doi.org/10.1111/j.1467-9248.2005.00514.x>.
- Donovan, Todd, Caroline Tolbert, and Kellen Gracey. 2016. "Campaign Civility under Preferential and Plurality Voting." *Electoral Studies* 42 (June):157–63. <https://doi.org/10.1016/j.electstud.2016.02.009>.
- Dowling, E., C. Tolbert, N. Micatka, and T. Donovan. 2024. "Does Ranked Choice Voting Increase Voter Turnout and Mobilization?" *Electoral Studies* 90 (August):102816. <https://doi.org/10.1016/j.electstud.2024.102816>.
- Drutman, Lee. 2020. *Breaking the Two-Party Doom Loop: The Case for Multiparty Democracy in America*. New York: Oxford University Press.
- Emerson College. 2025. "New York City Mayoral Poll: Cuomo Leads Primary, Adams Faces Low Support Amid High Unfavorability." *Emerson College Polling*, February 7, 2025. <https://emersoncollegepolling.com/new-york-city-mayoral-poll-cuomo-leads-primary-adams-faces-low-support-amid-high-unfavorability/>.
- Fahy, Claire, and Alyce McFadden. 2025. "A Look at Zohran Mamdani's Stances on Key Issues." *New York Times*, June 25, 2025. <https://www.nytimes.com/2025/06/25/nyregion/mamdani-policies-stances.html>.

- FairVote. n.d. “Where Is Ranked Choice Voting Used?”  
<https://fairvote.org/where-is-ranked-choice-voting-used/>.
- Fitzsimmons, Emma G. 2025. “Mamdani and Lander Cross-Endorse Each Other in N.Y.C. Mayor’s Race.” *New York Times*, June 13, 2025.  
<https://www.nytimes.com/2025/06/13/nyregion/mamdani-lander-endorsement-nyc-mayor.html>.
- Frank, Richard W., and Ferran Coma. 2023. “Correlates of Voter Turnout.” *Political Behavior* 45 (2): 607–33. <https://doi.org/10.1007/s11109-021-09720-y>.
- Jacobs, Lawrence, and Joanne Miller. 2014. “Rank Choice Voting and the 2013 Minneapolis Elections,” February. <https://hdl.handle.net/11299/195063>.
- Kimball, David, and Joseph Anthony. 2016. “Voter Participation with Ranked Choice Voting in the United States.”
- Kostelka, Filip, and André Blais. 2021. “The Generational and Institutional Sources of the Global Decline in Voter Turnout.” *World Politics* 73 (4): 629–67.  
<https://doi.org/10.1017/S0043887121000149>.
- Kramer, Marcia. 2025. “Andrew Cuomo Has Big Lead in New NYC Democratic Mayoral Primary Poll. Why Zohran Mamdani Still Thinks He Has a Chance.” *CBS News New York*, May 14, 2025.  
<https://www.cbsnews.com/newyork/news/nyc-democratic-mayoral-primary-marist-poll-andrew-cuomo-zohran-mamdani/>.
- Levine, Judith. 2025. “Here’s What the Democrats Can Learn from Zohran Mamdani.” *The Guardian*, July 1, 2025.  
<https://www.theguardian.com/commentisfree/2025/jul/01/democrats-zohran-mamdani>.
- MaristPoll. 2025. “NYC Mayor’s Race, May 2025.” *MaristPoll*, May 14, 2025.  
<https://maristpoll.marist.edu/polls/nyc-mayors-race-may-2025/>.
- Rank The Vote NYC. n.d. “History of RCV in NYC.”  
<https://rankthevoteny.org/history-of-rcv-in-nyc/>.
- Shino, Enrijeta, and Daniel A. Smith. 2018. “Timing the Habit: Voter Registration and Turnout.” *Electoral Studies* 51 (February):72–82. <https://doi.org/10.1016/j.electstud.2017.10.005>.
- Simmons, Alan James, Manuel Gutierrez, and John E. Transue. 2022. “Ranked-Choice Voting and the Potential for Improved Electoral Performance of Third-Party Candidates in America.” *American Politics Research* 50 (3): 366–78.  
<https://doi.org/10.1177/1532673X211072388>.
- Sparacino, Daniel. 2022. “Voter Registration, Turnout, and Habitual Voting Theory: The Case for Schools as Mandatory Registration Locations Notes.” *Washington University Journal of Law & Policy* 68:273–302.
- Wikipedia. 2025. “Difference in Differences.” In *Wikipedia*.  
[https://en.wikipedia.org/w/index.php?title=Difference\\_in\\_differences&oldid=1270862180](https://en.wikipedia.org/w/index.php?title=Difference_in_differences&oldid=1270862180).