Vote to Give: Evaluating Voting Rules Using Consequential Elections

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Abstract

Despite growing interest in replacing plurality rule in general elections, there is limited causal evidence regarding the effects of alternative voting rules. This study employs a field experiment in which voting competitions between charities serve as proxies for political elections to estimate the impact of different voting rules on important voter behavior such as participation and strategic voting. Data from the contests indicate that voters in elections using single-winner ranked choice voting (RCV) are up to 11 percentage points more likely to participate in subsequent elections. This increase is not uniform and depends crucially on the composition of candidates in elections. Further analysis reveals that these differences arise not from novelty or expressiveness in voting rules but from variations in how winners are aggregated across elections.

1   Introduction

> Dylan Lloyd, 27, who served in the U.S. military and lives in Pennsylvania, said he planned to support Mr. Trump because of his approach to the economy, but that the potential rematch felt like picking "between the lesser of two evils, like you're forced to be on one extreme or another."
>
> New York Times, Jan 5, 2024[1]

There is a substantial interest in replacing plurality, the most commonly voting rule used in U.S. elections, with an alternative voting rule. This is due to issues like the high cost of runoff elections and rising political polarization. Plurality voting often leads to costly runoff elections because it fails to guarantee a majority winner, prompting the use of additional rounds to guarantee the winner receives majority support. Additionally, it fuels polarization by discouraging support for moderate candidates. Voters, aiming to avoid their worst outcome, often feel compelled to back one of the two leading, more polarized candidates rather than their preferred moderate, which deepens political divides (Foley and Maskin, 2024).

Instant-runoff voting, commonly referred to as Ranked Choice Voting (RCV), is the fastest-growing alternative to plurality and is viewed by some as a promising approach to mitigate these issues. Over 50 jurisdictions in the U.S. currently implement RCV in public elections including the state of Maine as well as major cities like New York City, Washington, D.C., and San Francisco. Despite RCV's growing adoption, it faces resistance from critics who argue that its ballots are overly complex and challenging for many voters to navigate. In November 2024, Alaska voted to repeal its use of RCV, showing that not all voters are satisfied with this system.

These developments raise the question of how voting rules should be evaluated. Traditionally economists have evaluated voting rules using the axiomatic approach (Arrow, 1950). Given the seminal findings of the mentioned paper, however, researchers struggle to reach a consensus on which axioms are necessary. Additionally, this approach often overlooks the unique realities of voting behavior, which frequently defies standard rational choice theory. As a result, an axiomatic

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[1] Available at https://www.nytimes.com/2024/01/05/us/politics/young-voters-biden-trump-2024.html. See (Huynh, 2024) for full citation.

framework may fail to capture the true performance of a voting rule in practical contexts, where factors such as voter behavior, ease of understanding, and administrative feasibility are critical. This suggests that evaluating voting rules through their impact on actual voter behavior is a necessary component of understanding their real-world effectiveness.[2] For example, voter participation is particularly relevant, as voting rules can only satisfy axioms for those who actually vote, underscoring the need to avoid rules that inadvertently discourage certain groups from participating.[3]

This paper investigates the effects of implementing ranked-choice voting on voter turnout. Despite its relevance, evaluating voting rules empirically is extremely difficult, and there is limited causal evidence on the effects of implementing RCV. Existing research primarily relies on observational data from real elections or findings from survey and laboratory experiments. Studies have found mixed results (Juelich and Coll (2021), Shineman (2021), Graham-Squire and McCune (2023), Dowling et al. (2024), David Kimball (2016), Mcdaniel (2016), Cormack (2024), Simmons and Waterbury (2024)), and these findings can only be interpreted as correlational[4]. There is an extensive body of experimental work on the effects of voting rules on behaviors such as strategic voting (André Blais (2016), Palfrey (2017)). However, capturing an outcome like voter turnout in a laboratory setting is challenging, as participation within a lab may not generalize well to real-world electoral behavior, where voters respond to more complex and often unpredictable factors.

To address these limitations, this study employs a novel approach by using consequential field elections as proxies for real elections to evaluate the effects of voting rules on voter behavior. Consequential elections are defined here as those with real-world stakes, where outcomes carry tangible consequences. Given the focus on political elections, it is also critical that candidate preferences reflect political leanings and that voting behavior aligns with patterns observed in real political settings. In this regard, voting contests between charitable organizations serve as effective

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[2]It is important to note that these two approaches are complementary. Analyzing the theoretical guarantees provided by voting rules, together with insights into real-world behavior, offers a more comprehensive evaluation of voting systems.

[3]Low participation rates have been shown to produce an unbalanced electorate, resulting in the under representation of minority groups and ultimately distorting future policy outcomes. (Hajnal and Trounstine (2005), Luna (2014), Leighley and Nagler (2013)).

[4]Voting rules are rarely, if ever, quasi-randomly assigned. In the U.S. context, the adoption of ranked-choice voting (RCV) has consistently resulted from voter-led referendums. Furthermore, the introduction of RCV frequently coincides with campaigns aimed at boosting voter participation, as well as other changes that can influence turnout.

proxies for political elections. Charities function as single-issue political candidates, and the outcomes of these elections are consequential, with winning organizations receiving real financial awards.

These voting contests were promoted as a charity fundraising and awareness initiative, titled *Vote to Give*. Participants were invited to engage in a series of five charity voting contests held over a five-week period, with each contest awarding $500 to the winning charity. In each round, voters were randomly assigned to a contest using one of three different voting rules: plurality, RCV, and a placebo rule. The analysis examines the impact of these voting rules on the likelihood of voter participation in future elections, responses to binding donation outcomes, strategic behavior, and survey feedback.

While most research examines differences in how voting rules determine winners, another significant distinction between RCV and plurality lies in the ballot format. Under plurality, voters cast a single vote for one candidate, whereas RCV requires voters to rank candidates in order of preference on a ranked-choice ballot. Much of the advocacy directed toward voters surrounding RCV emphasizes its ability to allow voters to express a broader range of preferences across candidates. If RCV does have an effect on voter behavior, an important question is whether this impact arises from the aggregation mechanism itself or from the increased expressiveness of the ballot structure. To isolate these effects, a placebo voting rule is implemented that uses a ranked-choice ballot but aggregates preferences by counting only the number of first-choice votes each candidate receives.

Implementing these elections requires a structured three-step process. First, a calibration survey establishes a baseline for voter preferences across charities and political issues, providing essential data on how participants value different causes. Results from this survey provide evidence that preferences for charities align with participants' political preferences. The second step is a simulation process that uses preference data from the calibration survey to model the potential outcomes of all three-candidate combinations. This simulation phase allows for the identification of realistic election scenarios that capture voting dynamics like vote splitting and prevent predictable landslides. Finally, selection criteria derived from a stylized model of voting and simulations guide the choice of candidates for the charity voting contests, ensuring a representative and diverse range of preferences and voting contexts. This three-step methodology for structuring consequential

3

elections is adaptable to a broad range of research questions and candidate types beyond charitable organizations.

The results from the contests reveal that voters in RCV elections tend to return more frequently than those in plurality elections, especially in polarized elections. In this context, polarized elections are contests where candidate support is strongly linked to political preferences, with supporters of one candidate unlikely to support the other. For those participating in a polarized election, voters are 11 percentage points more likely to return to future elections compared to those in plurality elections. This effect appears to be entirely driven by differences in the aggregation rule, as participation rates in placebo elections closely mirror those observed in plurality elections. Given that the average return rate across all elections is 17.66%, the magnitude of this effect is quite large.

This study further investigates the mechanisms through which the aggregation rule of RCV influences voter participation. Analyzing voter behavior based on how they rank the eventual winner in each election reveals that voters who rank the winner as their second choice in RCV elections are significantly more likely to participate in future elections than those in placebo elections. This suggests that the impact of RCV on participation is primarily attributable to an increase in perceived pivotality, rather than to differences in election outcomes, intrinsic preferences for the voting rule, or its expressive capabilities.

While these findings indicate that RCV may increase voter participation, caution is warranted in generalizing these results. Notably, there are no observed differences in participation rates for elections featuring neutral candidates, charitable organizations that receive similar levels of support across political affiliations. Additionally, participants in this study tend to be more educated than the general U.S. voting population and may be more capable at utilizing RCV ballots. Consequently, these results should be interpreted as an upper bound of RCV's potential impact on participation within the framework of an efficacy trial, rather than as definitive evidence of RCV's effect across all electoral contexts. Voting is a complex phenomenon influenced by numerous factors, and this study seeks to control many of these variables to achieve internally valid results. This paper represents a foundational step in a broader research agenda aimed at understanding the effects of electoral institutions on outcomes and voter behavior.

In addition to providing the first causal estimate of RCV's impact on participation, this paper

4

makes a significant methodological contribution, introducing a new technique that opens new avenues for research on evaluating electoral systems. In addition to the previously mentioned studies that evaluate electoral systems using observational data and lab experiments, there is a substantial literature in computational social choice that seeks to simulate and model elections to predict electoral outcomes as well as evaluate electoral reform (Walter R Mebane Jr (2019), Baltz (2022), Luis Zuloaga-Rotta (2024)). Discussion in the conclusion identifies additional research questions where this approach could provide valuable insights.

This paper also complements the literature on get-out-the-vote field experiments (Arceneaux et al. (2012), Huber and Gerber (2016), John (2017), Gerber and Green (2017)) and provides evidence that the institutional design of electoral systems has a significant impact on participation. This paper's approach aligns with a broader paradigm that prioritizes changes to societal institutions and the fundamental rules governing decision-making, recognizing that these structural changes may have a more substantial impact on shaping individual choices than efforts directed at enhancing individual decision-making alone (Bowles, 2023).

The remainder of the paper proceeds as follows. The next section reviews existing theories of voter participation and introduces an extension on expressive models of voting. Section 3 summarizes the experimental design. Sections 4 present the results for the main experiment. Section 5 concludes.

2   Simple Model of Voting

Before outlining the experimental design, this section introduces a stylized model of voter participation to illustrate how voting rules may influence voter turnout. Foundational models of participation (Downs (1957); Riker and Ordeshook (1968)) address the "paradox of voting," seeking to explain why individuals choose to vote despite their single vote's limited impact on the election outcome. Expressive voting models (Geys, 2006) expand on this by proposing that individuals derive intrinsic satisfaction—such as a warm-glow effect—from the act of voting itself, framing voting as an expressive rather than purely instrumental act. However, these models face criticism for their flexibility, which can permit post hoc justifications and, in doing so, risk becoming tautological.

An alternative approach to modeling turnout is provided by group-based models, which posit that voters are motivated by group objectives (Levine and Palfrey (2007); Coate and Conlin (2004)). These models suggest that individuals align their voting behavior with the broader goals of their group, enhancing participation likelihood when their group holds significant influence over election outcomes. No models, however, attempt to address how varying voting rules might impact turnout beyond the aggregation of election winners. This paper extends expressive voting models by developing a framework that accounts for the ways in which ballot structure shapes the range of preferences that voters can express.

Consider a population of $N = \{1, ..., N\}$ individuals that are faced with the decision to participate or abstain in a single-winner election. Let $Z \subset \mathbb{R}_{++}$ represent a finite set of candidates with cardinality $m = |Z| \geq 3$. For each voter i, let $\succ_i$ denote their transitive and reflexive preference relation, where $\succ_i \subset Z \times Z \cup \{\emptyset\}$. Specifically, $(x, y) \in \succ_i$ if and only if voter i considers x to be at least as preferable as y. Thus, voter i prefers x over y if $(x, y) \in \succ_i$ but $(y, x) \notin \succ_i$, and is indifferent if $(x, y), (y, x) \in \succ_i$. Define $A_1, ..., A_k$ as equivalence classes of candidates within a voter's preference structure. Specifically, if x and y belong to the same equivalence class $(x, y), (y, x) \in \succ_i$. The preference profile of each voter is then represented by an ordered list of these sets of candidates, $\pi_i = (A_1, ..., A_k)$, which reflects the voter's ranked preference levels and Π_i is the set of all possible orderings.

A voter's utility from casting a ballot is shaped by two key components: the effect of their vote on the election outcome and the extent to which their vote aligns with their true preferences. Therefore, it is essential to distinguish between the role of votes in determining outcomes through the aggregation rule and their role in allowing preferences over candidates to be expressed.

Define $\mathcal{B}$ as the set of all possible ballots allowed under a given voting rule, which outlines the types of expressions permitted within that system. A voting rule, then, can be understood as a combination of the ballot voters use and the social choice function that maps a profile of ballots to a single outcome. Formally, let $f : \mathcal{B}^N \to Z$ represent the aggregation function that processes the ballots of all N voters and selects a winning candidate from the set of candidates Z. Additionally, ballots serve to convey a voter's preferences, where $v : \mathcal{B} \to \Pi_i$ is a mapping from ballots to preference profiles.

6

A key assumption is that ballots convey voter preferences, though each voting rule imposes its own restrictions on this expression. In systems like plurality and ranked-choice voting (RCV), ballot structures limit the range of preferences that voters can represent, effectively altering their choice set. To capture these limitations formally, ranking vectors are used to quantify the degree of preference differences among candidates.

Let $R_Z(\succ_i, z)$ denote the rank of candidate z according to voter i's preference $\succ_i$. This rank is calculated by counting the number of candidates that voter i prefers over z, with higher-ranked candidates receiving lower numerical values, as shown in (1). The full ranking vector for voter i across all candidates in Z is thus represented by an ordered list (2) that reflects each candidate's rank position according to voter i's preferences. Equation (3) represents the Manhattan distance between preference profiles.

$$R_Z(\pi_i, z) = 1 + |x \in Z : x \succ_i z|, \ \forall z \in Z \tag{1}$$

$$R_Z(\pi_i, Z) = (R_Z(\pi_i, 1), R_Z(\pi_i, 2), ..., R_Z(\pi_i, m)) \tag{2}$$

$$d(R_Z(\pi_i, Z), R_Z(\pi_i', Z)) = \sum_{k=1}^{m} |R_Z(\pi_i, k) - R_Z(\pi_i', k)| \tag{3}$$

For ease of reference, the ranking vector for preference profile π_i will be denoted as $R(\pi_i)$. Voter i obtains the following utility from submitting vote b_i:

$$U_i(b_i, \pi_i) = P\beta(b_i) + G - C - \lambda_i \frac{d(R(v(b_i)), R(\pi_i))}{d(R(v(b_i^*)), R(\pi_i))} \tag{4}$$

Here $\beta(b_i)$ represents the utility derived from influencing the outcome of the election with P being the probability that i is a pivotal voter, G denotes the "warm glow" or intrinsic satisfaction from the act of voting, and C reflects the cost associated with voting. These three terms in (1) reflect the classic model of standard voting as described by Riker and Ordeshook (1968). Since the focus of this model is the formalization of expressive voting, the last term captures this. Traditionally in the literature on voting, expressive voting is defined as voting to express their opinions and beliefs

and not just to influence the election outcome. This is typically relegated to part of the warm glow term (Brennan and Lomasky (1994); Hamlin and Jennings (2011)). This is modeled separately here.

Expressive utility refers to the benefit a voter gains from casting a vote that accurately reflects their true preferences among candidates. In this framework, expressiveness contributes to the utility function as a cost associated with voting strategically, represented by the final term in (4). The parameter λ_i captures the extent to which each voter values expressiveness, while the function $d : \mathbb{R}^m \times \mathbb{R}^m \to \mathbb{R}_+$ represents the distance between two preference profiles and their corresponding ranking vectors. The distance ratio $\frac{d(R(v(b_i)), R(\pi_i))}{d(R(v(b_i^*)), R(\pi_i))}$[5] measures the deviation of the submitted vote from the voter's true preferences, scaled as a fraction of the maximum possible deviation.

Assuming the probability of being pivotal is zero, an expressive voter will choose $b_i \in \mathcal{B}$ to minimize the distance between their submitted ballot and true preferences. This approach departs from classical predictions only for voters who derive utility from expressive voting. Specifically, if a voter assigns no weight to expressiveness (i.e., $\lambda_i = 0$), the model defaults to the standard voter participation framework.

2.1 Example

To develop intuition for the model, consider the difference between plurality and ranked-choice voting (RCV) in a simplified environment. Suppose an election includes a set of three candidates $Z = A, B, C$ and a population of N voters. Let $\succ_i$ represent voter i's preference relation over Z, with $\mathcal{P}_{\text{plurality}}$ denoting the set of preferences that can be expressed through a plurality ballot and $\mathcal{P}_{\text{RCV}}$ the set that can be expressed through an RCV ballot.

In this model, ballots serve as mechanisms for expressing preferences, with each voting rule imposing specific constraints on the range of preferences that can be communicated. The key

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[5]In the distance ratio , the denominator represents the maximum distance calculated over the set of all possible ballots. That is, $b_i^* \in \arg \max d(\pi_i)$. The max is defined by

$$d_{max} = \begin{cases} \sum_{i=1}^{\frac{m}{2}} 2x^2 & m \text{ even} \\ \sum_{i=1}^{\frac{m-1}{2}} 2x(x+1) & m \text{ odd} \end{cases}$$

where m is the number of candidates

assumption is the nature of these constraints. Under plurality voting, it is assumed that ballots restrict voters to expressing a strict preference for only one candidate, implicitly treating all other candidates as equally unpreferred. In contrast, RCV allows voters to rank candidates in strict order, but also permits truncation, where unranked candidates are treated with indifference.

Let $\mathcal{P}_Z$ be the set of all reflexive and transitive preference profiles over Z. Given these constraints, it follows that $\mathcal{P}_{\text{plurality}}, \mathcal{P}_{\text{RCV}} \subset \mathcal{P}_Z$, as both ballot types limit the set of preferences voters can represent. Importantly, because RCV ballots allow voters to submit only their top-ranked candidate, $\mathcal{P}_{\text{plurality}} \subset \mathcal{P}_{\text{RCV}}$.

Strict Preferences

Let voter i have a preference ordering over candidates in Z, such that $A \succ_i C \succ_i B$. In a plurality election, casting a vote for candidate A minimizes the distance ratio. In an RCV election, a vote ranking A as the 1st choice, C as the 2nd choice, and B as the 3rd choice accurately reflects the voter's full preference ordering. These ballots reflect the following preferences:

Plurality	RCV
$A \succ_i C \smallfrown_i B$	$A \succ_i C \succ_i B$

When voters hold strict preferences over candidates, RCV enables them to express their preferences more fully, aligning more closely with their true preference profile.

Indifference

Assume voter i has a preference ordering over Z such that $A \succ_i C \sim_i B$. In a plurality election, casting a vote for candidate A would minimize the distance ratio. In an RCV election, if truncation is allowed, the voter could rank A as their 1st choice and leave the remaining ballot blank. If a full ranking is required, the voter could submit a ballot ranking A as the 1st choice, followed by either B or C as the 2nd choice, with the remaining candidate as the 3rd choice, thereby minimizing the distance ratio. These ballots reflect the following underlying preferences of the voter:

Plurality or RCV w/truncation	RCV full ballot

$$A \succ_i C \backsim_i B \qquad\qquad\qquad\qquad A \succ_i C \succ_i B$$

If voters are indifferent between candidates outside of their top choice, there is no difference in expressiveness between voting rules if RCV voters have the option to truncate their ballots.

Truthful vs Strategic Voting

The previous examples focus solely on expressive preferences. This example considers how strategic voting may influence voter behavior differentially across various voting systems. Assume a voter i has a preference ordering over Z such that $A \succ_i C \succ_i B$. To isolate the effects of expressiveness and pivotality, suppose there is no intrinsic utility from voting (i.e., no "warm glow"), with $C = 0$, $\beta(b_i) = 1$, and that candidate A has a 0% chance of winning. Under these conditions, voter i can only influence the election outcome through strategic voting. In a plurality system, the optimal deviation for i would be to vote for C rather than A. In an RCV system, the optimal deviation would similarly involve ranking C first instead of A. The ballots would reflect the following preferences:

Plurality   RCV

$$C \succ_i A \backsim_i B \qquad\qquad\qquad\qquad C \succ_i A \succ_i B$$

The key difference between a vote cast in RCV versus one cast in plurality is that RCV permits voters to express a preference for A over B. By examining the distance ratio for each submitted vote, the impact of this distinction can be quantified, measuring the cost to an expressive voter of casting a strategic rather than truthful vote.

Figure 7 illustrates the previous example graphically, where green lines indicate a non-expressive voter ($\lambda_i = 0$). The red lines depict utilities and probabilities under RCV, and the blue lines show those under Plurality. Panel (a) shows the threshold probability of being pivotal required for voters to participate while panel (b) graphs the probability of being pivotal against the utility of voting. The plot demonstrates a monotonic relationship between voting utility and the probability of being pivotal.

As shown, for non-expressive voters, strategic voting does not alter their probability of voting or utility. For expressive voters, however, RCV introduces a lower cost to voting strategically compared

10

to Plurality, as indicated by the differences between the red and blue lines. When expressive voters must choose between voting strategically or expressing their true preferences, RCV helps mitigate the utility loss associated with strategic voting, resulting in a higher probability of voting.

2.2 Hypotheses

The stylized model of voter participation yields comparative statics under different voting rules. The following propositions present testable predictions on voter turnout across various voting systems: hypothesis 1 and 2 address turnout under differing voter preferences, while hypothesis 3 considers turnout in the presence of strategic voting. To empirically test these hypotheses, the voting systems in the experiment are designed to reflect the conditions set forth in the propositions.

Hypothesis 1: (Indifferences)

If voters are indifferent among candidates beyond their top preference, turnout in an election using RCV will be at least as high as in an election using plurality.

Hypotheses 2: (Strict Preferences)

If voters are indifferent among candidates beyond their top preference, turnout in an election using RCV will be strictly higher than an election using plurality.

Hypotheses 3: (Cost of strategic voting)

Strategic voting incurs lower expressive costs under RCV than under Plurality, leading to higher turnout among strategically voting individuals in RCV elections.

These hypotheses guide the design and calibration of the experimental elections. Further elaboration on the experimental design and the implementation of these theoretical components is provided in the following section.

3 Experimental Design

This section outlines the experimental design and its practical implementation. Additionally, it demonstrates how this design can function as a broader framework for examining changes in voter behavior resulting from variations in institutional structures.

3.1 Treatments

A key methodological challenge in studying voting rules is that they are not randomly assigned in real-world political elections, making causal inference difficult to establish. Furthermore, extrapolating the impact of voting rules on behavior such as voter participation from laboratory settings is problematic when participants have already agreed to show up to the lab. While mock elections may provide an alternative, without appropriate incentives, participants may not engage seriously, raising concerns whether their decisions accurately reflect their genuine preferences and voting behavior.

To implement a proxy for real elections while incorporating incentives to encourage serious voter participation, this study adapts a design used in Exley and Petrie (2018). Their design examines whether alerting individuals to a future prosocial request diminishes their prosocial behavior, using a disguised ask in an online voting contest between animal rescue groups. I adapt their design to a context where the candidates are charitable organizations and act as proxies for political candidates. Charities are chosen to be correlated with political preferences. Participants are invited to vote for their preferred charitable organization to receive a $500 donation and are randomly assigned to one of three voting rules. Five rounds of elections are held, enabling observation of voter participation over time as their chosen candidates win or lose.

The three voting rule treatments are: *Plurality*, *Placebo*, or *RCV*, each assigned with equal probability. Figure 1 shows the decision screen voters face in each treatment. In the *Plurality* treatment, voters select only their top choice from the list of candidates using a simple ballot. The *RCV* treatment allows voters to rank the candidates in order of preference. The *Placebo* treatment combines elements of both, allowing voters to submit a preference ballot but only utilizes their first choice to determine the winner. Once participants are assigned to a specific treatment group, they receive separate invitations to subsequent elections, ensuring they remain within their initially assigned treatment. This design avoids rerandomization and enables a longitudinal analysis of the effects of different voting rules.

According to the voting model in Section 2, systems like *Plurality* and *RCV* alter both the aggregation rule (how votes are counted) and the structure of the ballot (how preferences are expressed).

This complicates direct comparisons between voting rules that utilize different ballot formats, as it becomes difficult to determine which element—the aggregation rule or ballot structure—drives any observed effects. To address this issue, the *Placebo* treatment is introduced as a control to isolate the impact of ballot expressiveness. A comparison between the *Placebo* and *Plurality* treatments isolates the effect of changing ballot expressiveness, while a comparison between the *Placebo* and *RCV* treatments isolates the effect of altering the aggregation rule. This design allows for a clearer identification of the specific mechanisms driving changes in voter behavior across different electoral systems.
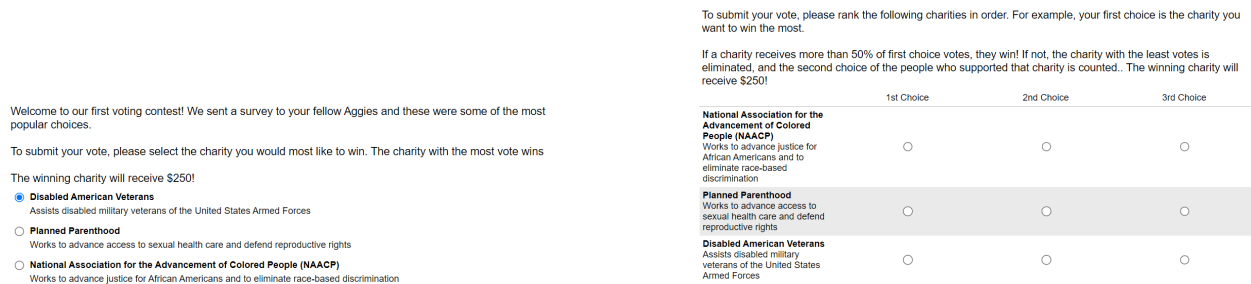
(a) Plurality
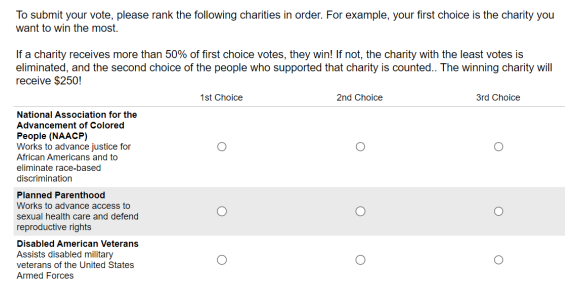
(b) Plurality with Preference Ballot
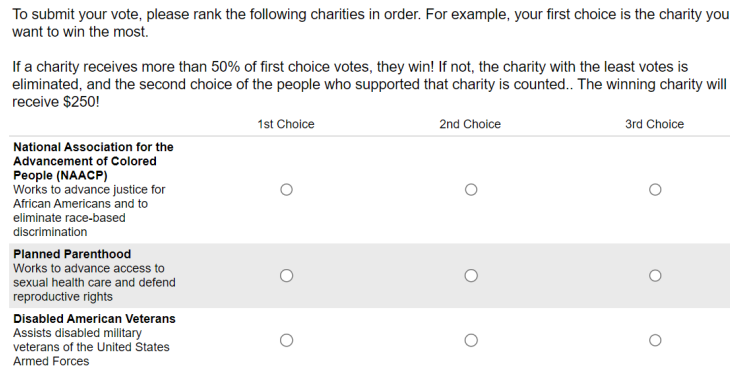
(c) Ranked Choice Voting

Figure 1: Screenshots of Experiment Decision Screens

Given that ballot structure influences voter behavior by determining the set of choices available and the degree to which a vote accurately reflects individual preferences, participation rates in the *RCV* treatment are expected to be strictly higher than in the *Placebo* treatment, contingent on the intensity of voter preferences. To test this, election rounds are structured to induce varying levels

of voter preference intensity.

One round is used to test strategic voting, allowing participants the opportunity to exploit polling information to manipulate their vote. This strategic behavior is assessed in conjunction with the participants' binding donation. A secondary cross-randomization is introduced and only used in this round: one group receives the *Info* treatment, granting them access to a table that displays the relative popularity of each charity, derived from a prior survey; the other group, assigned to the *No Info* treatment, votes without any such information. Additionally, this round explores whether an increase in the number of candidates beyond three influences the rate of completed ballots and affects the participants' decisions regarding binding donations.

3.2 General Methodological Framework

A field experiment on elections poses unique challenges, especially given the lack of control over voter preferences. This constraint complicates drawing insights from election outcomes and changes in voting behavior. Additionally, for results to be policy-relevant, voting patterns in charitable elections must reflect political voting behavior. To address these challenges, the experiment employs a three-stage design to replicate political election conditions. This setup ensures that participants are invested in outcomes by voting on charities to receive actual donations. Charities are selected to reflect neutral and polarized political preferences, verified by a calibration survey.

The first stage involves administering a calibration survey to a subset of the study population, collecting detailed data on participants' preferences for charitable causes and political ideologies. This data is used to determine whether preferences for charities are correlated with political preferences, offering suggestive evidence that behavior observed in the charity-based elections serves as a valid proxy for political voting behavior. The data also plays a critical role in simulating election outcomes. While this study uses charitable organizations to compare voting behavior, similar methods could be applied to other election types, such as elections over board members, by eliciting preferences for non-charity candidates. To reduce potential bias in elections, survey participants are excluded from future election rounds.

The survey is used to generate out-of-sample predictions about voting behavior in elections

14

featuring the candidates that participants were surveyed about. In the second stage, the data gathered from the calibration survey is used to simulate and predict the outcomes of elections between all possible combinations of candidates. Additionally, the simulation is able to explore how voter behavior may differ under plurality and Ranked Choice Voting (RCV) systems. This scope of this study is restricted to elections between three candidates, so a total of 455 unique election combinations are examined, focusing on elections that met a specific selection criteria. The simulation provides a controlled environment to explore voter dynamics and strategic behavior across different electoral systems before the actual implementation of the elections.

The selection criterion for this study focuses on elections where no candidate is projected to secure over 50% of the vote, specifically avoiding landslide scenarios. Two principal election types are identified: neutral and polarized contests. Polarized elections, in particular, are structured as efficacy trials, providing conditions most conducive to detecting the effects of Ranked Choice Voting (RCV). These types of elections serve as crucial test cases for analyzing the effects of Ranked Choice Voting (RCV) and provide a diverse range of electoral dynamics for a more comprehensive evaluation of voter behavior under different voting systems.

The elections are conducted in a series of weekly voting rounds, where participants vote over three charities, with the winning charity receiving a $500 donation. Voters are randomly assigned to one of three voting systems: Plurality, Placebo, or RCV. Recruitment begins one week prior to the first election, during which participants are informed that a random voter will be selected to receive $100. Reminder emails are sent two days before and on the day of the election. Voter participation is measured by the rate of return to future elections. After voting, participants are given the option to allocate a portion of their potential $100 winnings to one or more charities, deciding how much to donate versus how much to keep. Post-election surveys are administered to gather feedback on participant satisfaction with both the election outcomes and the voting process.

This methodological framework is designed to ensure the experimental design reflects realistic voter preferences and behaviors, improving the validity and relevance of the findings. Although this study uses charities to address specific research questions, the same approach can be applied to evaluate changes in electoral systems in elections with consequential outcomes.

3.3 Implementation

3.3.1 Calibration Survey

The initial phase involves administering the calibration survey to a subset of subjects to elicit their political preferences and preferences for charitable organizations.

Data and Recruitment

Recruitment for the calibration survey took place in April 2024 via email.[6] Participants were informed that they would receive $5 for completing the survey, administered online via Qualtrics. Subjects responded to several questions designed to elicit their preferences on charity and political matters.[7] A comprehension check, structured as a ranked-choice voting (RCV) election, was included at the survey's conclusion to ensure consistency of votes with reported preferences. Approximately 90% of the participants' votes aligned with their reported preferences. Survey participants were excluded from participating in future election recruitment and studies.

To elicit preferences for charities, participants were presented with three different types of questions. These included a binary question assessing willingness to donate, a ranking question to order charities by preference, and a hypothetical allocation task where participants decided how to distribute $100 among the charities. One key feature of these survey questions is that they are incentivized. Participants are notified that one randomly chosen response would be linked to actual donation decisions.[8] Unlike traditional surveys, which often provide monetary incentives for completion or participation, this approach incentivizes the accuracy of responses by directly tying them to real-world outcomes. This novel method of incentivizing survey responses based on real preferences can be applied broadly to surveys with consequential outcomes. For instance, political

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[6]A random sample comprising 10% of freshmen, sophomores, and juniors was contacted, while all eligible seniors were invited. Including all seniors ensured that their participation in the survey did not overlap with recruitment for the fall elections while increasing the power of the survey. A pilot study from the previous year, which included seniors and freshmen, revealed no significant differences in political and charitable preferences between these groups, addressing concerns about response variation across academic years.

[7]The survey included three questions about charitable organizations and two about political preferences. Details of the elicitation process are available in Appendix C.1.

[8]In the binary donation question, participants indicated whether they would consider donating to each charity, and for a randomly selected participant, one charity from their "yes" responses was chosen to receive a donation. For the ranking question, the top-ranked charity received $60, the second-ranked charity received $30, and the third-ranked charity received $10. In the allocation task, the allocation decision of a randomly selected participant was implemented as specified.

polls could tie random responses to donations to political parties to increase response accuracy. Further discussion of the impact of incentivizing survey responses can be found in Section 3.3.2.

A total of 426 undergraduate students participated in the survey. The median completion time was 6 minutes and 20 seconds, with approximately 97% of participants fully completing the survey. The sample is broadly representative of the undergraduate population, capturing a similar distribution of demographics. Further details on the demographic and other characteristics of the participants can be found in Table 2.

Charity and Political Preferences

While the primary objective of this survey is to calibrate the electoral framework, it also offers suggestive evidence that support for charitable organizations and their causes tends to align with individuals' political preferences. This finding hints at an underlying connection between charitable giving and political ideology, suggesting that political beliefs may influence not only electoral choices but also the social causes individuals prioritize. The survey elicited preferences on 15 charitable organizations, divided equally into three groups. One-third were expected to show no difference in support between conservatives and liberals, one-third were expected to lean liberal, and one-third were expected to lean conservative.[9]

Figure 10 illustrates the distribution of support for each charity by political affiliation. The results reveal a strong alignment between political identity and charity support. Charities that demonstrated significant differences in support levels between liberals and conservatives were categorized as polarized.[10] These patterns were consistent across all methods of eliciting charity preferences and various measures of political affiliation, suggesting that preferences in charity elections may serve as effective proxies for political preferences in real elections.

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[9]The organizations classified as liberal are 1: Planned Parenthood, 2: National Women's Law Center, 3: Trevor Project, 4: Cool Earth, 5: Green America. The organizations classified as conservative are 1: Interfaith Alliance Foundation, 2: Samaritan's Purse, 3: Disabled American Veterans, 4: Children's Hunger Fund, 5: Homes for Our Troops. The organizations classified as neutral are 1: Friends of Animals, 2: Aggieland Humane Society, 3: Brazos Valley Foodbank, 4: Parkinson's Foundation, 5: American Heart Association.

[10]Participants were also asked about their perception of the charities and whether they viewed them as Neutral, Liberal, or Conservative. The results, although less stark, align with the results from their incentivized decisions.

3.3.2   Simulation

Since this analysis centers on elections featuring three candidates, simulations were conducted across all 455 unique combinations derived from the 15 available charities.[11] In simulating the elections, various combinations of charity preference data types derived from the calibration survey are utilized.[12] The primary discussion of simulation results centers on outcomes based solely on ranking data. Analysis of the 455 potential three-candidate combinations reveals that in 355 cases, no candidate received more than fifty percent of the plurality or first-round votes, with the fifty percent threshold set to exclude uninformative landslide scenarios.

To explore the conditions under which RCV produces positive, negative, or neutral effects, three distinct election types are targeted: Neutral, Lesser of Two Evils, and Polarized elections. Each election type is structured based on a blend of model-driven hypotheses and conditions observed in real-world electoral settings.

Neutral elections include charities without strong political affiliations, providing a balanced choice set that minimizes polarization. Mixed elections feature one charity from each ideological category—liberal, neutral, and conservative—allowing for comparisons across varied preference intensities. Polarized elections comprise charities with clear ideological alignments, leading participants to favor the charity aligned with their political views. These elections are specifically designed to create a potential "spoiler effect," where votes split between two ideologically similar charities enable a victory for a charity from the opposite end of the political spectrum.

1. **Neutral**: American Heart Association, Aggieland Humane Society, and Brazos Valley Foodbank

2. **Mixed**: Planned Parenthood, Interfaith Alliance, and Parkinson's Foundation

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[11]The decision to focus on three-candidate elections simplifies the analysis, reducing dimensionality and clarifying patterns of voter behavior. Including additional candidates would introduce excessive complexity, making it more difficult to isolate the mechanisms at play. However, this constraint limits the generalizability of the results to elections with larger candidate pools. Future research could address this limitation by exploring the effects of RCV in elections with more candidates.

[12]For details on the specific combinations of preference data and the associated predicted outcomes, see Table **??** [missing table]. Overall, predicted outcomes remained stable across these simulation variations.

3. **Polarized w/Liberal Split**: Disabled American Veterans, Homes for Our Troops, and Cool Earth

4. **Polarized w/Conservative Split**: Planned Parenthood, National Women's Law Center, and Samaritan's Purse

The primary distinction between these elections is the degree of correlation between voter support for charities and the alignment of political preferences with that support. By adjusting how voters perceive similarities or differences between candidates, it becomes possible to evaluate how these correlations influence election outcomes. As anticipated, higher correlations are observed among charities with similar political alignments, while lower correlations occur among charities with differing alignments.[13] In the *Neutral* election, all charities exhibit relatively high correlation, suggesting that voters are largely indifferent to which charity wins, apart from their top preference.

The *Lesser of Two Evils* election modifies this setup, introduces a scenario where supporters of one charity are likely to have a distaste for the other two. This scenario mirrors elections where a moderate third candidate serves as an alternative to two polarizing candidates. Finally, *Polarized* elections are structured to reflect real-world elections in which two polarizing candidates are the main contenders, while a third candidate splits the vote of the candidate with similar ideological positions. Vote splitting has been a key issue in electoral reform, particularly in the context of RCV, because some claim it can distort election outcomes in systems like plurality voting. Based on the survey data and simulations, it is possible to predict which elections are most likely to experience vote splitting, with Ranked Choice Voting (RCV) and plurality systems yielding different outcomes due to this phenomenon. These predictions formed part of the selection criteria for elections 3 and 4.

3.3.3 Elections

Data and Recruitment From September 5 to October 3, 2024, weekly voting contests were held every Thursday, allowing participants to vote for one of three charities, with the winning charity receiving a $500 donation. All undergraduates at Texas A&M University were invited via email,

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[13]See Table 6 for the correlation table of charities by support type.

with voting accessible by phone or computer. To encourage participation, one randomly selected voter from each election received a $100 prize, and one survey participant per cycle won $50.[14]

Additionally, participants were required to provide demographic information, including ethnicity, gender, and political affiliation.[15] Upon completing these steps, participants were randomly assigned to either the Plurality, Placebo, or RCV voting treatment and were given instructions on how to submit their vote.

Elections closed at midnight on the day they commenced. On the following Tuesday, election results were disseminated alongside donation receipts and a survey inquiring about participants' satisfaction with the election process and outcomes. A random participant who completed the survey was selected to receive a $50 prize. The date of the next election was also announced, and the process was repeated for subsequent election cycles.

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[14]Participants only needed to vote once to be eligible for the prize; additional voting rounds did not increase the chances of winning, so the incentive did not influence repeated participation.

[15]Prior to voting, participants confirmed their eligibility by agreeing to the terms of use. Information regarding the research nature of the contest was available only through a terms-of-use hyperlink, which was clicked by approximately 4% of participants. This click occurred before participants were exposed to treatment variations in the second step.
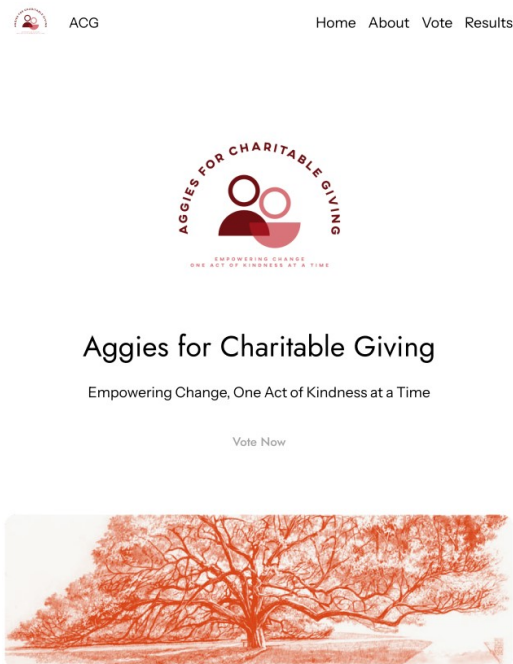
(a) Landing Page


(b) Promotional Flyer

Figure 2: Voting Contest Recruitment

The contest was hosted on the website of Aggies for Charitable Giving, a student organization established specifically to manage and ensure the legitimacy of this research project.[16] The voting contest landing page and a sample promotional flyer are shown in panels (a) and (b) of Figure 2. The establishment of Aggies for Charitable Giving provided access to advertising spaces typically reserved for student organizations, including electronic bulletins and campus yard signs, which helped increase contest visibility. The organization also enabled further promotion through The Battalion, the university's student newspaper. Panel (b) in Figure 2 features an example of the materials used in these promotional efforts.

Timeline of Elections

The timeline of election is illustrated in Figure 3, illustrating the sequence and overlap of recruitment and voting rounds. As shown, new voter groups (labeled as Groups A, B, etc.) enter

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[16]The organization was created to facilitate the research, with its constitution and operational guidelines detailed in the Appendix. The website includes a section displaying donation activity from the pilot project, verifying that the elections result in actual charitable contributions.
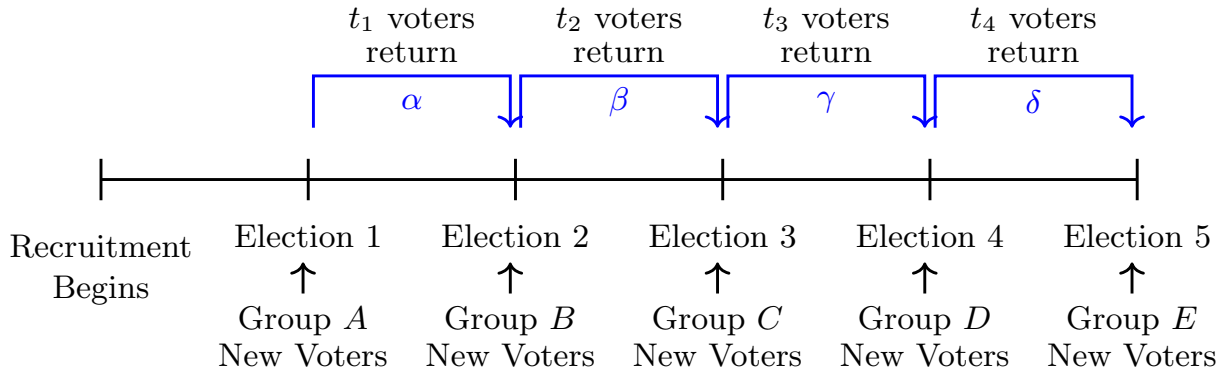
Figure 3: Election timeline

between election rounds, while a proportion of earlier voters (e.g., α, β) return. In this setup, each round comprises both first-time voters, unfamiliar with previous election dynamics, and returning voters with prior experience. By observing voter turnout across rounds, the analysis isolates the effect of the voting rule on the likelihood that a new voter will participate in the next election round.

Since elections are held weekly, earlier voters have increased opportunities to participate in subsequent rounds, which allows the analysis to focus on the impact of initial exposure to the voting rule on future voting behavior. By emphasizing this initial-return behavior, measured at each voter's first re-election opportunity, the analysis achieves a cleaner comparison across treatments.

Finally, the results presented below are interpreted as intent-to-treat (ITT) estimates, given that it remains uncertain whether voters fully understand how each voting rule determines election outcomes.

4 Results

The analysis for these elections was pre-registered on the AEA RCT Registry (Registration No. AEARCTR-0011123). The primary deviation from the pre-registered plan involve exploratory analysis on the interaction between supporting a losing candidate and the effects of different voting rules. While the analysis of supporters of losing candidates was included in pre-registration, it was conducted with a different focus than initially specified.

4.1 Description of voters

A total of 1,963 people voted in at least one of the elections. The average voter in our sample is a white woman who identifies as Republican.

Table 1: Summary Statistics for Elections

	All mean	sd	Plurality mean	Placebo mean	RCV mean	p-value difference
Gender						
Female	0.59	0.49	.61	.60	.57	0.46
Race						
White	0.49	0.50	.47	.49	.49	0.74
Black	0.04	0.20	.05	.04	.03	0.37
Hispanic	0.26	0.44	.26	.29	.24	0.14
Asian	0.16	0.38	.17	.14	.20	0.10
Other	0.05	0.18	.05	.03	.04	0.34
Political Affiliations						
Republican	0.35	0.48	.37	.36	.32	0.09
Democrat	0.26	0.44	.25	.24	.29	0.26
Other	0.39	0.49	.38	.40	.38	0.71
Observations	1963		665	565	733	
Joint Test						0.16

Note: The p-value reflects the statistical difference across the three voting treatments.

A key limitation of this study is that findings derived from a sample of undergraduate students may not be fully generalizable to the broader U.S. voting population. Demographic analysis confirms that this sample does not reflect a representative cross-section of U.S. voters (see Table 2). Nonetheless, this sample remains appropriate for the study, as the distribution of political preferences among the students aligns closely with those of the general U.S. electorate (see Table 3). Additionally, given the historically lower civic engagement among younger voters, this sample may effectively establish an upper bound on the potential influence of Ranked-Choice Voting (RCV) on voter turnout.

4.2 1st Stage Validation

Figure 8 summarizes participant numbers in each election round, showing the proportions of new versus returning voters. Overall, participation declined over time, with 665 participants in round 1, 692 in round 2, 626 in round 3, 482 in round 4, and 423 in round 5. In this analysis, any voter in a given round is considered a "returning voter" in subsequent rounds, and participants' initial voting rounds are controlled to isolate the effects of different voting experiences.

Recent elections have highlighted the limitations of survey methods for election forecasts. For example, in 2016, most forecasters, relying largely on opinion polls, estimated Hillary Clinton's chances of winning the presidential election at anywhere from 70% to 99%, anticipating her victory in key states like Pennsylvania and Wisconsin—states ultimately won by Donald Trump. Other approaches, such as forecasting models and betting markets, may offer better accuracy but lack the detailed insights into voter preferences provided by polls. Beyond issues like sampling bias, a key shortcoming of polls is the lack of incentives for respondents. This study addresses this lack of incentives by linking survey responses to tangible real-world outcomes. This approach bridges the gap between respondents' stated preferences and their actual behavior, enhancing the practical applications of survey data.[17]

The calibration survey and simulations accurately predicted 11 out of 12 election outcomes. Additionally, the simulations estimated real vote distributions closely, with no statistically significant differences from the actual results in 9 of the elections. The simulations also correctly identified the ranking of candidates by vote totals in 11 elections, accurately reflecting the order of candidates based on their vote counts. Figure 11 presents the vote distributions for both real and simulated elections, along with the p-values from F-tests that assess the differences between the predicted and actual outcomes. The joint F-test shows no significant difference between simulated and actual vote variances across all rounds (p = 0.501).

A crucial component of this first-stage validation is the accurate prediction of each runoff outcome in the RCV elections. This validates the experimental design's inclusion of different election types by showing that, in elections involving polarizing charities, voters generally rank
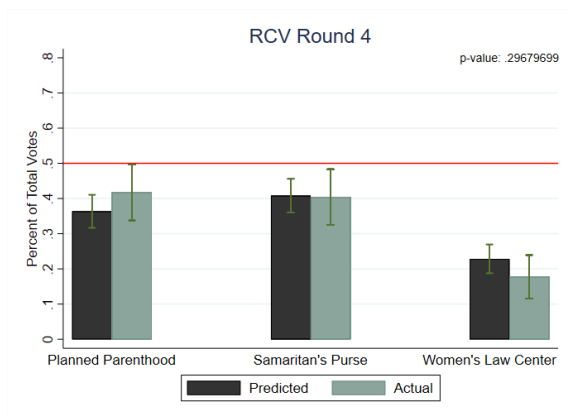
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[17]Although a pilot study using non-incentivized survey data was able to produce predictions that were not statistically different than actual voting distributions, it did fail to produce the spoiler effect.
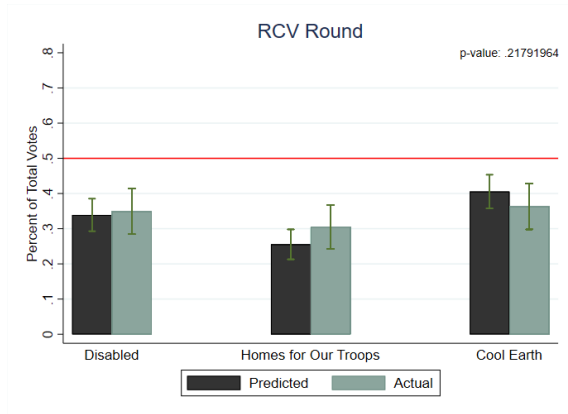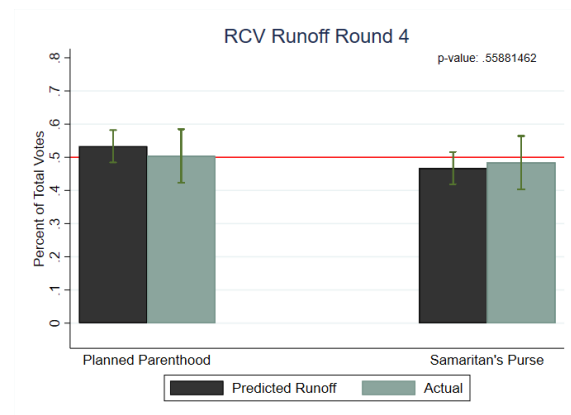
(a) RCV Round 3
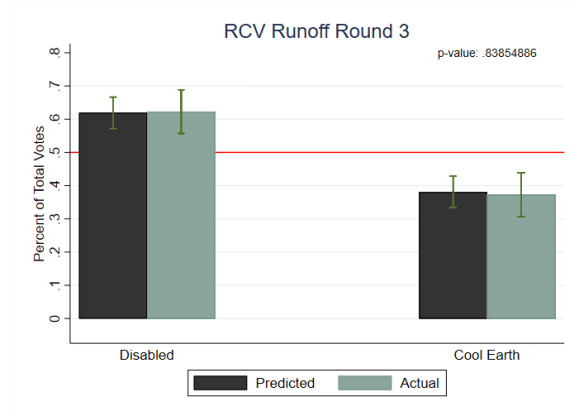
(b) RCV Runoff Round 3

(c) RCV Round 4

(d) RCV Runoff Round 4

Figure 4: RCV Election Results

candidates along political lines. Additionally, the results demonstrate that the elections can be calibrated to produce specific dynamics, such as the spoiler effect.

Figure 4 presents the outcomes of the RCV elections in rounds 3 and 4, along with the corresponding instant runoff results. These rounds were calibrated to reflect elections where two diametrically opposed candidates dominate voter support, while a third candidate splits votes from one of the front runners, generating a spoiler effect. In round 3, Cool Earth, a charity focused on climate change, won the plurality vote despite being less favored in head-to-head contests against Disabled American Veterans and Homes for Our Troops, both of which aid veterans. Indeed, in the RCV election, a majority of voters who selected Homes for Our Troops as their first choice ranked Disabled American Veterans as their second choice, changing the outcome of the election. A similar

dynamic occurred in round 4: while Samaritan's Purse, an evangelical Christian humanitarian aid organization, won in the plurality vote, Planned Parenthood, an organization providing reproductive healthcare, won the RCV election due to the 2nd ranks of supporters of Women's Law Center.

Accurate predictions of RCV election outcomes and instant runoff vote distributions suggest that preferences captured in the calibration survey closely mirror actual voter behavior. This alignment stems from an experimental design that encourages truthful voting: participants lack access to polling information and have no prior knowledge of which charities will appear on the ballot, reducing incentives for strategic voting. A valuable direction for future research would be to explore how incorporating a strategic voting element might impact these results.

4.3   Treatment effects

To evaluate how voting rules impact participation, the primary analysis focuses on how different rules affect voters' likelihood of returning for the next election. Limiting the analysis to returns for the immediate next election allows for consistent comparisons across rounds, since voters in earlier rounds naturally have more opportunities to return than those in later rounds. To reduce potential bias from unobserved heterogeneity, voters who have already chosen to return are excluded, as prior participation may correlate with factors like a higher propensity to vote, which could confound the effects of voting rules on participation.

Figure 5 illustrates the raw variations in the probability of returning among new voters across distinct election types. The average return rate for RCV elections is 22.07%, compared to 16.19% for plurality elections and 14.83% for the placebo treatment. The overall average return rate across elections is 17.66%.
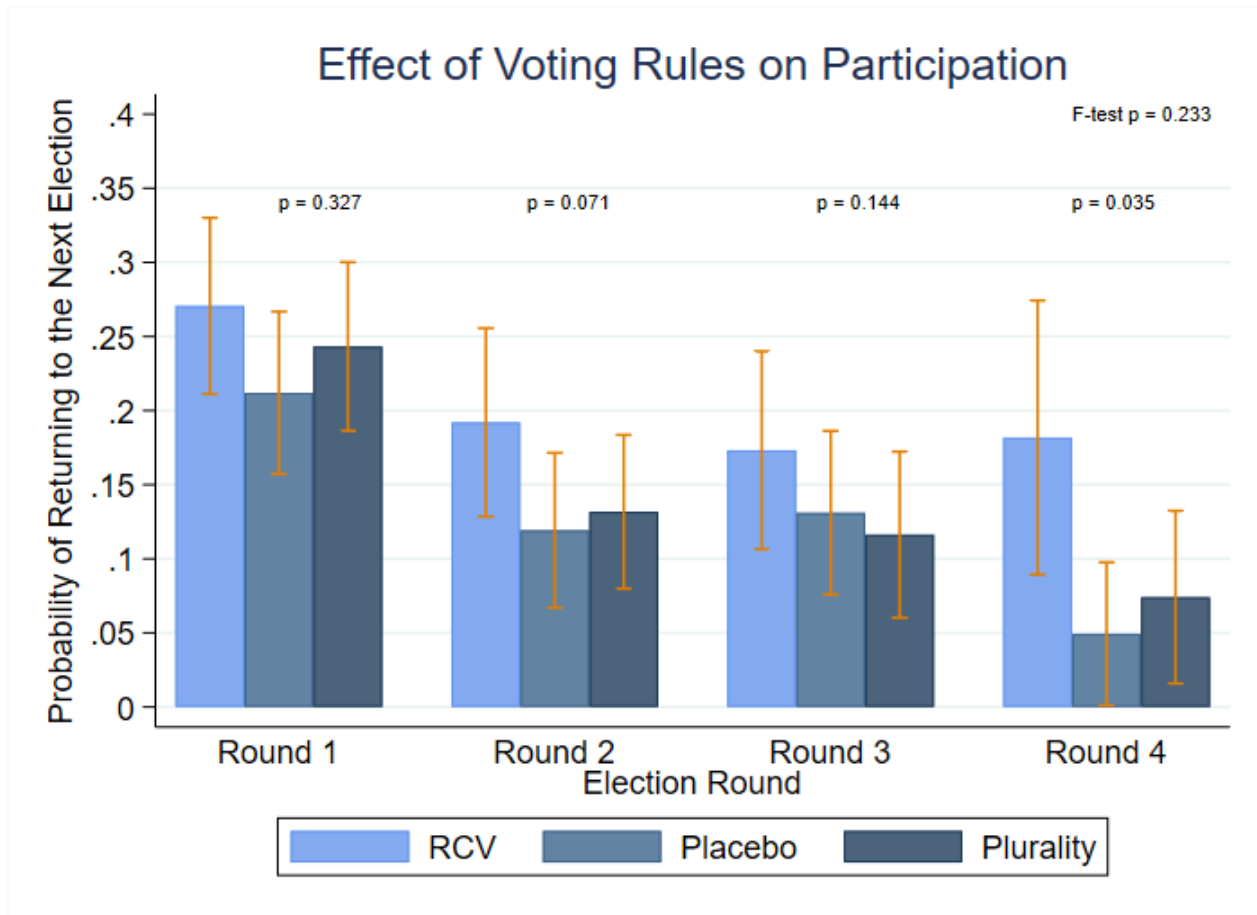
Figure 5: Change in Return Rates

Note: The p-values shown in the figure are calculated using t-tests to compare the mean return rates between RCV and plurality voting methods across rounds.

In the first round, baseline participation levels are notably higher, likely due to the initial engagement of the most enthusiastic participants. As the series progresses, subsequent rounds may attract new voters with relatively lower intrinsic motivation or interest, which could correlate with a decreased likelihood of returning in later rounds. As expected, no statistically significant differences emerge in the first round. Only in round four does the probability of returning to a RCV election significantly differ from that of plurality elections. Importantly, the return rates for the placebo treatment align closely with those for plurality elections, suggesting that any effect of RCV on participation is likely due to its impact on instrumental utility rather than any enhanced expressiveness provided by the modified ballot structure.

Table 7 displays the probit regression results assessing the effect of voting rules on the likelihood of voter return in subsequent elections. Recall the first round was structured to promote indifference among candidates, while later rounds introduced more polarized candidate choices, fostering strict preferences. The coefficients report the marginal effects of each voting rule, with standard errors clustered at the individual level, allowing us to interpret the impact of each rule on the probability of a voter returning.

The marginal effects reveal that RCV elections increase the probability of voter return in polarized contests. Specifically, voters are 11 percentage points more likely to return in round 2, 8.1 percentage points more likely in round 3 (weakly significant), and 11.4 percentage points more likely in round 4. In contrast, the placebo estimates remain close to zero, suggesting that RCV's impact on participation is driven by factors beyond mere expressive voting.

The impact of RCV on voter participation varies not only across election rounds but also across demographic groups (see Figure 9). Women, despite being the group most likely to return overall, show an additional increase of 6.97 percentage points in the likelihood of returning to future elections when assigned to RCV, compared to plurality elections. Conversely, Black voters assigned to RCV elections are 12.1 percentage points less likely to return in subsequent elections, aligning with existing findings that RCV may have a disproportionately negative effect on certain minority populations. However, these estimates should be interpreted with caution, given the small sample size of Black participants in RCV elections, only 45 individuals, making these estimates relatively noisy.

The magnitude of all effects discussed is substantial, given that the overall average return rate across elections is 17.66%.

Mechanisms

Due to the inclusion of a placebo treatment, we can rule out both expressiveness and novelty as explanations for the observed effects. RCV may increase participation through two primary mechanisms: changes in the aggregation rule, which influence instrumental utility, or changes in ballot structure, which influence expressive utility. So what about the aggregation rule is driving

the effect?

RCV elects better winners

Differences in how voting rules aggregate votes naturally impact election outcomes, suggesting that voters might prefer the winners produced by RCV over those chosen by plurality voting. If this were the case, we would expect differences in participation only when RCV and plurality voting yield different winners. While rounds 3 and 4, where RCV and plurality produce different winners, do show increased participation, a similar increase occurs in round 2, where both voting rules select the same winner. This indicates that the aggregation rule's effect on outcomes alone cannot fully explain the observed treatment effect.

Preference for RCV's aggregation rule

Since voters receive an explanation of how winners are determined, the treatment effect of RCV may stem from a preference for the rule itself. Voters might perceive the aggregation rule as inherently fairer, or, more plausibly, they may enter the election with prior familiarity or favorable views of RCV-based systems.

Perceived pivotality

The final way RCV could influence a voter's instrumental utility is by affecting their perceived level of pivotality. With RCV expanding voters' choice set, those who rank the winning candidate as their second choice may perceive their vote as more influential or pivotal to the election outcome.

Voters by Ranking

If a preference for RCV's aggregation rule is the primary driver of increased participation, we would expect a uniform rise in participation across all voters, regardless of how they rank the election's ultimate winner. Conversely, if perceived pivotality is the main channel, the effect should be concentrated among voters who rank the winner second, as these voters experience the highest perceived increase in the impact of their vote.

Figure 6 shows the average return rate of voters who first, second, and third rank the ultimate winner of elections. Comparisons are across RCV and placebo elections as voters in plurality do not use rank ballots.[18] The average participation rate for third rankers is 0.085 while the average

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[18]Robustness section contains discussion about scenarios where rankings from RCV or placebo elections are imputed onto plurality votes for comparison.

participation rate for first rankers is 0.257. This aligns with existing research on sequential elections that voting for winners can induce voters to return to future elections (Agranov et al. (2018); Callander (2007)).
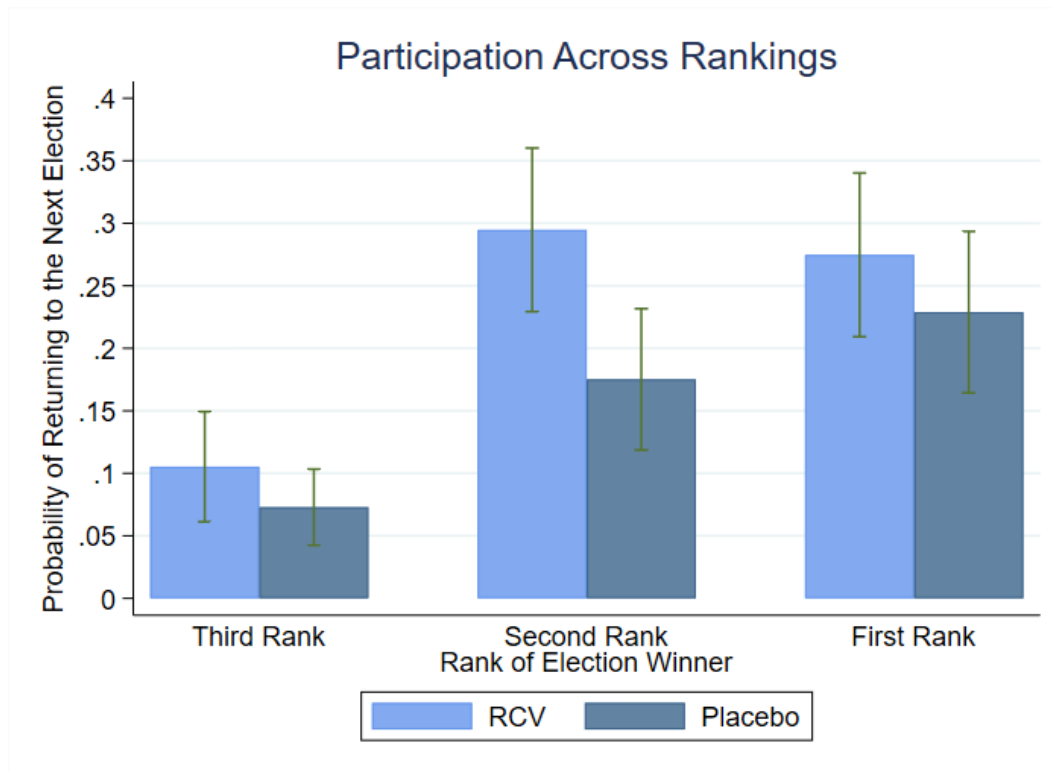
Figure 6: Effect of Perceived Pivotality

The key insight from this figure is the significant difference in participation rates between RCV and placebo elections for voters who rank the winner second, a difference that is not observed among those who rank the winner first or third. This means that the main effect found cannot be attributed to a preference for the voting rule itself. This suggests that voters who rank the winner second feel a heightened sense of pivotality in RCV elections compared to placebo elections. What might appear as benefits of increased expressiveness may, in fact, stem from an enhanced perception of vote impact.

Conclusion

Using charity voting contests as proxies for political elections, this study provides evidence of heterogeneous effects of RCV implementation on voter participation. The findings suggest that voters assigned to RCV elections are up to 11 percentage points more likely to return to future elections, and that this effect can be attributed to those who rank the ultimate winner as their second choice. This substantial effect on participation aligns with electoral reform theories proposing that voters benefit from having a "backup" choice. The magnitude of this effect on participation is large compared to those found in "get out the vote" interventions, which are specifically designed to boost voter turnout.

This study is among the first to offer causal evidence of RCV's impact on voter participation. Certain elections were calibrated to create optimal conditions for detecting an effect; therefore, these results should be interpreted as an upper bound. The study reveals that voting rules do not universally enhance participation, and further research is needed under conditions that might yield negative outcomes. Moreover, this paper focuses on RCV due to its prominent support in U.S. electoral reform discussions, but other voting rules, such as approval or Borda, should also be examined.

Additionally, this paper introduces a novel methodology to empirically assess voting rules by conducting a field-based voting contest to explore the relationship between voting rules and participation. Until now, studies evaluating voting rules outside real elections have been limited to synthetic simulations and survey or laboratory-based voting experiments. This approach opens new avenues for research, providing a foundation for future studies that employ consequential elections to investigate voting behavior. Researchers could use this approach to investigate the impact of more complex voting rules on ballot completion and strategic voting. Another promising avenue for exploration would be to explicitly test the effects of specific voting axioms, such as the Condorcet criterion, on voter behavior.

Amid growing dissatisfaction with the electoral process, there is a renewed interest in rethinking its rules and structure. The experimental framework outlined here equips researchers with valuable tools to evaluate potential electoral reforms. While this study does not conclusively establish the

effects of Ranked Choice Voting, it contributes meaningfully to the literature on voting behavior and to policy debates over the optimal voting system for political elections.

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A Tables

Table 2: Descriptive Statistics from Survey

		RCV	
	n	mean	sd
Female	426	0.66	0.48
Race:Asian	426	0.15	0.36
Race:Black	426	0.02	0.14
Race:Hispanic	426	0.26	0.44
Race:Native American	426	0.00	0.00
Race:Other	426	0.02	0.13
Race:White	426	0.55	0.50
Republican	426	0.33	0.47
Democrat	426	0.27	0.44

Table shows averages for calibration survey.

Table 3: Distribution of Political Preferences from Survey

		Full Sample	
	n	mean	sd
Conservative	426	0.33	0.47
Independent/Other	426	0.41	0.49
Liberal	426	0.27	0.44

Table shows the distribution of political preferences from the calibration survey. These are very consistent with the distribution of political preferences in the United States. The most recent Gallup poll shows that among US voters 30% are Republican, 41% are Independent, and 28% are Democrat

Table 4: $100 Allocation Decision by Affiliation

	Liberal		Conservative			
	n	mean	n	mean	Diff	p-value
American Heart Association	170	12.50	107	11.64	0.86	0.54
Planned Parenthood	170	25.43	107	2.54	22.89***	0
Make a Wish	170	15.89	107	19.76	-3.87	0.15
Samaritan's Purse	170	3.86	107	24.6	-20.74***	0
Goodwill Industries	170	5.59	107	5.7	-0.11	0.6
NAACP	170	9.23	107	1.5	7.73***	0
Disabled American Veterans	170	8.09	107	17.66	-9.57***	0
Nature Conservancy	170	17.23	107	13	4.23***	0
National Policing Institute	170	2.19	107	3.59	-1.4	0.33

Table shows averages for each political classification. The Diff column is the difference in means for the allocation decision between liberal and conservative participants. Stars indicate whether this difference is significant.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Rank Decision by Affiliation

	Liberal		Conservative			
	n	mean	n	mean	Diff	p-value
American Heart Association	170	3.90	107	3.65	0.25	0.19
Planned Parenthood	170	3.46	107	7.47	-4.01***	0
Make a Wish	170	3.54	107	3.19	0.35	0.11
Samaritan's Purse	170	6.90	107	3.90	3.00***	0
Goodwill Industries	170	6.12	107	5.04	1.08***	0
NAACP	170	4.46	107	6.92	-2.46***	0
Disabled American Veterans	170	5.26	107	3.39	1.87***	0
Nature Conservancy	170	3.85	107	5.01	-1.16***	0
National Policing Institute	170	7.52	107	6.42	1.10***	0

Table shows averages for each political classification. The Diff column is the difference in means for the rank decision between liberal and conservative participants. Stars indicate whether this difference is significant.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Probit Regressions Explaining Turnout Across Rounds (Marginal Effects Reported

Sample		New Voters		
Dep. Var:	1{Return}		1{Donation}	
	(1)	(2)	(3)	(4)
RCV	.044	0.032	0.015	0.018
	(0.042)	(0.041)	(0.0466)	(0.0466)
× Round 2	0.110**	0.102**	0.002	0.000
	(0.045)	(0.044)	(0.0518)	(0.0516)
× Round 3	0.081*	0.080*	0.001	0.006
	(0.046)	(0.046)	(0.0597)	(0.0598)
× Round 4	0.114**	0.126**	-0.051	-0.054
	(0.057)	(0.059)	(0.0774)	(0.0771)
Placebo	-0.011	-0.017	-0.021	-0.017
	(0.041)	(0.040)	(0.0464)	(0.0464)
× Round 2	0.025	0.027	-0.024	-0.026
	(0.042)	(0.041)	(0.0513)	(0.0513)
× Round 3	0.025	0.026	0.006	0.003
	(0.045)	(0.045)	(0.0593)	(0.0593)
× Round 4	-0.029	-0.032	-0.028	-0.029
	(0.053)	(0.053)	(0.0762)	(0.0759)
Round 2	-0.096**	-0.126**	-0.053*	-0.053*
	(0.032)	(0.074)	(0.0288)	(0.0287)
Round 3	-0.113**	-0.182***	-0.002	-0.001
	(0.033)	(0.080)	(0.0311)	(0.0312)
Round 4	-0.138***	-0.188***	-0.002	0.001
	(0.042)	(0.044)	(0.0372)	(0.0373)
Controls	No	Yes	No	Yes
Observations	1838	1838	1838	1838
Pseudo R-squared	0.00	0.01	0.00	0.01

Delta-method standard errors are reported in parentheses. The variables 1{Return} and 1{Donation} are defined as indicators if a voter returns in the very next election and chooses to donate a portion of their potential winnings respectively. Table shows results from a probit random effects model with and without controls.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Cross-correlation Table

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) American Heart Association	1.000														
(2) Planned Parenthood	−0.246***	1.000													
(3) Interfaith Alliance	0.571	0.122	1.000												
(4) Samaritan's Purse	0.758	0.849	0.118	1.000											
(5) Friends of Animals	0.168	0.073	0.230	0.072	1.000										
(6) Aggieland Humane Society	0.012	−0.019	0.059	0.013	−0.182	1.000									
(7) Brazos Valley Foodbank	0.195	0.107	0.227	0.088	0.096	0.008	1.000								
(8) Disabled American Veterans	0.133	0.099	0.110	0.102	0.088	−0.085	0.695	1.000							
(9) Hunger Fund	−0.201	−0.074	−0.298	−0.028	−0.172	−0.072	−0.522	−0.442	1.000						
(10) Homes For Our Troops	0.077	−0.038	0.231	0.004	0.038	0.131	0.178	0.020	−0.011	1.000					
(11) Parkinson's Foundation	0.126	0.060	0.163	−0.001	0.139	−0.175	0.373	0.312	−0.379	0.026	1.000				
(12) National Women's Law Center	0.126	0.060	0.163	−0.001	0.139	−0.175	0.373	0.312	−0.379	0.026	0.2	1.000			
(13) Trevor Project	0.126	0.060	0.163	−0.001	0.139	−0.175	0.373	0.312	−0.379	0.026	0.2	0.2	1.000		
(14) Cool Earth	0.126	0.060	0.163	−0.001	0.139	−0.175	0.373	0.312	−0.379	0.026	0.2	0.2	0.2	1.000	
(15) Green America	0.126	0.060	0.163	−0.001	0.139	−0.175	0.373	0.312	−0.379	0.026	0.2	0.2	0.2	0.21	1.000

Table 8: Effect of Losing (Marginal Effects Reported)

Sample	New Voters			
Dep. Var:	*1{Return}*			
	(1)	(2)	(3)	(4)
Loser	-0.152***	-0.147***	-0.202***	-0.211***
	(0.028)	(0.030)	(0.054)	(0.055)
RCV	0.061	0.065*	0.098**	0.116**
	(0.039)	(0.039)	(0.042)	(0.044)
× Loser	0.126**	0.121**	0.067*	0.052
	(0.049)	(0.048)	(0.033)	(0.0336)
Placebo	-0.038	-0.010	0.011	-0.012
	(0.037)	(0.045)	(0.017)	(0.0169)
× Loser	0.065	0.063	0.052	0.054
	(0.051)	(0.049)	(0.032)	(0.032)
Controls	No	Yes	No	Yes
Observations	1838	1838	1305	1305
Pseudo R-squared	0.01	0.02	0.00	0.01

Delta-method standard errors are reported in parentheses. The variables 1{Return} and 1{Donation} are defined as indicators if a voter returns in the very next election and chooses to donate a portion of their potential winnings respectively. Table shows results from a probit random effects model with and without controls.
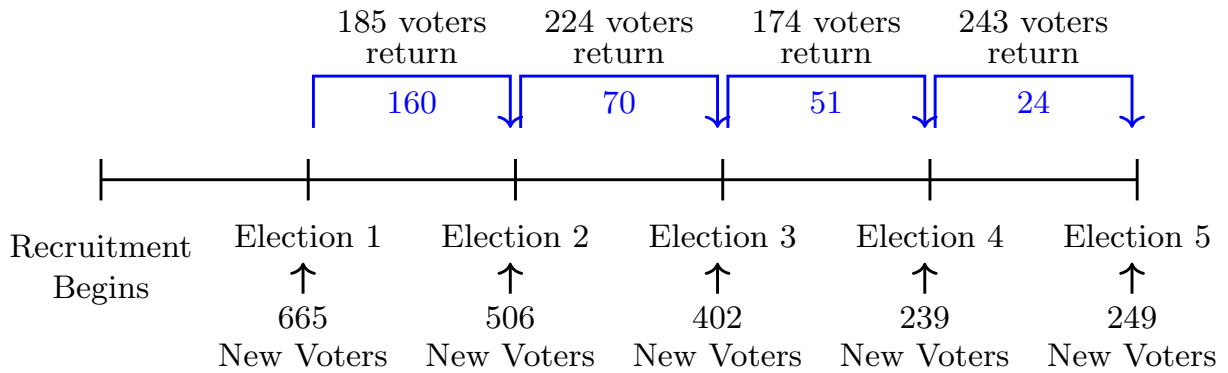
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

B Figures

(a) Probability of Participating
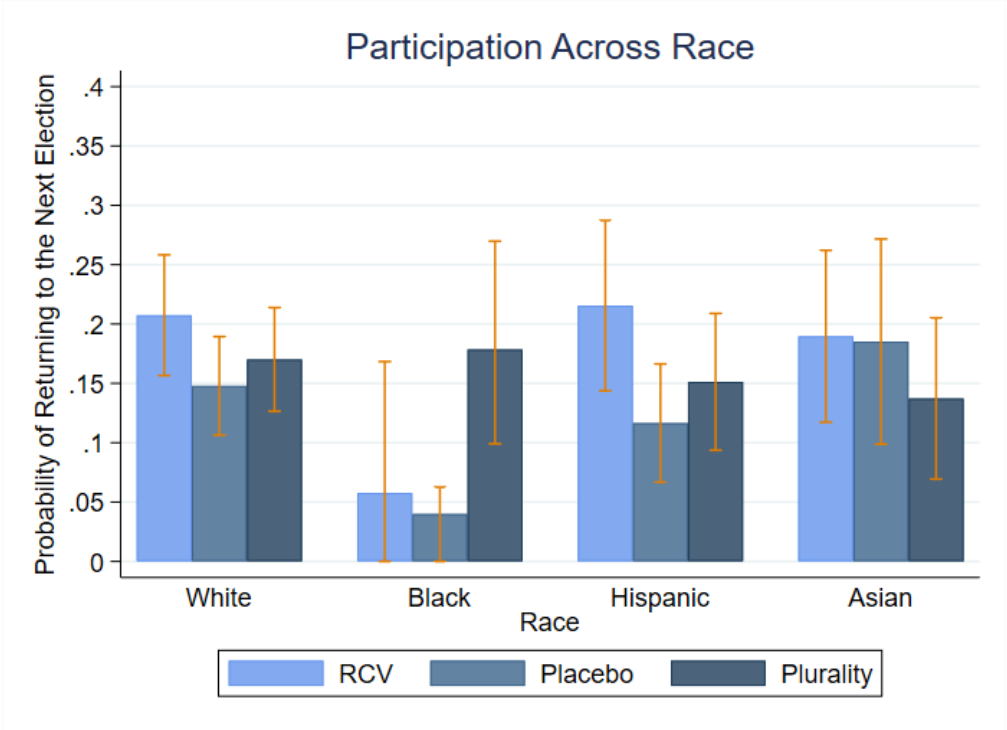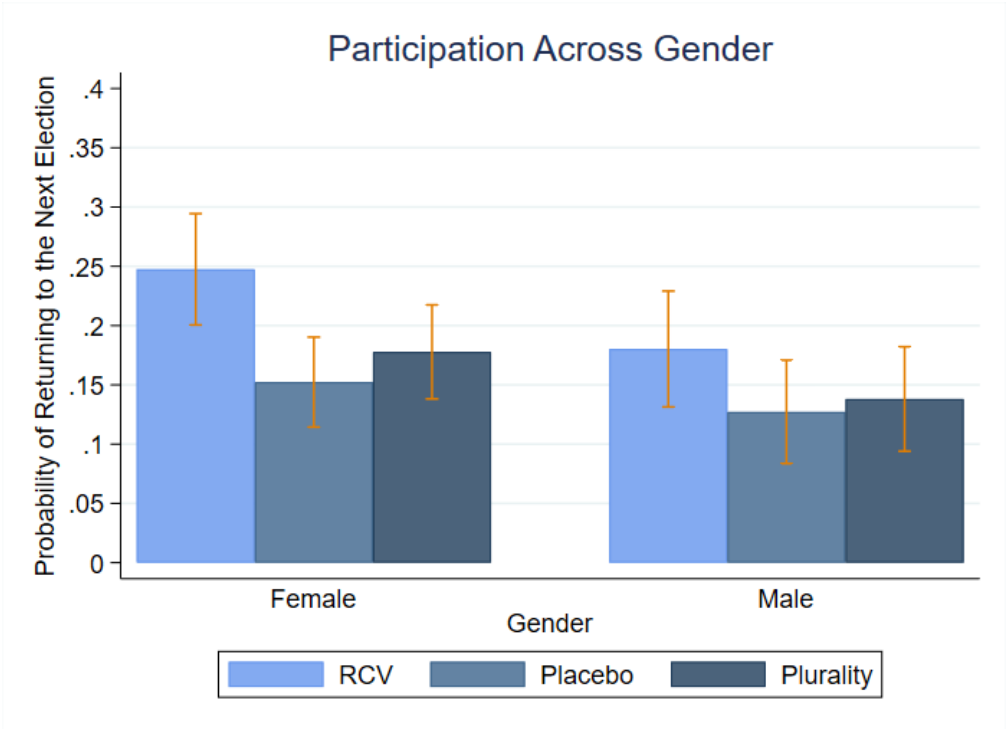

(b) Utility of Strategically Voting
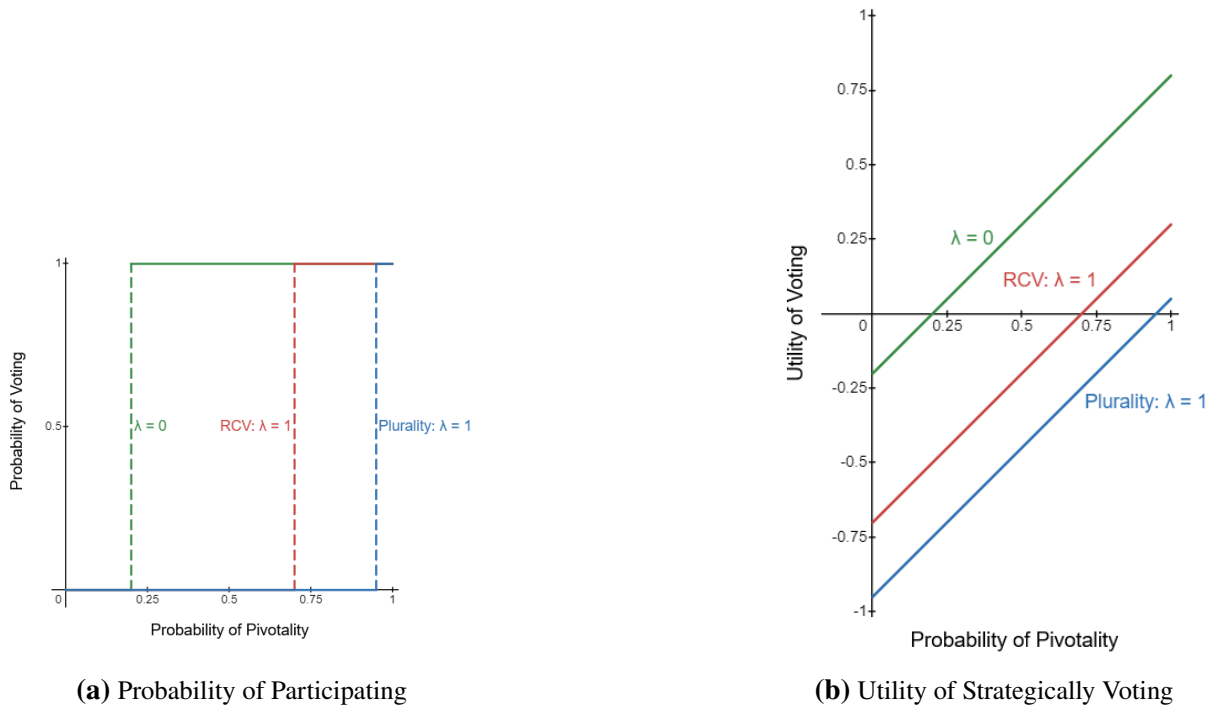
Figure 7: Effect of Expressiveness on Strategic Voting

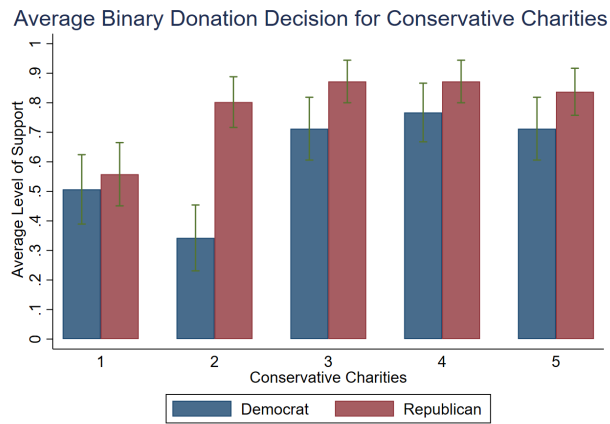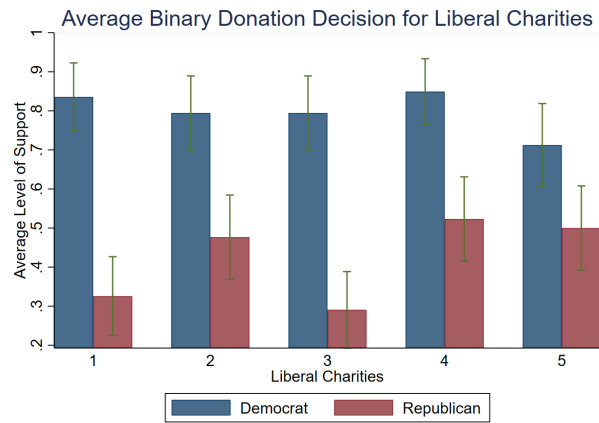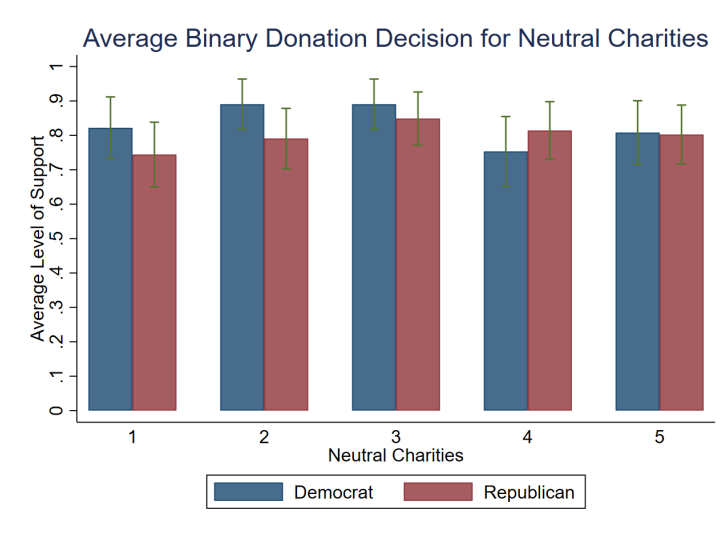*(A) plots the probability of voter participation as a function of pivotality, while (B) plots the utility of strategic voting under the same conditions. Both subfigures reflect varying levels of expressiveness.*
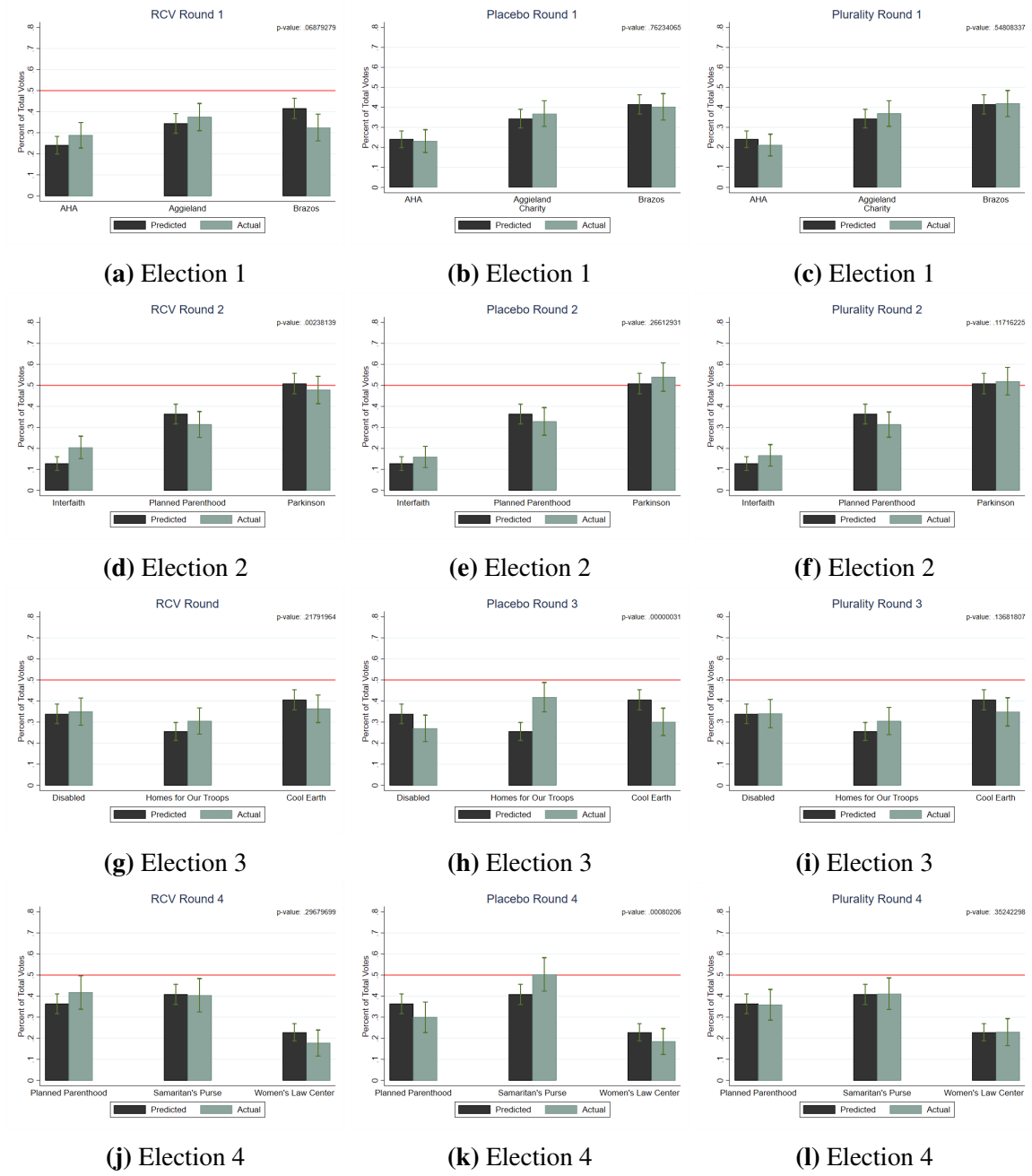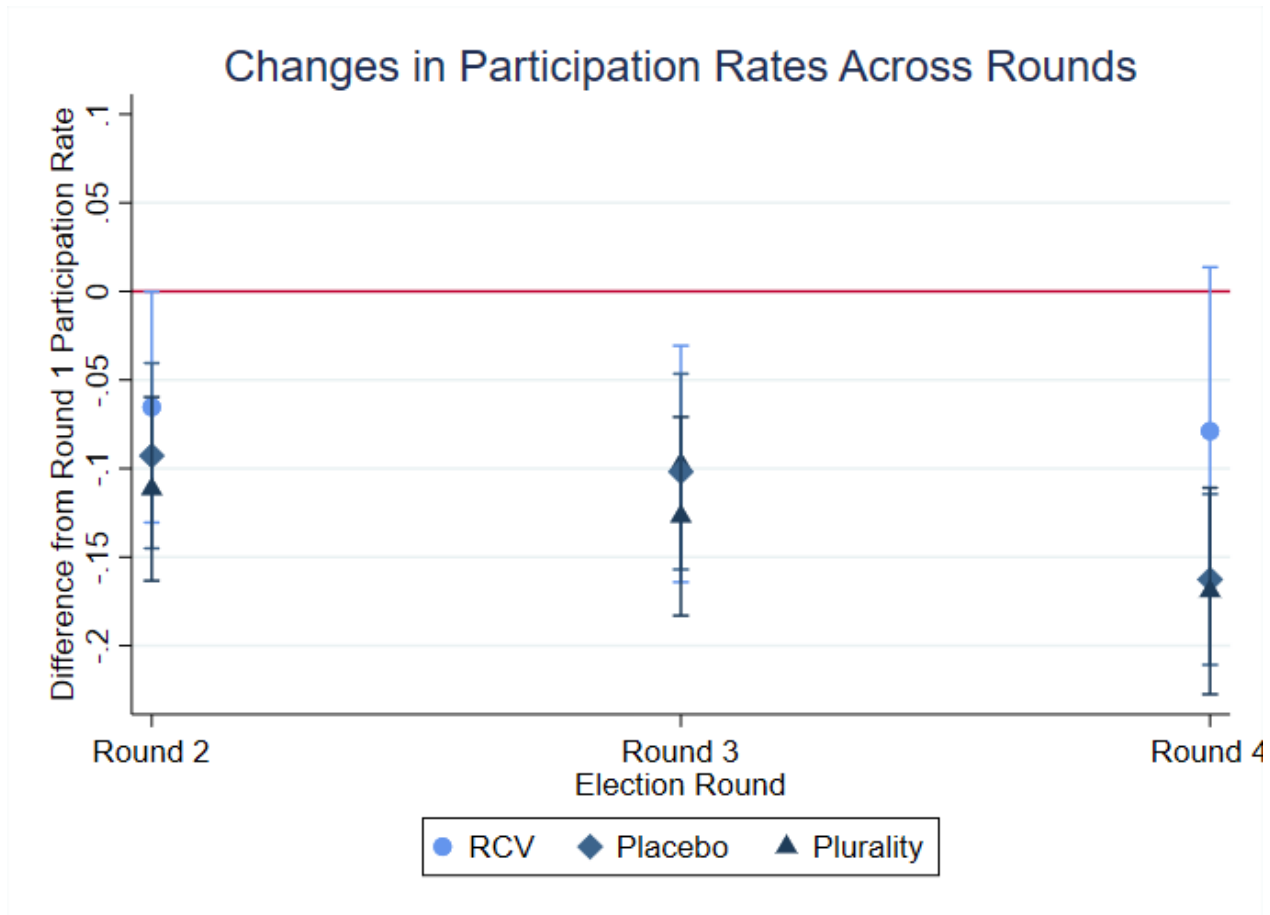

Figure 8: Decomposition of Participants

Figure 9: Heterogeneous Treatment Effects

Figure 10: Binary Donation Decision by Political Affiliation. Figure 10 shows the average response to a binary donation decision asking participants "Would you consider supporting this charity?"

43

(a) Election 1   **(b)** Election 1   **(c)** Election 1

(d) Election 2   **(e)** Election 2   **(f)** Election 2

(g) Election 3   **(h)** Election 3   **(i)** Election 3

(j) Election 4   **(k)** Election 4   **(l)** Election 4

Figure 11: Simulated vs Real Election Outcomes

Figure 12: Election timeline

So we can email you the results of the competition and contact you if there are issues with payment, please provide your university email address.

Please provide the initials of your name

Please select the method you would like to be paid with
○ Paypal
○ Venmo

Please enter the account name we should send your payment to. Make sure to spell this correctly.

What is your ethnicity?
○ White
○ Hispanic
○ Black
○ Native American
○ Asian
○ Other

Gender
○ Male
○ Female
○ Other

Please indicate your closest political affiliation
○ Democrat
○ Republican
○ Independent
○ Other
○ None

Figure 13: Participant Decision Screen Before Voting

C Additional Procedure Details

C.1 Calibration Survey Design

The calibration survey aimed to elicit charity and political preferences and explore the relationship between them. Participants answered three distinct types of questions about charitable organizations. The first question elicited a binary response, asking whether they would consider donating to a specific organization. The second question was an allocation exercise, where participants were asked to allocate $100 among the charities. The third question required participants to rank the charities from most to least preferred. Each question was accompanied by a brief description of each charity's mission, sourced from their website.

Charities were selected based on a combination of the Better Business Bureau's Wise Giving Alliance, a standards-based charity evaluator that allows sorting by cause, and Forbes's 2023 list of the 100 Largest Charities. A total of 15 charities were included in the survey, with an equal distribution of charities that I believe would be perceived as conservative, neutral, or liberal. Four of these charities were previously used in a pilot study, and the levels of support remained consistent between both surveys, demonstrating that this design can generate replicable results.

One reason for the consistency of these survey results is that the questions were incentivized. Participants were informed that a random response would be selected to make a real donation decision. For the binary choice question, a charity they considered donating to would be randomly chosen to receive $100. In the allocation decision, their hypothetical allocation would be implemented. If a participant's ranking information is randomly chosen, the charity they ranked highest would receive $100. This provides an efficient way to make incentive-compatible surveys even when questions are eliciting subjective answers. [19] This method is easily generalizable to other surveys, such as pre-election polling, where donations to political campaigns can be tied to survey responses.

To elicit political preferences, participants were asked to directly state their political orientation

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[19]In the pilot calibration survey, the questions were not incentivized. Nevertheless, the results closely mirrored those of the new survey. Despite this similarity, the lack of a clear understanding of when incentive-compatible questions are necessary suggests that it is always safer to provide participants with incentives to ensure truthful responses.

and complete a seven-question survey designed to place them on a two-dimensional political spectrum. These questions used a 5-point Likert scale, with responses ranging from 5 (leaning liberal) to 1 (leaning conservative). The answers were used to generate various specifications of political orientation based on average score and score percentile. Participants' stated political orientation generally aligned with their assigned political orientation, regardless of the specification.

D   Documentation

General Email Invite

```
Hello!


We at Aggies for Charitable Giving would like to invite you to participate in a
charity voting contest! On xx/xx/xx, an election will be held online to
decide which charity will receive a prize of $500. The best part is, you
can help these charities with no cost to you, all you have to do is vote!


If you would like to participate please click this link to create your
account and vote.


-Aggies for Charitable Giving
```

Invitation to Return

```
Hello (name)!


Thanks for participating in our charity voting contest. On xx/xx/xx,
another election will be held. Please come out again and support our
charity organizations.
```

Click here to return to our homepage where you can vote as well as see a full schedule of future voting contests.

-Aggies for Charitable Giving