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Notes on recent elections

When information is not enough for strategic voting☆

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ABSTRACT

Voters frequently have to decide between supporting their preferred candidate or choosing a less appealing but more viable alternative. Previous research argues that different aspects of political sophistication, but especially political information, permit citizens to navigate these strategic trade-offs. In this research note, we disentangle the effect of political information from the effect of cognitive capacity on strategic voting in an experimental study. We find that especially the combination of information and cognitive resources increases strategic voting if people have sufficient incentives to vote strategically. Thus, our findings suggest that a narrow focus on individual levels of information to facilitate strategic voting and improve democratic representation is incomplete.

Whether in primaries or general elections—voters often face trade-offs between their ideal preferences and other strategic considerations. For instance, insufficient support for a preferred candidate in single-member districts creates incentives to consider more viable alternatives (Fisher, 2004), and scholars have examined whether different types of voters deviate from their first choice in these contexts (Eggers and Vivyan, 2020). Importantly, strategic voting requires detailed information about electoral rules and likely election outcomes—which should make it more prevalent among politically sophisticated voters (Niemi et al., 1992).

Previous research provides evidence that strategic voting is indeed more prevalent among educated and politically knowledgeable voters (Alvarez et al., 2006; Merolla and Stephenson, 2007; Lanoue and Bowler, 1992; Eggers and Vivyan, 2020). Yet, most of these studies rely on observational data and use broad measurements of political knowledge. Both are not ideal to understand causal preconditions for strategic voting. Education can be an important proxy for crucial pre-adult experiences, but its causal effect on political participation is difficult to identify (Kam and Palmer, 2008). Furthermore, standard knowledge batteries used in these studies often fail to capture people's procedural memory (Prior and Lupia, 2008). Finally, it can be challenging to extract individual incentives to cast a strategic voting from observational data (Eggers and Vivyan, 2020). Accordingly, given the somewhat limited measurement approaches in previous observational research, we lack clear evidence for the underlying causal mechanisms that facilitate strategic voting.

In this research note, we present a pre-registered experimental design that manipulates the incentives for a strategic vote and independently varies two dimensions of political sophistication—information and cognitive resources—to study their differential impact on strategic voting. Respondents participate in a mock election with three fictitious candidates. After reporting their own issue preferences, participants learn about their policy overlap with each candidate—along with results from pre-election polls. Importantly, every participant's ideal candidate is revealed to have the lowest chance to win the election—independent of their reported issue preferences. The set-up therefore creates comparable incentives for all participants to vote strategically and enhances them for a random subgroup with bonus payments. We then use uncertainty between polls to vary the level of information about likely election outcomes and a distraction task to reduce the availability of cognitive resources.

We find that information and cognitive resources improve strategic voting if individuals have sufficient incentives to act strategically. In the experiment, respondents who received more reliable polling information and experienced no constraints on their cognitive resources are 11%-pts. more likely to cast a strategic vote, but only if they had clear incentives to do so. By experimentally isolating and testing different underlying mechanisms, we show that information and cognitive resources have to go hand in hand to help voters find optimal electoral outcomes. Citizens have to hold precise information, have the cognitive resources to process them, and recognize the potential payoffs of acting

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strategically. We replicate this pattern in an observational analysis of the British Election Study 2015 — strengthening the external validity of these findings.

The findings contribute to the literature on strategic voting and political behaviour. Our experimental evidence extends previous research on the role of political sophistication by adding important detail regarding the underlying causal mechanisms. It pins down the causal effect of information and cognitive resources on strategic voting under the necessary condition of voters' incentives to act strategically. Our research also makes a methodological contribution. It offers an experimental framework that allows scholars to differentiate aspects that are usually subsumed by "political competence", which can find application in other experimental research designs that evaluate its effects on political behaviour.

1. Strategic voting and political competence

The incorporation of strategic considerations is common in elections across various institutional settings such as Germany (Herrmann, 2014), Austria (Nyhuis and Plescia, 2018), or Japan (Kawai and Watanabe, 2013). Furthermore, single-member majoritarian systems such as the United Kingdom provide ample incentives to deviate from sincere votes (Fisher, 2004; Alvarez et al., 2006). For instance, if three candidates run for a single seat in parliament, supporters of the least viable candidate may be better off voting for one of the two leading contenders. Similar incentives emerge in two-party systems when it comes to candidate selection during primaries. In the United States, for example, primary voters have been shown to support candidates due to their "electability" in the general election (e.g., Rickershauser and Aldrich, 2007).

The finding that voters incorporate strategic considerations is reassuring from a normative perspective. By anticipating likely election results, citizens can align their voting behaviour or support for candidates with the most preferred policy outcome among the feasible options, rather than wasting their vote on hopeless alternatives. This strategic voting behaviour serves as a mechanism to enhance the representation of voters' opinions in the democratic processes and helps to coordinate majorities for feasible policy outcomes. At the same time, there is a potential downside of strategic voting, since it may inflate perceived support for certain policy platforms.

Considering its resulting relevance for democratic responsiveness, several studies have examined how campaign-related factors influence strategic voting. They found that it is more common if elections are close (Alvarez and Nagler, 2000), more polarized (Daoust and Bol, 2020), and if accurate polling information is available (Lago et al., 2015). Particularly crucial for equality in democratic representation, however, are sources of individual-level heterogeneity in strategic voting. After all, these differences allow some people to make more "effective" use of their votes than others. While not explicitly focusing on strategic voting itself, previous scholars such as Althaus (1998) similarly suggested that unequal distribution of political knowledge distorts aggregate preferences—therefore jeopardizing equal representation.

Regarding individual-level sources of heterogeneity in strategic voting, citizens who strongly identify with a certain party are more likely to vote for their party regardless of strategic considerations (e.g., Lanoue and Bowler, 1992). At the same time, higher levels of political knowledge and interest (Alvarez et al., 2006), or age and income (Eggers and Vivyan, 2020; Eggers et al., 2022) are associated with an increased likelihood to vote strategically. However, although there is a considerable literature examining strategic voting using experiments (e.g., Blais et al., 2011; Meffert and Gschwend, 2011; Loewen et al., 2015), causal evidence differentiating individual-level preconditions for strategic voting is surprisingly scant. In sum, while previous research explored the role of political competence, the underlying mechanisms that enable people to recognize when and how to deviate from their ideal preferences remain largely obscure.

2. Information and cognitive resources

A better understanding of the individual preconditions for strategic voting requires a comprehensive conceptualization of political competence that incorporates factors beyond pure levels of information. In a similar vein, scholars have previously suggested that conventional conceptions of political knowledge have little practical relevance for people's actual decision-making (e.g., Lupia, 2006). Indeed, public opinion scholars' focus on factual information as "quality opinion" without considering the availability of cognitive resources and the underlying incentives generated a disconnect with the broader literature on democratic representation (Druckman, 2014). This is somewhat surprising since influential early theories of political sophistication identified three crucial components of competence: information, motivation, and ability (Luskin, 1990)

This holistic conceptualization of political sophistication is highly relevant for strategic voting models. While the motivation for strategic voting is created by the expected difference in policy outcomes to deviate from one's preferred candidate, information and capabilities are key preconditions of a strategic vote. Voters require information to form precise expectations about support for different candidates, but they also need the cognitive ability and resources to process the information. In other words, sophisticated voters not only need exposure to relevant information but also sufficient cognitive resources to be able to engage in elaborate processing.

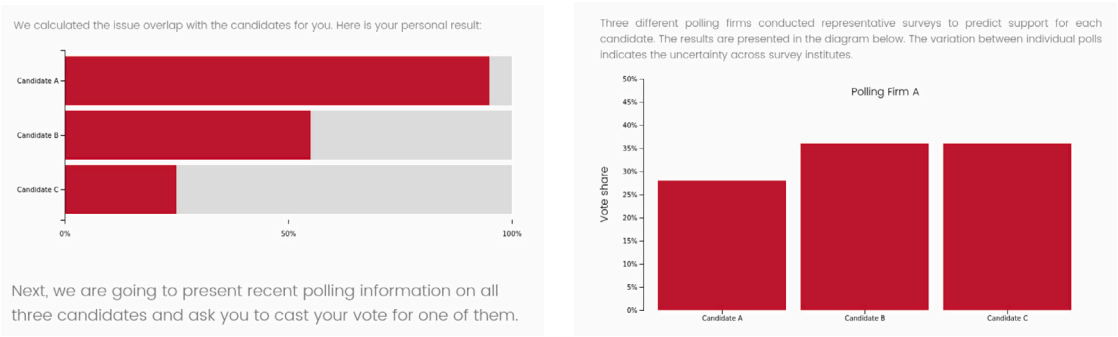
There are notable examples of research on the quality of people's political decision-making that incorporates such a broader conceptualization of competence. Kuklinski et al. (2001), to name but one, argued that the nature of decision environments can improve people's ability to engage in policy trade-offs—for example by providing relevant information to make reasonable decisions. Furthermore, Prior and Lupia (2008) emphasized the importance of people's procedural memory and learning skills for political competence in the context of an experimental framework that varied participants' incentives (through monetary payments) and cognitive resources (through time constraints). Previous research on strategic voting, however, has largely neglected this crucial differentiation between people's information and cognitive resources.

Building on Luskin (1990), we argue that these factors should play distinct roles in facilitating the incorporation of strategic considerations. In addition to information about likely election outcomes, people need cognitive resources to make strategic inferences (c.f., Loewen et al., 2015). Thus, we hypothesize that voters who have sufficient incentives to take into account strategic considerations will benefit from increased levels of information and the availability of cognitive resources. The two factors should therefore have potentially multiplicative effects conditional on individual incentives. To test this hypothesis, in the following we develop an experiment that allows us to (1) independently manipulate incentives for strategic voting, and the two factors of political sophistication (political information and cognitive resources) and (2) examine the conditional effects of information and cognitive resources.

3. Experimental study

3.1. Research design

A major challenge in studying strategic voting with experimental designs is the creation of scenarios where participants with widely diverging preferences have comparable incentives to deviate from their ideal choice. For instance, if all participants are presented with the exact same election task (i.e., same candidates, positions, etc.), then strategic voting is largely obfuscated by partisanship. On the other hand, ridding the experiment of party labels entirely risks creating such artificial scenarios that respondents feel no inherent commitment to stick with their ideal preference in the first place.



(a) Issue Overlap (b) Poll Results

Fig. 1. Experimental manipulation of issue overlap and polling results.

We overcome this trade-off with an experimental design that invokes similar strategic incentives for all participants while incorporating their true political preferences. Subjects participate in a mock election between three candidates *A*, *B*, and *C*—leaving out explicit party labels. In order to mimic real preferences over candidates, participants are first asked about their opinion on a range of highly salient political issues as part of a *voting advice application* (e.g., Garzia and Marschall, 2012).[1] Next, participants are informed how much their own issue preferences overlap with each candidate's policy positions. Unbeknown to participants, this issue overlap is the same for all participants and independent of their reported attitudes. Candidate *A* has almost perfect issue overlap (95%), Candidate *B* still agrees with a majority of the issues (55%), and Candidate *C* is the least favourable with only 25% issue overlap (see Fig. 1a). Thus, for any possible individual attitude configuration, participants share the same preference ordering of candidates ($A > B > C$)—and this ordering is imbued with participants' true preferences.

Next, we introduce strategic considerations for participants to deviate from their ideal preferences by providing the results from recent polls indicating the candidates' relative support—and thereby invoking expectations about likely election outcomes.[2] Again, this polling information is held constant across participants. According to the polls, Candidate *A* (the most preferred candidate) has the lowest chance of winning the election, while Candidate *B* and *C* are tied for the lead (See Fig. 1b). Given the preference order based on issue overlap, a strategic vote in this scenario would imply supporting the Candidate *B*. In order to illustrate the amount of polling uncertainty, we present results from three separate polls as part of an animated visualization embedded in the survey. In other words, the variation across polls provides participants with a direct and intuitive illustration of the degree of uncertainty around their predictions. After reviewing the polls, participants are asked to cast their vote for one of the candidates.

In sum, this experimental design generates strategic incentives that are comparable across participants despite their disparate political attitudes. In other words, by allowing participants to "fill the candidates with meaning" based on their own unique set of preferences, we create a hypothetical election scenario that appears relevant to each participant, while at the same time remaining comparable in terms of its strategic incentives.[3] The experimental design establishes a respondent pool consisting of individuals classified as "at risk" of engaging in strategic voting, thereby enabling the investigation of whether they actually manifest such behaviour. However, it is crucial to acknowledge the lack of a counterfactual condition in which respondents face no incentives for strategic voting. This limitation hinders the analysis of whether individuals who deviate from their sincere vote choice do so solely in response to strategic incentives, or if other factors are at play.

Using this framework, we employ a $2 \times 2 \times 2$ between-subject design to manipulate incentives and the two dimensions of political sophistication. We randomly assign respondents to one of the eight conditions.[4] We induce high and low *incentives* to vote strategically by offering monetary payoffs depending on the electoral outcome (see also Blais et al., 2014; Van der Straeten et al., 2010). In the high incentive condition, participants are informed that they will receive additional payments if the winning candidate in the election aligns with their own issue positions by more than 50%.[5] This incentivizes respondents to support Candidate B, as the average poll results indicate that only Candidate B and Candidate C have a chance of winning the election, and only Candidate B has more than 50% issue overlap. Following the experiment, the pay-offs are awarded whenever respondents choose Candidate B, assuming that each respondent plays a pivotal role in determining the outcome between Candidate B and Candidate C.[6]

[1] See supplementary material (SM) A for a more detailed overview of the experimental design. Our selection of salient issues relies on the most important topics in UK politics identified in Hanretty et al. (2020). The analysis for the main-study is pre-registered and can be accessed here: https://doi.org/10.17605/OSF.IO/KD5XB

[2] Research shows that providing respondents with poll results changes their expectations and beliefs about a hypothetical political campaign (Stoetzer et al., 2022).

[3] Open-ended comments at the end of our survey provide some anecdotal evidence that respondents took the vote advice application task seriously. For example, they asked: "I would like to know which candidates were linked to A, B and C. Please can you let me know" or "I would love to know which party the hypothetical A B and C were from! Terrified I might be a closet Tory".

[4] SM IV shows that randomization assured balance with respect to covariates that are considered relevant to strategic voting, like political knowledge (Alvarez et al., 2006), age and income (Eggers and Vivyan, 2020) and left–right ideology (Bol et al., 2023).

[5] Participants received an initial amount of £1 for completing the short survey (<10 min) and a potential bonus of £0.25 in the high incentive condition. While the nominal value of the bonus payment is relatively small, it nevertheless represented a potential 25% increase in the total payoff. In general, research suggests that for many experiments using monetary incentives, varying the size of the bonus payments has little to no effect on the results (see Camerer and Hogarth, 1999, for a review). Thus, even relatively small incentives (as compared to no payments) can be effective to affect behaviour—a finding that is confirmed by our experimental results as well as the manipulation checks further discussed below.

[6] The research design includes minimal deception, as the protocol does not include information that every respondent's vote is always pivotal in deciding the winner of the election for either candidate A and B. We made sure that this does not harm participants (in designing the experiment so that every participant got a chance to get the maximal payoff conditional on their own choices) and not to corrupt the subject pool for future research (by not explaining in the debriefing that their vote was automatically pivotal).

Within the context of our experiment, there are therefore two sources that may motivate strategic voting. On the one hand, the people's policy preferences and candidate overlap generates a baseline incentive to vote for a viable candidate (B) to prevent the least preferred option (C). However, given the experimental context, there are no direct tangible consequences of the election outcome (besides the knowledge that the least preferred candidate might win). That is why we incorporate additional monetary rewards to raise the stakes of our mock election. In sum, we create an experimental framework that maps our participants' diverse issue preferences onto similar baseline incentives to vote strategically, which are further raised through monetary rewards depending on the experimental condition. Outside the experiment, the manipulation of incentives is comparable to scenarios where the election result offers varying tangible payoffs for voters.

The first political sophistication treatment addresses the amount of *information* available to generate expectations about likely election outcomes. Specifically, we induce uncertainty about each candidate's electoral prospects by increasing the between-poll variation in pre-election candidate support (holding constant average support for each candidate). The experimentally manipulated aspect of political information, hence, is the uncertainty about likely electoral results. Increasing variation between our polls makes it less clear to participants how large the difference in vote margins will be between Candidate A and B. Thus, in the high information condition, there is more certainty about the fact that Candidate A does not have a realistic chance to win the election and is therefore not viable. At the same time, reducing between-poll variation makes it more evident that the expected vote margin between Candidate B and C is very small, which implies a larger probability for the participant to cast a pivotal vote. Together, the reduction of uncertainty should therefore increase the likelihood of strategic voting.

The second political sophistication treatment focuses on *cognitive resources* to process available information. In psychology, the amount of cognitive resources required to perform a given task is called the "cognitive load" (Goldstein, 2011, 87). In our experiment, we increase our respondents' cognitive load during the voting task by asking them to simultaneously count the number of times they blink while completing the survey (see Fitzsimons and Williams, 2000; Ülkümen et al., 2008, for similar designs). Cognitive load is theoretically distinct from the other relevant concepts such as political knowledge, competence, or strategic capacity—which certainly play a role for strategic voting as well. The main reason why we focus on cognitive load is that in contrast to these other *traits*, it can be directly manipulated in the context of an experiment. In order to be able to make valid causal inferences, we need to focus on aspects that are actually malleable in the context of random assignment. While our treatment therefore focuses on inducing cognitive load, we are ultimately inhibiting more trait based factors (e.g., knowledge, competence, and strategic capacity) to improve decision-making. In contrast to previous studies that examined people's ability to make strategic inferences as a broad trait to be measured (Loewen et al., 2015), we employ independent experimental treatments to disentangle the effect of cognitive resources and the role of information.

We conducted a set of manipulation checks for all three treatments. SM V presents results that show that the treatments work. First, providing respondents with more accurate polling information reduces the perceived likelihood of Candidate A (most preferred candidate) winning the election. Second, participants who received the cognitive load treatment performed worse on a logic puzzle task.[7] Finally, participants in the high incentive condition were more likely to mention the candidate's realistic chance of winning the election rather than their alignment with their own positions as the reason for their vote choice.

We fielded our study in the United Kingdom, thus ensuring that participants are familiar with single-member district elections involving more than two viable candidates. We present results from two quota samples of UK residents: a pilot study with 1000 respondents and a pre-registered main study with 2500 respondents, both of which were collected through the online survey platform Prolific (on Jan 29 and Sep 24, 2020, respectively).[8]

3.2. Results

One of the advantages of our experimental framework is that it produces comparable incentives to vote strategically for all respondents (i.e., supporting Candidate *B* instead of Candidate *A*) while at the same time ensuring that each participant's political preferences are truly represented. SM A.III displays the proportion of respondents who strategically deviate from their first preference in this way across treatment conditions for our pilot and the pre-registered main study. In the low incentive condition, the proportion of strategic votes ranges between 19% and 28% (22% to 35% in the pilot study). In the high incentive condition, the proportion of strategic votes ranges between 26% and 34% (22% to 39% in the pilot study). While the share of strategic voting is continuously increasing with more available cognitive resources and information among participants in the high incentive condition, the pattern is not as clear for the low incentive condition. This points in the direction that individual incentives are a necessary precondition for the two dimensions of political sophistication to impact the likelihood of strategic voting.

In order to directly test our hypothesis, we present conditional treatment effects of information and cognitive resources for different levels of incentives in Fig. 2.[9] In the high incentive condition, the probability to vote strategically is increased by 11 percentage points in the high information/cognitive resources condition (17 percentage points in the pilot study). We do not find a replicable significant increase in strategic voting for information and cognitive resources alone among participants in the high incentive condition. While there are significant increases in strategic voting with more precise information in the pilot study, these results do not replicate in the main study. The results further reveal that information and cognitive resources combined has a higher effect on strategic voting than the two aspects alone (See SM A.VI). Particularly, the conjunction of the information and cognitive resources leads to high strategic voting rates. Furthermore, the results show that none of the treatments have a significant and replicable effect on strategic voting in the low incentive condition.[10] In other words, only respondents who received additional incentives to take into account likely election outcomes—and who are not constrained in terms of their cognitive load—make use of the available information and are more likely to vote strategically.

In sum, our experimental results support the hypothesis that information and cognitive resources are two important dimensions to facilitate strategic voting. Voters need to hold the cognitive resources to consider the implications of likely election outcomes in order to make full use of the available information and determine when to deviate from their preferred candidate. Importantly, by replicating the results of our pilot in a pre-registered main study, we provide clear and converging evidence regarding the differential role of the two components of political sophistication as predictors of strategic voting.

[7] In the pilot study, we tested an alternative treatment to induce cognitive load using a distraction story. However, this treatment did not have an impact on logic puzzle performance (see SM V).

[8] Descriptive statistics for both samples are presented in SM A.II.

[9] See SM A.VI for full regression tables and marginal effect calculations.

[10] Only the pilot study provides some evidence for a positive effect of information on the probability to vote strategically in the low incentive condition.

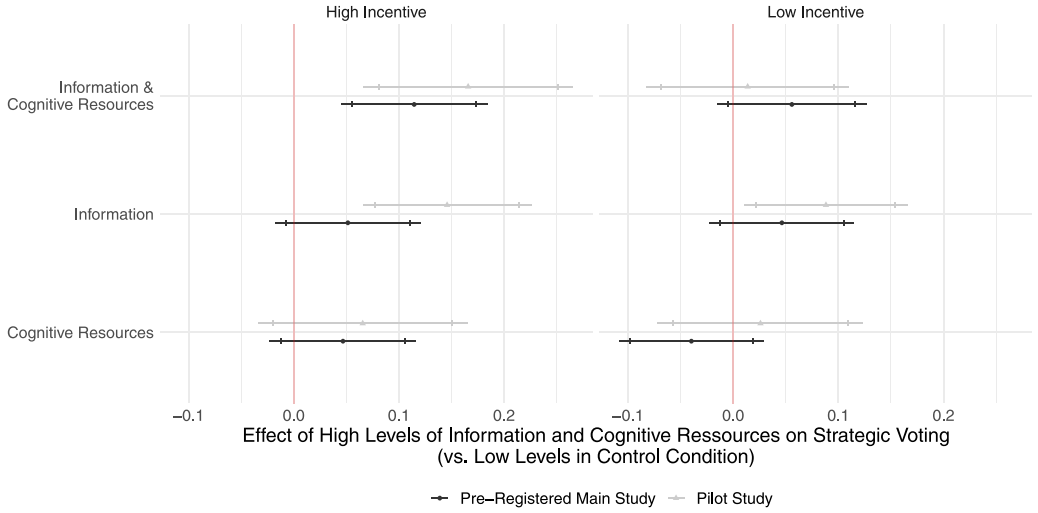


Fig. 2. Results from experimental study. Conditional treatment effects of information and cognitive resources on strategic voting (including 95% and 90% confidence intervals).

3.3. External validity in an observational analysis

In order to answer whether our experimental results transfer to real-world elections, we leverage data from the 2015 British Election Study. Instead of randomly manipulating preconditions for strategic voting, we use various proxies to measure individual levels of information and cognitive resources. SM B describes that we can replicate the pattern in an observational analysis. The effects are comparable, suggesting that the conjunction of information and cognitive resources results in an increased likelihood of strategic voting between 3%-pts and 12%-pts among survey respondents with clear incentives for a strategic vote.

4. Conclusion

Why is it important to understand specific mechanisms that facilitate strategic voting? Public opinion researchers lamented that voters need to be more knowledgeable for representative democracy to work (e.g., Althaus, 1998). To the extent that there are systematic differences in the tendency to incorporate strategic considerations in elections, some people are able to make more "effective" use of their votes than others. Exploring these individual preconditions in more detail is, therefore, crucial to improving the quality of democratic representation.

Our results indicate that an exclusive focus on education or political knowledge in this context is—at the very least—incomplete. Focusing on strategic voting, in particular, we find that information alone is not sufficient to help citizens achieve better electoral outcomes. In fact, only if voters have sufficient incentives and are without distractions will they make use of the available information to make strategic decisions. As such, our work has direct implications. To the extent that people's cognitive resources to take into account strategic considerations are associated with their social background, these systematic differences are bound to jeopardize equal representation of political interests—above and beyond inequalities due to lack of knowledge. In order to minimize the divergence between aggregate public preferences and actual policy outcomes, increasing people's level of information alone is therefore no panacea. Instead, voters need to be convinced that the election outcome itself has a tangible impact on their lives and they must have sufficient cognitive resources available to process the relevant information.

More broadly, we offer an experimental framework that provides opportunities for future research to study voting behaviour and political competence. Our design is unique in that it relies on a voting advice framework to create election scenarios that are directly comparable between participants with widely diverging preferences. Furthermore, the combination of monetary incentives, distractor tasks, and variations in polling uncertainty allows researchers to independently manipulate distinct components of political competence and strategic voting that prior work has been unable to differentiate empirically.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data and replication materialcode is available on Harvard Dataverse: https://doi.org/10.7910/DVN/KXSWH6.

Appendix A. Supplementary material

Supplementary material related to this article can be found online at https://doi.org/10.1016/j.electstud.2023.102692.

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