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BEHAVIORAL VOTERS IN A DECENTRALIZED DEMOCRACY

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Behavioral Voters in a Decentralized Democracy *

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Abstract

Voters in decentralized democracies make voting decisions in multiple elections across tiers, often on the same day. Theories of decentralization implicitly presume that they have sufficient cognitive capacity to follow separate decision-making processes for different elections. Exploiting variation in the timing of Indian national and state elections, we find that voters' cognitive costs are significantly higher when they need to vote for multiple elections at the same time than otherwise. We estimate the importance of cognitive constraints shaping voters' decision-making processes, final decisions, and electoral outcomes across tiers. Consistent with the predictions of a model of behaviorally constrained voters, we show that simultaneous elections increase political parties' salience among voters and increase straight-ticket voting, without significantly affecting turnout. Consequently, the likelihood of the same political party winning constituencies in both tiers increases by 21.6%. We rule out alternative mechanisms that might explain this result. Our findings suggest that, in the presence of behavioral voters, election design can shape the experience of decentralization in democracies. *JEL* Codes: D02, D72, D91, H77.

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1 Introduction

A growing body of literature argues that voters in elections suffer from various cognitive limitations and behavioral biases relative to the rational voter benchmark. They vote expressively as opposed to strategically (Pons and Tricaud 2018), prefer to vote for the winning candidate (Callander 2007), suffer from self-control problems (Bisin, Lizzeri, and Yariv 2015), are overconfident (Ortoleva and Snowberg 2015) and inattentive to information (Matějka and Tabellini 2017), among other shortcomings. The presence of such "behavioral" voters can lead to outcomes that depart from the predictions of canonical rational voter models.[1] Understandably, Ortoleva and Snowberg (2015) point out that exploring the behavioral underpinnings of voter behavior, therefore, "promises greater understanding of the design and consequences of political institutions."

All of the analyses highlighted above, however, consider individuals voting in a single election. But almost all democracies today, however, are decentralized, i.e., they have multiple elections for different tiers of governments. In the United States, for example, a voter typically votes for several electoral positions–the President and the Vice President, Congress and Senate representatives, state governors and legislatures, and local representatives in municipalities.[2] Voting in multiple elections can be cognitively more demanding. Voters have to follow separate decision-making processes for each election, focussing on the information that is relevant for each tier. Moreover, rational voters can have complicated strategies when voting in multiple elections, if preferences are correlated across tiers (Ahn and Oliveros 2012). Theories of decentralization, while highlighting the economic foundations of decentralization (Lockwood 2002, Tiebout 1956) and its desirability for improved governance (Besley and Coate 2003, Bardhan and Mookherjee 2000, Besley and Case 1995), implicitly presume that voters are sufficiently sophisticated to make decisions in this manner. If voters cannot behave in this way, possibly due to

[1] Expressive voting, for example, can lead to higher likelihood of a less preferred candidate winning (Pons and Tricaud 2018), while overconfidence can explain political polarization (Ortoleva and Snowberg 2015).

[2] They also vote for judicial positions and individual ballot items (such as increasing the minimum wage).

the presence of cognitive limitations, this could greatly affect the degree of *effective* or *de-facto* decentralization in the economy, and the benefits that result from it.[3]

In this paper we attempt to empirically establish the presence of cognitively constrained voters and its implications for voting behavior and electoral outcomes in a decentralized democracy. We use the *timing* of elections for different tiers, i.e., whether held simultaneously or sequentially, to detect the presence of cognitively constrained voters and estimate its effects.[4] It is well established that undertaking two tasks in parallel without one affecting the other is cognitively demanding (e.g., Bednar, Chen, Liu, and Page 2012, Patel, Lamar, and Bhatt 2014, Fischer and Plessow 2015). Therefore, the cognitive demand on the voter is presumably even higher when they make the voting choices across different elections at the same time. It is interesting to note in this context, that several democracies today either already organize their elections across tiers on the same day (such as the US, Brazil, Sweden, and Indonesia, for example) or are planning to move to such a regime (India and South Africa). Several papers that document the consequence of holding elections concurrently for electoral outcomes in the US and Europe.[5] In all such contexts, elections, when held simultaneously, experience large changes in turnout compared to when these elections are held at different times. In Presidential elections in the US, for example, turnout is about 15-20 percentage points higher than in midterm elections. The context that we examine, on the other hand, does not involve significant changes in turnout (or voter composition) during simultaneous elections, allowing us to focus on voter behavior and its consequences.

To guide our empirical analysis, we set up a model of voting choice in simultaneous and sequential elections, where voters face a cognitive cost for having separate decision-

[3]Though academic work conceptually distinguishes fiscal from political decentralization, democracies today are jointly decentralized. Decentralization along both dimensions could enable allocative efficiency—matching public goods provision to the preferences of the local sub-populations—and increase accountability—holding elected representatives in check (Brennan and Buchanan 1980, Oates 1985).

[4]Voting behavior in simultaneous elections can change for rational reasons as well. For example, if the preferences in regard to candidates are non-separable across elections (or tiers), then the simultaneity of elections would affect optimal voting strategy (Ahn and Oliveros 2012). We rule out such possibilities in our context.

[5]We discuss this literature below.

making processes for different tiers. The cost of these decision-making processes is higher during simultaneous elections. For simplicity, we assume that the cost is zero for sequential elections and infinitely high for simultaneous elections.[6] Taking inspiration from Bordalo, Gennaioli, and Shleifer (2012, 2013, 2015), we model the decision-making process of a voter based on the salient characteristics of the candidates. While voters may care both about the party affiliation of a candidate and their personal characteristics, the party is potentially a more salient feature during elections. A voter chooses whether to focus on only the party affiliations of the candidates or both parties and personal characteristics. The choice is consequential since information about personal characteristics is costly. Information about party, being the salient feature of candidates, is assumed to be easily available to voters. We distinguish between these two decision-making processes as different rationales for voting and we examine how simultaneity of elections affects the choice of rationales across elections in the presence of cognitive costs.

Our model delivers three key predictions. First, parties become more salient in voters' decision-making process under simultaneous elections. Consequently, the fraction of voters who engage in straight-ticket voting (choosing the same party in two elections) increases under simultaneous elections. Finally, the probability that the same party wins both elections is higher when they are simultaneous compared to when they are held sequentially.[7]

We empirically test the predictions of the model with data on Indian national and state elections data, by comparing them when the elections are held simultaneously and when they are held sequentially. Indian data has natural variation in national and state election cycles that generate synchronized and non-synchronized elections both cross-sectionally as well as over the years for the same state.[8] Moreover, both national and state elections in India are high stakes, and, hence, have similar levels of turnout when held separately

[6]Our main results remain intact when we relax this assumption.

[7]In the model, all voters vote. We, therefore, shut off the possibility that changes in electoral outcome are mediated through changes in turnout.

[8]This is unlike in Western democracies, where elections are held following a more regular cycle. Therefore, there is not much variation in the synchronization status of elections for a given region.

as well as simultaneously. Indian elections, following the parliamentary system, elect representatives to the national parliament from parliamentary constituencies (PCs henceforth) and elect representatives to the state legislature from state assembly constituencies (ACs henceforth) within a state.[9] A PC contains several ACs and a single PC subsumes any AC.[10] For identification, we examine the same PC over time and compare outcomes between simultaneous elections and *proximate* elections, i.e., elections that occur within 180 days of each other. By making the comparison between simultaneous and sequential but proximate elections, we rule out proximity as a potential explanation and attempt to approach a causal interpretation of our findings.

We compile a unique dataset of post-poll national and state election surveys conducted between 1996 and 2018 to examine voter behavior and we assemble election results during 1977-2018 to examine electoral outcomes. We first establish that simultaneous elections result in significant cognitive constraints: survey respondents are *twice* as likely (relative to the sample mean) to report "do not know" for a question about the main issue in the election when elections are simultaneous than otherwise.[11] Consistent with the first prediction from our model, we then show that voters are 7.4 percentage points (or 18%) more likely to say that the party of a candidate is their most important consideration when voting in simultaneous elections, compared to sequential ones. In line with the second prediction, we find that voters are 7 percentage points (or 13%) more likely to report that they voted for the same party across the national and state elections when they were held simultaneously. Additionally, we find that this increase in straight-ticket voting (i.e., voting for the same party across elections) is uniform across gender, age, and education categories, suggesting that less-informed voters do not drive this effect.

[9] There are 543 PCs and about 4,300 ACs in all of India.

[10] We pair a national election with state elections that happened after it and before the next national election. Our results do not change if we pair a national election with the closest state election, either before or after.

[11] The inability of voters to highlight the main issues during simultaneous elections could either be because of their cognitive limitation as regards processing a given level of information for two elections separately, or due to the presence of excessive information due to a more intense level of campaigning. Banerjee, Enevoldsen, Pande, and Walton (2020) discuss why little information is available in Indian elections and we provide some evidence to rule this out in the paper. In either case, it points toward cognitive constraints faced by the voters.

Consistent with the final prediction of the model, we find that simultaneous elections increase the probability that the same political party wins a seat at the parliament and the state assembly by 0.093, which is 21.6% of the base probability of 0.42.[12] The result is robust to a host of tests, such as introducing PC and AC level time trends, removing from the sample state elections due to strategic dissolution of the government, performing randomized inference and other robustness checks. Finally, state and regional parties, rather than national parties, drive the synchronization effect.[13] Exploring heterogeneity by incumbency, we find that the state government incumbent parties experience an increase in the probability of winning both tiers when elections are held simultaneously, while national government incumbents do not.

While our empirical results conform to the model's predictions, we consider several other rational or more conventional mechanisms that can explain the greater degree of straight-ticket voting as well as the higher likelihood of the same party winning both tiers during simultaneous elections. However, our evidence is not in favor of any of these mechanisms. Here we highlight two such mechanisms that might be considered important. First, we rule out that changes in the level and composition of turnout drive our findings. While state elections do not experience any change in turnout due to simultaneity, turnout in national elections increases by 5 percentage points when elections are held simultaneously rather than sequentially. Using post-poll survey data, we show that while voters are indeed more likely to say that they have voted during simultaneous elections, the increase in probability is uniform across gender, age and location characteristics.[14] Additionally, we show that the constituencies that experience large increases in turnout during simultaneous elections do not drive our results. Second, we consider the possibility that voters' preferences in regard to parties may change in the period be-

[12] For robustness, we vary the time gap between the elections in any given pair of national and state elections from 150 days to 720 days. Our estimates range from 0.15 (for 150 days) to 0.082 (for 270 days). The estimates are not statistically significantly different from each other.

[13] Indian political parties are heterogeneous and vary in regard to the geographic region in which they operate. In such a multi-party system, there are a few national parties, and several regional or state-level political parties.

[14] We find suggestive evidence that simultaneous elections marginally increase the turnout of less-educated voters. However, the estimated coefficients are statistically insignificant.

tween two sequentially held elections, either due to new information becoming available to the voters or the realization of some preference shock. This may lead to a reduction in the correlation between voting decisions as well as electoral outcomes across elections, leading to our findings. However, our estimated effect remains remarkably stable over an extensive range of time windows: doubling the time window, for example, keeps the estimate virtually identical. This implies that changes in voters' preferences can not be the main reason for the increased probability of same party winning across two tiers.[15]

Our paper contributes to the literature, described above, on the presence of behavioral constraints and biases in voters and their consequences for voting decisions and electoral outcomes. We add to this discussion by showing that voters face a non-trivial cognitive cost when voting in multiple elections across tiers, especially when they are held on the same day, which significantly affects their voting behavior and brings about political uniformity across tiers. Our work, therefore, highlights the importance of election design in influencing democracries' experience of decentralization. Consequently, our paper also speaks to the literature on decentralization that explores how various political economy incentives shape the nature of decentralization. This literature primarily focuses on the decisions of governments and politicians in shaping the outcome of decentralization (Mookherjee 2015, Boffa, Piolatto, and Ponzetto 2016, Gadenne 2017, Ventura 2019, Kresch 2020). We, on the other hand, highlight the importance of voter behavior in this context.

Our paper also relates to the literature on choice experiments that shows (in a range of economic environments) that individuals tend to over-diversify when making choices simultaneously, as opposed to sequentially (Simonson 1990, Read and Loewenstein 1995, Read, Antonides, Van den Ouden, and Trienekens 2001). We show that in an electoral context, in contrast, voters *reduce* the diversity of their choices during simultaneous elections; they are more likely to choose the same party across elections when they are held

[15] Section 6 discusses in detail these mechanisms along with five additional mechanisms; they are non-separable preferences of voters; across tier anti-incumbency; coattail effects; prospects of better economic outcomes with synchronized representation and campaigning by political parties.

simultaneously.

We contribute to the growing literature on salience in voting decisions, especially in less developed democratic economies (e.g., Banerjee, Enevoldsen, Pande, and Walton 2020, Larreguy, Marshall, and Snyder 2018), which find that information about candidates or parties can shift voters' decisions by potentially making those feature more salient in their mind. We show that simultaneous elections can also induce a shift in what voters consider to be salient, in favor of party affiliations of candidates.

Last, the work also contributes to the literature on concurrent elections. This literature has examined the effects of concurrent elections on turnout (Garmann 2016, Cantoni and Gazze 2019, Rallings and Thrasher 2005, Schmid 2015) and consequently on electoral outcomes (de Benedictis-Kessner 2018, Bracco and Revelli 2018, Halberstam and Montagnes 2015), primarily in the European and US contexts. We contribute to this literature by showing that synchronization of two equally high stakes elections involves significant consequences for voter behavior—an important yet less explored consequence of synchronization—with first-order effects in electoral outcomes.

We organize the rest of the paper in the following way: Section 2 presents the model. Section 3 contains the institutional details of elections in India and describes the data. Section 4 presents our empirical strategy and Section 5 discusses the results. Section 6 rules out alternate mechanisms and Section 7 concludes.

2 Model

In this section, we propose a model of voting in the context of simultaneous and sequential elections to formally assess how behavioral constraints can affect voting decisions. The model also generates testable predictions about how simultaneous elections can shape voter behavior and consequently, electoral outcomes.

Consider an election E with two candidates A and B. There is a continuum of voters of mass $1 + \sigma$; each voter is denoted by $i \in [0, 1 + \sigma]$. σ is a random variable uniformly distributed over $[0, 0.5]$. The mass of voters is therefore random. We interpret this as uncertainty generated by turnout in elections. Since all voters vote in our model, one can consider a larger electorate of mass 1.5 and the mass of voters who turnout is given by $1+\sigma$, which can be uncertain due to many factors such as idiosyncratic cost of voting, better "get out and vote" campaigning by a candidate and so on. We assume that voters $i \in (1, 1+\sigma]$ always vote for A. For the analysis below we therefore focus on the decision-making of voters $i \in [0,1]$ to compute the mass of votes received by the candidates from this set of voters. At the end we add the mass σ to the vote of A to calculate the vote share of candidates in the election.[16]

Each candidate $c \in \{A, B\}$ is characterized by her party identity P^c and her personal characteristics θ^c. P^c can be one of two possible parties: 1 or 2, i.e., $P^c \in \{1,2\}$. The personal characteristics parameter θ^c is potentially a high-dimensional object, comprising of the candidate's caste, religion, family details, income and wealth, and various other aspects of her character such as attitude toward co-ethnic voters, charisma, and gift of the gab. We assume that $\theta^c \in \Theta$. Voter i's utility from candidate c getting elected is given by

$$u_i(P^c, \theta^c; \lambda_i) \;=\; \lambda_i u_1(P^c) + (1-\lambda_i) u_2(\theta^c) \tag{1}$$

where $\lambda_i \in [0,1]$ is the relative importance of party in voter i's preference, and u_1 and u_2 are continuous functions defined over the two features of the candidate, respectively. A higher value of λ_i, therefore, implies that voter i cares more about the party affiliation of the candidate than about her personal characteristics. Since parties play an important role in the election campaigning in India, we think that party is a salient feature of candidates. Therefore, it is reasonable to assume that voters would treat the party affiliation of candidates separately in their preference vis-à-vis the candidates' other characteristics. The distribution of λ_i is given by $F(\cdot)$, with pdf $f(\lambda_i) > 0$ for all $\lambda_i \in [0,1]$. We assume, without loss of generality, that $u_1(P^A) > u_1(P^B)$, i.e., if all voters cared only about

[16] In absence of the noise, vote shares of candidates would be deterministic and therefore, the probability of a win would be either zero or one. Introducing noise in the mass of voters makes the probability of a win non-degenerate, without complicating the model too much. The model of probabilistic voting adopts a similar approach to ensure that probability of win is non-degenerate (Persson and Tabellini 2002).

parties, then all voters would have voted for candidate A.[17] Further, each candidate's θ^c is drawn independently from a distribution over Θ. The distribution, in turn, induces a distribution over $u_2(\theta^c)$. To analyze voting decisions we only need to know the induced distribution over $u_2(\theta^c)$, and therefore we can directly make assumptions based on that. We assume that $u_2(\theta^c)$ is uniformly distributed. Specifically, the distribution is given by

$$u_2(\theta^c) \sim U[\underline{u}_2, \bar{u}_2] \quad \text{where} \quad \underline{u}_2 = \min_{\theta^c \in \Theta} u_2(\theta^c) \ \text{ and } \ \bar{u}_2 = \max_{\theta^c \in \Theta} u_2(\theta^c).$$ [18]

We assume that $u_1(P^A) - u_1(P^B) < (\bar{u}_2 - \underline{u}_2)$. The assumption implies that it is possible for voters to vote for candidate B if they know about θ^c.

Now, we assume that voters get to know about candidates' party affiliation, i.e., about P^A and P^B, without any cost. However, θ^A and θ^B are initially unknown to all voters. They can acquire information at some cost.[19] Due to the salient nature of parties in elections, the information about candidates' party affiliation is much more easily available to voters, as opposed to information about their personal characteristics, for which the voters would have to attend rallies, or consume media or be engaged with the political activities in the local area more generally. We assume that each voter can pay $\kappa > 0$ and know θ^A and θ^B perfectly.

2.1 Decision Making in a Single Election

In a world of costless information acquisition, a voter would vote for candidate A if

$$u_i(P^A, \theta^A; \lambda_i) \geq u_i(P^B, \theta^B; \lambda_i)$$

However, given that information about θ^c is costly to acquire, each voter makes a

[17] This is a simplifying assumption. Our results would not change if we assume that for some voters $u_1(P^A) > u_1(P^B)$, while for others $u_1(P^A) < u_1(P^B)$.

[18] $-\infty < \underline{u}_2 < \bar{u}_2 < \infty$ by assumption.

[19] This is again a simplifying assumption. We can have a model where knowing party affiliation of candidates is also costly. However, as long as the cost is lower than the cost of knowing about the personal characteristics of the candidates, our results will hold.

decision about whether to acquire that information. Consequently, the decision-making process of the voter will also be contingent upon the acquisition of this information. To see this, consider the case where the voter chooses not to acquire the information. In that case she would have to make a decision based on the party identity of the candidates alone, as she would have the same expected value of θ^c for both candidates. We say that in such a scenario the voter adopts a *rationale* for voting which is based on the party identities of the candidates alone. Even though in her true preference, the voter places weight λ_i on the party, she makes her voting decision by effectively putting all of the weight on the party. In other words, party becomes more salient during the voter's decision-making. In contrast, if she chooses to acquire the information about θ^c, then she has all information necessary to check if equation (1) holds. In that case, therefore, she adopts a rationale for voting that weighs $u_1(P^c)$ and $u_2(\theta^c)$ according to her true preferences.

Formally, we define a rationale for voting by voter i by $m_i \in [0, 1]$ where m_i is the weight put on $u_1(P^c)$ when deciding whom to vote for. The voter i, therefore, votes for A using rationale m_i if

$$u_i(P^A, \theta^A; m_i) \geq u_i(P^B, \theta^B; m_i) \tag{2}$$

$$\text{where} \qquad u_i(P^c, \theta^c; m_i) \;=\; m_i u_1(P^c) + (1 - m_i) u_2(\theta^c).$$

Importantly, m_i can be different from λ_i. However, the choice of m_i by the voter is not arbitrary: it is shaped by various informational (i.e., rational) and behavioral constraints faced by the voters. In this section of the model information acquisition shapes the choice of m_i. Below we discuss how cognitive costs in the form of a behavioral constraint can also shape the choice of m_i in the presence of multiple elections. In the presence of costly information acquisition, we see that the voter will choose one of two rationales: $m_i = 1$ if she does not acquire information about θ^c and $m_i = \lambda_i$ if she does.[20] We refer to the

[20]The starkness of the choice of rationale is driven by our assumption about information acquisition. If

first kind of rationale as the "party" rationale, and the second one as the "preference" rationale.

The "party" rationale makes the candidates' party affiliation more salient relative to the true preference of the voter. This is related to the salience theory of choice proposed by Bordalo et al. (2012, 2013, 2015). The salience theory proposes that individuals' preferences may get distorted by information on the salient features of objects and it is used to examine the various implications of this phenomenon for consumer choice, asset prices, and judicial decisions. Our model applies this concept to voting decisions and shows how certain informational and behavioral constraints can lead to higher salience of parties in voters' preferences, and, consequently, can influence voting decisions and electoral outcomes.

If voter i adopts rationale $m_i = 1$ then she would vote for A as $u_1(P^A) > u_1(P^B)$, by assumption. Hence, in that case her expected utility is given by

$$\mathbb{E}u_i(m_i = 1) \;=\; \lambda_i u_1(P^A) + (1-\lambda_i)\mathbb{E}[u_2(\theta^c)] \;=\; \lambda_i u_1(P^A) + (1-\lambda_i)\frac{\bar{u}_2 + \underline{u}_2}{2}$$

Now, we ask: when would the voter pay for the information cost $\kappa > 0$ and adopt the "preference" rationale? We propose that she would adopt "preference" rationale if and only if two conditions hold: (i) she anticipates that doing so could *potentially* make her change her vote to a vote for the other candidate and (ii) she anticipates that doing so could give her potentially a higher payoff than choosing the "party" rationale. The first condition is motivated by the fact that the voter votes for candidate A with the "party" rationale. Therefore, if she thinks that paying for the information cost could not possibly change her vote, then she should not rationally pay for it. Additionally, the second condition says that even if the first condition holds for a voter, if her utility (net of the information cost) under the "preference" rationale could not possibly be higher than her

the information acquisition was continuous in nature, then the possible rationales would also have been continuous. For example, one could assume that voters get noisy but informative signals about θ^c and they could pay more to get a more precise signal. In that case, the choice of m_i would be continuous. However, the nature of analysis would remain the same.

expected utility from adopting the "party" rationale, then the voter should also not pay for the information. A voter i would satisfy the first condition if the following holds:

$$\lambda_i u_1(P^B) + (1-\lambda_i)\bar{u}_2 \geq \lambda_i u_1(P^A) + (1-\lambda_i)\underline{u}_2$$

where the LHS gives the best possible payoff that the voter could hope to get from voting for candidate B and the RHS is the worst possible payoff from voting for A. If the above condition does not hold then paying for the information cost would not change her vote. The above condition implies

$$(1-\lambda_i)(\bar{u}_2 - \underline{u}_2) - \lambda_i(u_1(P^A) - u_1(P^B)) \geq 0 \tag{3}$$

Hence, there exists a $\lambda^* \in (0,1)$ such that for all voters with $\lambda_i > \lambda^*$, the equation (3) would not hold and therefore, they would adopt the "party" rationale. The second condition implies that

$$\lambda_i u_1(P^B) + (1-\lambda_i)\bar{u}_2 - \kappa \geq \mathbb{E}u_i(m_i = 1)$$

where the LHS gives the highest payoff to a voter if she adopts the "preference" rationale and votes for candidate B and the RHS is the expected payoff from adopting the "party" rationale. Rearranging the terms in the equation above we get

$$(1-\lambda_i)\frac{\bar{u}_2 - \underline{u}_2}{2} - \lambda_i(u_1(P^A) - u_1(P^B)) \geq \kappa \tag{4}$$

As before, there exists $\bar{\lambda} \in (0,1)$ such that for all voters with $\lambda_i > \bar{\lambda}$ the equation (4) is not satisfied and hence they would adopt the "party" rationale. Moreover, comparing equations (3) and (4) we get that $\bar{\lambda} < \lambda^*$. Hence, voters with $\lambda_i \leq \bar{\lambda}$ satisfy both the conditions for paying the information cost and therefore, acquire the information about θ^c for both candidates and use the "preference" rationale.

Our analysis shows that there are two distinct reasons why a voter may abstain from acquiring information and instead use the "party" rationale for voting. Voters with $\lambda_i > \lambda^*$ care so much about the party that they know they would never vote for candidate B even in the best case scenario. Therefore, they do not pay for the information. Voter with $\lambda_i \in (\bar{\lambda}, \lambda^*]$ could potentially change their vote to B after acquiring the information. However, given the cost of information acquisition, it is not worthwhile for them to pay for it even assuming the best case scenario. Therefore, the mass of "party" rationale voters is given by $(1 - F(\bar{\lambda}))$. All of these voters vote for candidate A. Also, there will be some voters who use the "preference" rationale and vote for candidate A. The calculation of the share of such voters is shown in Appendix Section 4. Finally, we bring back the random mass σ of voters who always vote for A. Adding all the terms, we get the mass of votes that candidate A receives in a single election:

$$
\begin{aligned}
V^A &= (1 - F(\bar{\lambda})) + \frac{F(\bar{\lambda})}{2}\left[1 + \frac{\mathbb{E}\left[\frac{\lambda_i}{1-\lambda_i} \mid \lambda_i \leq \bar{\lambda}\right](u_1(P^A) - u_1(P^B))}{(\bar{u}_2 - \underline{u}_2)}\right] + \sigma \\
&= v^A + \sigma, \text{ say.}
\end{aligned} \tag{5}
$$

Therefore, candidate A's probability of win is given by

$$
\pi^A = \mathbb{P}\left[\frac{v^A + \sigma}{1 + \sigma} \geq \frac{1}{2}\right] = \mathbb{P}\left[\sigma \geq 1 - 2v^A\right] = 1 - 2\left[1 - 2v^A\right] = (4v^A - 1)
$$

2.2 Decision Making in Sequential Elections

Suppose that there are now two elections, E and $E^{'}$ which happen sequentially. Each of the elections is identical to the single election we studied above. In each election, there are two candidates who belong to two different parties and the voters' total utility from participating in the two elections is the sum of the utilities from each of the elections separately. We denote the candidates in election E by A and B, and in $E^{'}$ by $A^{'}$ and $B^{'}$. The pair of two parties is identical across the two elections. For simplicity, we assume that candidates A and $A^{'}$ belong to party 1 and candidates B and $B^{'}$ belong to party 2.

For election E the mass of voters is $1+\sigma$, and for $E^{'}$ it is $1+\sigma^{'}$, where σ and $\sigma^{'}$ are independently drawn from the same distribution stated above.

The only difference between the two elections is the cost of information acquisition. They are given by κ and $\kappa^{'}$ in elections E and $E^{'}$, respectively. Moreover, we assume that $\kappa^{'} > \kappa > 0$. Therefore, information is harder to get in $E^{'}$ compared to E. This could happen because E and $E^{'}$ correspond to different tiers of government. Depending on the context, candidates in tier $E^{'}$ could either be farther removed from the voters (i.e., are higher tier representatives), or are less in the focus of the media, making it harder for the voters to gather information on them.

Moreover, since the voters have to make choices in two elections now, it can be cognitively demanding for them to have two different rationales across elections. Additionally, the cognitive cost would be a function of the time gap between the two elections. If the two elections are held far apart from each other then it may be easier for the voters to have two different rationales. If, on the other hand, they happen *simultaneously*, then the cognitive cost may be very high, as the voter would have to make separate decisions at the same time. For simplicity, we assume that the cognitive cost of having two different rationales in two elections is zero when elections are sequential (irrespective of the time gap between them), and is prohibitively high when elections are simultaneous. Therefore, during simultaneous elections, the voters are behaviorally constrained to vote using a uniform rationale across elections. The predictions of the model would not change if we instead assume that the cognitive cost of using different rationales is always positive, but is higher for simultaneous elections.

Given the discussion above, in sequential elections the voters treat each election separately and make their decisions independently in each election. Therefore, the analysis of each election would be identical to that described above. Therefore, we get that in the two elections the mass of voters who adopt "party" rationale is given by $(1 - F(\bar{\lambda}(\kappa)))$ and $(1 - F(\bar{\lambda}(\kappa^{'})))$, where $\bar{\lambda}(\kappa)$ and $\bar{\lambda}(\kappa^{'})$ are the values of $\bar{\lambda}$ (from Section 2.1) for information cost κ and $\kappa^{'}$, respectively.

Since $\kappa^{'} > \kappa$, it is evident that $\bar{\lambda}(\kappa^{'}) < \bar{\lambda}(\kappa)$ and hence $(1 - F(\bar{\lambda}(\kappa^{'}))) > (1 - F(\bar{\lambda}(\kappa)))$. Moreover, voters with $\lambda_i \geq \bar{\lambda}(\kappa)$ vote using the same "party" rationale in *both* elections. Similarly, voters with $\lambda_i \leq \bar{\lambda}(\kappa^{'})$ vote using the rationale $m_i = \lambda_i$ in both elections. Finally, voters with $\lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$ vote using the rationale $m_i = \lambda_i$ in election E, but switch to the "party" rationale in election $E^{'}$.

2.3 Decision Making in Simultaneous Elections

We now consider the two elections E and $E^{'}$ occurring simultaneously. Apart from the timing, the two elections are the same as before. Given the discussion about the cognitive constraint of voters in the previous section, we know that the voters who otherwise would have chosen different rationales in E and $E^{'}$ will now be constrained to choose the same rationale across both elections. From our analysis in Section 2.2 we know that voters with $\lambda_i \in [\bar{\lambda}(\kappa), 1]$ choose the "party" rationale in both elections when they are held sequentially. Therefore, if the elections happen simultaneously then these voters should not have any problem as their rationales were compatible across elections to begin with. The same is true for voters with $\lambda_i \in [0, \bar{\lambda}(\kappa^{'})]$, who would choose the "preference" rationale in both elections, either held sequentially or simultaneously. However, a voter with $\lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$ would have preferred to choose the "preference" rationale in election E and the "party" rationale in election $E^{'}$. However, due to the cognitive constraints, they will have to choose one rationale for both elections, when they are held simultaneously.

We therefore first analyze the *choice of rationale* of these voters. Suppose that such a voter chooses the "party" rationale for both elections. In this way she saves on the information cost κ in election E, but potentially at the cost of sacrificing some payoff from voting for candidate B in that election. The net payoff loss for voter i is then given by

$$(1 - \lambda_i)\frac{\bar{u}_2 - \underline{u}_2}{2} - \lambda_i(u_1(P^A) - u_1(P^B)) - \kappa \geq 0.$$

On the other hand, if the voter chooses the "preference" rationale for both elections then she pays an additional information cost $\kappa^{'}$ in election $E^{'}$. Her voting decision, however, remains the same in both elections. To see why, notice that she would still optimally vote for candidate A in election $E^{'}$, even though she pays the information cost. Therefore, her net payoff loss is given by $\kappa^{'}$. Hence, the voter would optimally choose the "party" rationale for both elections if

$$(1-\lambda_i)\frac{\bar{u}_2-\underline{u}_2}{2}-\lambda_i(u_1(P^A)-u_1(P^B))\leq\kappa+\kappa^{'} \tag{6}$$

However, for all $\lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$, we have

$$(1-\lambda_i)\frac{\bar{u}_2-\underline{u}_2}{2}-\lambda_i(u_1(P^A)-u_1(P^B))\leq\kappa^{'}$$

Hence, the condition (6) is satisfied for all voters with $\lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$. This implies that all voters who face a choice of rationale choose in favor of the "party rationale" for both elections. This gives us our first result:

Result 1 *In an election with a cheaper information cost, the salience of the candidates' party, on average, is higher in voters' preferences when that election is held simultaneously held with another election. There is no change in the salience of the party among voters in elections with a higher information cost.*

The proofs of all the results are in Appendix Section 5. Result 1 highlights that when behaviorally constrained voters are faced with multiple elections this increases the salience of parties in their voting decisions. We now examine the implications of the heightened salience of parties among voters for their voting decisions. For this we focus on the phenomenon of split-ticket voting, i.e., voters voting for two different parties in the two elections. Result 2, below, shows how simultaneous elections affect the extent of split-ticket voting:

Result 2 *Fraction of voters engaged in split-ticket voting goes do wn in simultaneous elections as compared to sequential ones.*

Finally, we examine the consequence of a change in the salience of parties for electoral outcomes. The following result examines the likelihood of synchronized representation, i.e., the same party winning both elections, under simultaneous and sequential elections:

Result 3 *The probability that party 1 wins both elections is higher when elections are simultaneous as opposed to sequential.*

Result 3 focuses on the party 1 because we assumed that when voters use the "party" rationale, they always vote for that party. If we allow some voters to vote for the other party with the "party" rationale, then following the same logic as set out above we would get that the probability that party 2 wins both elections would also be higher under simultaneous elections. The probability of different parties winning the two elections, therefore, will be reduced in this case.

The following section lays out the contextual details and data before we go on to test these predictions in the Indian context.

3 Background and Data

3.1 Institutional Details

We empirically test the predictions of the model in India, the world's largest democracy with a robust decentralized system in place. India follows a parliamentary system of governance with a first-past-the-post electoral system. The national or "general" elections in India occur in 543 single-member PCs. Similar to the national level, in each state, the state or "assembly" elections occur in single-member ACs that elects Members of the Legislative Assembly (MLAs) to the state assembly. The number of ACs varies across the states of India; in aggregate, there are about 4300 ACs across all states of India.

Each AC, by design, is always subsumed within one PC. On average, across all years in our data, there are about seven ACs within each PC[21]. The number of PCs and ACs

[21] In 2019, the average number of voters in each PC was about 1.6 million, while for each AC it was about 238,000.

and their boundaries is decided by the Delimitation Commission of India. We focus on national and state elections in the period 1977-2018, as India did not have any sequential elections in its first few decades of elections.

The term for both the central and state governments is five years. A general election (GE) takes place at the national level and an assembly election (AE) takes place in a state every five years, unless there is a premature dissolution of the national parliament or the state assembly. For both general and assembly elections, the Election Commission of India (ECI, henceforth) has the sole authority to decide the exact schedule of voting across constituencies[22].

3.2 Contextual Relevance

India is an apt setting to examine our question for several reasons. First, we show that turnout remains largely unaffected during simultaneous elections in India, unlike in other contexts. Both national and state elections in India are high-stakes elections. There is no obvious hierarchy of prominence in regard to these elections, from the point of view of voters. This allows us to relate changes in voter behavior more directly to effects on electoral outcomes. Moreover, India has a natural variation in national and state election cycles, which generates simultaneous and sequential elections for the same state over the years. We use these variations to identify the effect of synchronization on electoral outcomes. Finally, the current federal government of India has proposed a move to hold simultaneous elections where all the state elections will occur on the same day, all at once, along with the national election, as is done in many other democracies such as the US, and Brazil.[23] Our findings therefore will have direct relevance as regards the implications of such a policy change.

[22] Appendix Section 1 details the election procedures that are followed by the ECI, both for simultaneous and sequential elections in India. We show that apart from the timing of elections, there are no material differences in the election process.

[23] See https://tinyurl.com/yxfev85f. Proposals to hold simultaneous elections across tiers are present in other parts of the world as well. The EU, for example, is debating whether national elections of the EU member countries should be held together with the European Parliamentary elections (Basevi 2013).

3.3 Compilation and Construction of Main Variables

The primary source of data for Indian elections is the ECI. The ECI reports for each national and state election give of the total votes for each candidate contested from a given constituency, the party affiliations of the candidates, the number of nominations filed, the size of the electorate, the overall turnout, the number of polling stations and the date of the election. We use the publicly available repository of this information, which is cleaned and assembled by the Trivedi Center for Political Data (Bhogale et al. 2019). We augment this data with the exact dates of polls across all state and national elections in India from the Centre for Monitoring the Indian Economy (CMIE).

We map each AC to its PC for all elections conducted between 1977 and 2018, using data assembled by Jensenius (2015) and the delimitation commission report of 2002 , which redrew the constituency boundaries for elections from May 2008 onwards.[24] By augmenting Jensenius (2015), we map each AC to its PC for all elections conducted between 1977 and 2018.

Our geographic unit of analysis is an AC (paired to the PC under which it falls). Therefore, we define our primary explanatory variable – synchronization status of elections – at the level of an AC-PC pair, for each general election cycle. The synchronization status takes a value of one if the national and state elections for an AC-PC pair happen on the same day, and a value of zero otherwise.[25] Our primary dependent variable is an indicator variable that takes a value of one if the same political party wins both the AC and its corresponding PC in the two elections, and a value of zero otherwise.

In addition to the election data, we compile the post-poll election survey data from Lokniti, at the Center for the Study of Developing Societies, India. The Lokniti surveys give us detailed information about voter attitudes, preferences, policy priorities, and vot-

[24]The recommendations for the 1973 delimitation were made under the 1972 Delimitation Act and came into force in 1976, while the 2002 delimitation was made under the 2002 Delimitation Act and has been in effect since the May 2008 Karnataka state elections.

[25]An election pair is the closest state election after a national election and before the next one. We test for robustness by relaxing the ordering assumption and find our results to be robust to the alternate definition.

ing decisions just after the national and state elections (and before the results come out) for a representative sample of voters in a randomly selected sample of constituencies. We were able to access the relevant sections of the national as well as state election survey data for all the rounds since the survey began in 1996 till 2018. A detailed description of this dataset is available in Appendix Section 2. We compile the survey datasets and merge them with our election data. We use this data to examine the underlying patterns of voter decision making in India.

3.4 Summary Statistics

Far from being a marginal occurrence in our data, simultaneous elections form a considerable part of our observed data in India (Table A.1). At the peak in 1991, 34% of the PCs in India had simultaneous elections, accounting for about 35% of the national electorate size of 500 million.[26] Additionally, the trend for simultaneous elections is not linear – simultaneous elections are not monotonically less frequent or more frequent over time, during our sample period.

Table 1 provides a general overview of electoral characteristics for all state assembly elections (Panel A), all national elections (Panel B), and the pooled post-poll survey data for India (Panel C).[27] In state elections, the average number of candidates per constituency is 10 (Panel A). In national elections, the number rises marginally to 13 per constituency (Panel B).[28] Both elections have an average turnout of about 58-59% and a 9% average win margin. The effective number of parties (ENOP)[29] in each contest is about three. The electorate size in a PC is just short of 1 million. Each AC on average has about one-sixth of the PC's electorate. Therefore, apart from their sizes, the ACs and PC are quite similar on average in their electoral environments, in terms of turnout,

[26]We drop the national election of 1984 (and the corresponding state elections) from our sample. The then Prime Minister of India, Indira Gandhi was assassinated right before the national election, leading to large increase in sympathy votes in favor of her party, the Indian National Congress, across both the national and state elections.

[27]Appendix Table A.2 presents the results for the 180-days sample.

[28]Of the average of 10 (13) candidates, five are political party candidates in state (national) elections.

[29]Effective number of parties is computed as the inverse of the sum of squares of vote shares for each party.

number of political party candidates, win margin and ENOP. In our data we observe 488 PCs and 3,795 ACs in each national election cycle that have at least one sequential and one simultaneous election across all years in our data.

In our post-poll survey data, we observe repeated cross-sections of the voters across a randomly chosen sample of constituencies in each wave. We create a PC-level panel from the data by only considering the PCs that are sampled in multiple waves of these surveys. Panel C of Table 1 shows that 47% of the survey respondents are women, and the average respondent age is 42 (with the range between 18 and 99). 37% of the survey respondents have high school or above qualification, and 30% belong to socially marginalized (Scheduled Castes / Scheduled Tribes) communities. Finally, 78% of the respondents are religiously Hindu, and 75% of the respondents are from rural areas of India. These numbers are broadly representative of the time-series average population characteristics in India. On the whole, we observe 35,613 survey respondents from 15 states, 90 PCs, and 396 ACs where we have at least one simultaneous and one sequential election.

4 Empirical Strategy

4.1 Identification

Our identification strategy relies on exploiting the natural variation in the electoral cycles of the state and the national governments that led to changes in the synchronization status of elections. There are two sources of variation in the data. First, electoral cycles are different for different states. Only some states are up for elections in the year of a national election, and can potentially be held simultaneously, giving us across-state variation in synchronization. Moreover, the central government, as well as some state governments, fail to complete their full terms in office at various points in our sample period. The shorter terms of office result in changes to the synchronization status of elections for the same AC-PC pair.[30] Such changes give us within-state variation in synchronization over time.

In our estimation we compare outcomes within a PC over time. We use changes in the status of synchronization of elections for the same PC across national election years to estimate the treatment effect. In this approach, we only consider the states that ever experienced such changes in the treatment status during our period of study. There are 21 such states.[31] Figure 1 shows the general and assembly election years for the state of Uttar Pradesh. Initially, the GE and AE happened in the same year for the state. However, over time, elections occurred a year or more apart from each other. Under the standard approach, we compare outcomes for the same AC-PC pair across years when the elections were simultaneously held and when they were not.

However, this comparison does not take into account that not all sequential elections are the same. For the sequential elections, the time gap between them can range from being a few months to a few years. Parties may strategize, allocate resources and choose candidates very differently when faced with elections in quick successions, as opposed to facing elections that are far apart from each other. Therefore, sequential elections that are *proximate* may be different from those that are not. Moreover, they may share some common features with simultaneous elections as the parties and governments face similar conditions when elections happen on the same day. Hence, the synchronization effect under the above-mentioned approach would subsume the "proximity effect" as well.

We address the issue by restricting the time gap between national and state elections to 180 days when they are sequentially held. Therefore, we compare the same constituency over time and compare periods when the two elections occurred on the same day (simultaneous) to periods when they occurred proximately, i.e., within one to 180 days of each other (sequential).[32] We therefore argue that for a given constituency, within the pool

[30]Synchronization status can change because of early dissolution of either the state government or the central government or both. Some of the dissolutions could be strategic in nature. We consider this possibility in our robustness exercise.

[31]In the remainder of states, elections were always non-synchronized in our sample period.

[32]We later show the robustness of our results to higher and lower cut-off days.

of elections that happened within 180 days of each other, any differences in outcomes between simultaneous and sequential elections result from voters having to vote in the two elections at the same time as opposed to at different points in time. The restriction of 180 days reduces the number of states to 10 in our sample, and these form the core sample for our empirical findings below.

4.2 Estimation Specification

We employ an analysis of both post-poll surveys (to shed light on behavioral differences), and aggregate constituency-level electoral data (to shed light on aggregate outcomes). In the survey data, our main regression specification to estimate voter behavior differences between simultaneous and sequential elections is as follows:

$$y_{i,p,s,t} = \gamma I(\text{Sync} = 1)_{s,t} + \beta' X_{i,p,s,t} + \mu_p + \mu_t + \epsilon_{i,p,s,t} \tag{7}$$

where y is the outcome variable of an individual i residing in the PC p and state s at a national election year t. $X_{i,p,s,t}$ includes a vector of controls such as age, gender, education, social category, religion, locality (uban or rural) and ownership of assets (four-wheeler, two-wheeler and TV). We include μ_p to account for unobserved differences across various PCs, and μ_t to capture any differences particular to each national election cycle, such as the presence of popular national leaders, or nationally important and politically salient events leading up to the elections that year. The standard errors are clustered at the level of state - GE year combinations, to account for the fact that simultaneous elections occur for a state in a given national election cycle.

The principal explanatory variable $I(\text{Sync} = 1)_{s,t}$ takes the value 1 if the state election in the state (s) paired to the national election year (t) was held simultaneously, and zero when held sequentially.[33] The coefficient γ identifies the difference in the outcome variable $y_{i,p,s,t}$ between simultaneous and sequential elections.

[33]We identify an election pair with the year of the national election, even though the state election may have happened in later years.

In the aggregate elections data, our main regression specification to estimate the effect of simultaneous elections on an outcome variable y follows closely the equation (7), and is as follows:

$$y_{a,p,s,t} = \gamma I(\text{Sync} = 1)_{s,t} + \beta' X_{a,p,s,t} + \mu_p + \mu_t + \epsilon_{a,p,s,t} \tag{8}$$

where y is the outcome variable at an AC (a) and PC (p), in state s at a national election year t. For example, $y = I(\text{Same Party} = 1)$, a dummy variable if the party elected to power in the election at an AC a, in a given PC p, is the same. Our dataset comprises election-pairs at the AC level. $X_{a,p,s,t}$ includes a vector of controls that consist of dummies for reservation status[34] for AC and PC and their interaction. The nature of our dataset is such that it is difficult to include additional controls that vary at the AC/PC level. However, as we discuss later, for a sub-sample, we use the data from SHRUG (Asher et al. 2019) to augment more controls, to check for the robustness of our estimates. The coefficient γ, for this outcome variable, identifies the change in the probability that the same political party wins both national and state electoral constituencies when elections are held simultaneously. As with the specification in equation (7), we include PC fixed effects (μ_p), national election (GE) year fixed effects (μ_t), and the standard errors clustered at the level of state - GE year combinations, to account for the fact that synchronization status is the same across all constituencies of a state in a given national election cycle. The observations are weighted by the size of the electorate for the AC, since the electorate numbers change over time.[35]

One concern with our empirical strategy could be that simultaneous and sequential elections happen at different points in time for the same PC which makes it difficult to attribute the effect to simultaneous elections alone. However as highlighted in the summary statistics, there is no linear time trend in simultaneously held elections; different states

[34]Both state and central government have electoral seats reserved for the historically disadvantaged Scheduled Caste and Scheduled Tribes, defined by law – in proportion to their population in the census. The number of reserved seats for the ACs and PCs are indicated and modified by an independent Delimitation Commission.

[35]The size of the electorate grew by 182% from 1977 to 2019.

had a simultaneous or sequential state election each with a different national election. As additional robustness tests, we include PC and AC level time-trends to account for any observable or unobservable differences between the same constituency over time.[36]

On a subsample of data, we show in Appendix Table A.3 balance statistics for a number of demographic characteristics of ACs and PCs using the same specification equation 8. We find minimal difference between the control and treatment, except for urban area, which is much larger in simultaneous election constituencies. We explore the robustness of our results to such differences later.

5 Results

5.1 Graphical Analysis

Before we turn to our main results, we present a descriptive characterization of our results using graphs of unconditional distributions of the main outcome variables of interest. Figure 2, Panel (a) plots the fraction of survey respondents in a PC that consider party as the most important feature for their voting decisions on the x-axis, against the average probability that the same party wins both the PC and the ACs subsumed within it. The two variables are strongly positively correlated, implying that party salience is positively associated with similar electoral outcomes across tiers. This suggests that the decision-making process of voters is an important factor shaping political decentralization. Panels (b), (c) and (d) present graphical evidence about how simultaneity of elections affects voters' decision-making process and subsequently, electoral outcomes. We plot the empirical cumulative distribution function of the three primary outcome variables by synchronization status, where "Sync = 1" refers to synchronized elections and "Sync = 0" refers to non-synchronized elections (held within 180 days of each other). Panel (b) shows that the distribution of the fraction of "party salient" voters (i.e., those that consider party to be the most important feature) moves to the right during simultaneous

[36] The time trends are calculated as the gap between the election year for a constituency and the year when we record the constituency for the first time in our dataset.

elections, implying that party salience increases substantially due to synchronization.

In Panel (c), we observe that the vote share gap of a party across tiers (i.e., the absolute difference in the share of votes received by a political party in the national and state elections) is considerably lower in simultaneous elections. This suggests that simultaneous elections experience greater straight-ticket voting, which is an implication of the higher salience of parties. Finally, Panel (d) shows that the probability that the same political party wins both the AC and the corresponding PC is significantly higher across the entire distribution when elections are held simultaneously compared to when they are held sequentially.[37] Clear shifts in the unconditional distributions during simultaneous elections provide a descriptive picture of the broad empirical message from our paper, that the timing of elections changes the cognitive process of voters' decision-making and the electoral outcomes. The sections below present the formal estimates of the relationships.

5.2 Presence of Cognitive Constraints

We first establish that voters face higher cognitive constraints during simultaneous elections. In the post-poll surveys, respondents were asked what they thought was the main issue around which the election was fought. We categorize the issues as national, state and other issues, depending on whether the items specified by the respondents come under the responsibility of the federal or state government, or both, respectively. Table 2 presents the findings. The fraction of respondents who said that they did not know what the main issue was increases by 24.1 percentage points (with a sample mean of 26.1%) during simultaneous elections, compared with sequential elections that occur within 180 days of each other. This suggests that there is a dramatic increase in the lack of clarity on the objectives that guide the decision-making process for voters in simultaneous elections. Naturally, the information set that voters need to consider during simultaneous elections is larger, and the costs of processing the information for two separate decisions

[37] Appendix Figure A.1 presents these observations for the full sample, i.e., comparing synchronized elections with all non-synchronized ones, and the patterns are similar.

is also higher. Both arguments point toward the presence of cognitive limits for voters. Moreover, we posit that if this is merely only differences in the information environment, respondents with greater cognitive capabilities (proxied by levels of education) must not exhibit such a pattern. Appendix Table A.4 reports the heterogenous effects of synchronized elections across age, gender and education categories of respondents. We find no heterogeneity along age and education suggesting that not knowing the main election issue is a widespread phenomenon, not restricted to any specific voter groups.[38] This provides suggestive evidence that the observed patterns during simultaneous elections are not only due to differences in the information environment, but also due to cognitive constraints on the decision-making process.

5.3 Salience of Parties in Voter Preferences

One of the key predictions of our model, Result 1, is that simultaneous elections result in an increase in the salience of parties relative to other more personal characteristics of candidates. To test Result 1, we use the following question from the post-poll survey data as our outcome variable: "People have different considerations while deciding whom to vote for. What mattered to you more while deciding whom to vote for in the recent election – party or candidate?" The options available for response were "party", "candidate", "caste", and "not sure". We estimate whether voters responded differently following an election that was held simultaneously compared to voters who were asked the same question after a sequential election.

Table 3 presents the findings. We find evidence of a considerable increase in the salience of parties during simultaneous elections: There is a 7.4 percentage point increase in the fraction of voters who say that a candidate's party affiliation was the most important consideration in the decision process during a simultaneous election, when compared with sequential ones. The mean response for "party" is 0.42. The estimated effect is about 18% of the sample mean. Moreover, the fraction of voters who mention "candidate",

[38] We find that the increase in the "do not know" response is smaller for women.

“caste", and “not sure" in response to the question is smaller. This suggests that the additional increase in the fraction of those who consider parties as being important is driven by those who switch from candidate and caste preferences, and those who are unsure about what considerations drives them to vote. We therefore verify Result 1.

5.4 Straight-ticket Voting

We now test Result 2 of the model, which predicts that simultaneous elections will result in an increase in straight-ticket voting. If a voter is successful in differentiating the decision-making processes for the two elections, then it may give rise to greater prevalence of split-ticket voting, something that may have a rational economic foundation (Chari et al. 1997). An increase in straight-ticket voting, on the other hand, would be consistent with an increase in cognitive constraints faced by the voter, as suggested by Result 2.

We test this using both aggregate data and the post-poll survey data. Table 4 presents the findings using aggregate data, and Table 5 presents the findings using the post-poll survey data. Table 4 presents the effect of simultaneous elections on the absolute gap in the vote share of political parties between the PC and AC, defined at the AC level (Columns 1–3), and the PC level (Column 4).[39] The regressions have party fixed effects, and therefore estimate the effect across all parties after removing party-specific differences in the outcome variable. We find a consistent decrease in the vote share gap for all political parties.[40] In Table 5, the outcome variable is an indicator that takes a value of one if the survey subject says that they voted for the same party in the last national and state elections, and zero otherwise. After controlling for age, education, gender, social groups, and metrics of asset ownership, we find that the voters are 7 percentage point more likely to report that they voted for the same party in the national and state elec-

[39]The dependent variable in Columns 1–3 is defined as $|v_{\{p,pp\}} - v_{\{a,pp\}}|$, where $v_{\{p,pp\}}$ is the vote share of party pp in PC p and $v_{\{a,pp\}}$ is the vote share of the same party in AC a that is subsumed within PC p. The dependent variable in Column 4 is defined as $|v_{\{p,pp\}} - \sum_a e_a v_{\{a,pp\}}|$, where e_a is the share of electorate in PC p located in AC a and the sum is over all ACs subsumed within p.

[40]Appendix Table A.5 presents these findings for the full sample, and the pattern is similar.

tions when they are held concurrently (Column (1)). The rise in straight-ticket voting is also consistent with the presence of coattail effects. However, coattail effects may be more likely to be driven by less sophisticated or less-informed voters. In columns 2–4 we interact the synchronization status with age, gender and education and find that all interactions are small and statistically insignificant. This shows that the fall in split-ticket voting is uniform across voters of all kinds, suggesting that it is not a consequence of coattail effects – an analysis we perform in Section 6.

Taken together, the evidence sheds a light on a consistent mechanism at play: voters suffer from a cognitive constraint when they vote simultaneously on multiple elections. Such a cognitive constraint forces them to shift their focus to a salient feature of candidates, namely their party affiliation, resulting in parties getting similar votes across both tiers of the legislature.

5.5 Synchronized Representation

So far, we have shown that voters' cognitive constraints affect their voting behavior. We now establish that this has first-order effects on electoral outcomes. This relates to the final implication of our model (Result 3): as a result of behavioral voters, the probability that the same political party wins both the AC and PC increases during synchronized elections. Table 6 presents the results.

Each column in Table 6 incrementally adds additional controls to the regression specification. We find that the average probability that the same party wins both the PC and AC is 0.43. The likelihood of the same party winning both the PC and AC increases by 9.3 percentage points (Column (3)), and this effect size is 21.6% of the sample mean. This effect is large, and statistically significant. Using the full sample of data, Appendix Table A.6 shows that the likelihood is higher at 15.9 percentage points (38.7% of the sample mean). Figure 3 presents a heatmap of the probability of winning both the AC and PC for the full sample. The pattern is striking and visually confirms the regression estimates. We find that across all regions of the country, the likelihood of synchronized representation increases during synchronized elections.[41]

Figure A.2 plots the coefficient estimates for various constructs of the time difference for the sequential election pairs.[42] The estimated coefficient remains by and large stable if we expand the time difference up to 720 days, and the confidence intervals overlap for the estimated coefficients. The point estimate is slightly higher for a shorter, 150-day time difference for sequential election pairs, although not statistically different from other time-windows. This suggests that the average likelihood of voters voting for the same political party when elections are sequential is unlikely to be a function of the time that has elapsed between the state and national elections, at least within the 720-day window.

Robustness: We test whether these results are robust to potential confounders and data sample considerations and report these in Appendix Table A.8. We introduce AC fixed effects to account for unobserved differences across ACs within a PC. We consider changes in voter composition or other unobserved temporal differences using PC and AC level time trends. In terms of data, we test whether the results are sensitive to merging two different delimitation samples in our data by dropping the post delimitation sample, excluding electorate size weights, including state elections within the 180 days before general elections and addressing strategic dissolution. In addition, we also test for inclusion of geo-spatial characteristics from the SHRUG database (Appendix Table A.9) and re-estimate standard errors with wild cluster bootstrap due to the relatively small number of clusters in our sample (Appendix Table A.10). In all of these alternate sample restrictions and specifications, our coefficient remains positive and statistically and meaningfully significant. Lastly, we perform randomization inference where we test whether our main results can be obtained when synchronization status is randomly varied across different elections. The simulation results (Appendix Figure A.4) confirm our belief that our point

[41] Appendix Figure A.3 presents the maps for the main sample used in Table 6, which is a subset of states where the sequential elections are within 180 days of each other. The patterns are similar.

[42] We report the coefficient estimates in Appendix Table A.7.

estimates are not a result of chance. In summary, we find our main estimation to be robust to all of these tests. We expand on the details in Appendix Section 3.

Heterogeneity by Party Type and Incumbency: We use the ECI's classification of national, state and unrecognized parties to classify all political parties into these types. We then test whether our effect is heterogeneous across parties of different types. Table 7 Panel A reports the results. We find that the state or regional parties, and unrecognized parties are more likely to win both the PC and AC in simultaneous elections. On the other hand, simultaneous elections do not have any effect on the national parties. The nature of political parties that gain from simultaneous elections suggests that voters may weigh regional and local preferences disproportionately when making choices during simultaneous elections.[43] Table 7 Panel B examines whether incumbent parties experience different synchronization effects compared to non-incumbent ones. We find that the the incumbent national government parties are no more likely to win both tiers during simultaneous elections. The incumbent state government party is most likely to gain from simultaneous elections.[44] The estimate suggests that simultaneous elections could potentially offset anti-incumbency, at least for state government incumbents.

6 Ruling Out Rational Mechanisms

In this section, we rule out alternate mechanisms that can potentially explain effect of synchronization of elections on electoral outcomes.

Economic Benefits from Synchronization: It could be desirable for voters to elect representatives from the same political party at both AC and PC level, especially if this

[43]National parties tend to campaign, especially during national elections, on a pan-Indian platform with its consistency in their promises, and ideological and social preferences. In some sense, a large national party does not have the luxury of customizing its goals and objectives for each state locally, or the dexterity to cater to a potentially heterogeneous set of requirements for different geographic regions of the country without being portrayed as being inconsistent by its rivals. The state and regional parties, being geographically restricted in their reach, in this case, get a relative advantage in being more relevant to local constituencies during national elections that are held simultaneously with state elections.

[44]We include the coalition partners in the government in our definitions of national and state government incumbent party.

yields significant economic benefits.[45] While such a rational preference need not be different across sequential and simultaneous elections, the benefit of synchronized representation may be higher following a synchronized election, since the representatives overlap for their entire tenure. Realizing this, voters may have a greater incentive to vote for the same party across elections when they are held simultaneously. Hence we explicitly test whether simultaneous elections lead to greater development activities in an AC subsequently.

For our analysis we measure economic activity in a number of ways. We examine the implications of simultaneous elections for agricultural output, area cropped, credit disbursement, private and public investment, and night light luminosity, which is a proxy of overall economic development (Asher and Novosad (2017)) as well as public goods, including electricity itself. While the night light luminosity data is sourced from the NOAA, the rest of the economic data comes from the CAPEX database from the Centre for Monitoring the Indian Economy. The CAPEX datasets are available at the district-year level. We therefore create a district-year level panel for all of these economic measures.[46] We compute the fraction of ACs within a district that had a simultaneous election the last time the state had an election, and use this as our main explanatory variable.[47] In a companion specification, we use the fraction of ACs that had synchronized representation as our explanatory variable, to test whether it is directly associated with positive economic outcomes. We control for district and year fixed effects and district level time trends.

Table 8 reports the results for these outcomes. Panel A estimates the impact of si-

[45]There is evidence that political alignment across governments can have positive effects with regard to allocation of public resources, as shown by Rao and Singh (2003) and Khemani (2003) in the case of India. Positive effect of political alignment has been found in other contexts as well (Solé-Ollé and Sorribas-Navarro (2008); Worthington and Dollery (1998); Grossman (1994); Levitt and Snyder Jr (1995)). In our context, we have alignment of not governments but *legislatures*. There is less evidence on effects of alignment of legislatures on policies or development outcomes.

[46]Investment project data, which is geo-located, and the night light luminosity data, can be compiled at the AC-year level as well. Our conclusions do not change if we use the AC-year panel for our analysis.

[47]Each AC is completely subsumed within a district, and therefore can be uniquely mapped to a district. Since either all ACs within a state have simultaneous elections or none, the fraction is either one or zero as well.

multaneous elections while Panel B estimates the effect of synchronized representation. Columns 1–5 of Panel A report the coefficients for agricultural production, cropped area (as a share of total area of district), credit disbursement per capita, and night light luminosity, respectively. We convert all of the outcome variables to standardized z-scores so that the coefficients across columns have a similar interpretation. All coefficients in Columns 1–5 are small in magnitude and are statistically insignificant. Three of the coefficients are negative, and two are positive. This suggests that simultaneous elections did not lead to any significant improvement in the policy implementation and development activity in the subsequent periods.[48] The coefficients in Panel B are all positive, and for gross cropped area and night light luminosity, the coefficients are significant at the 10% level. Therefore, there is suggestive evidence that synchronized representation across legislatures leads to some increase in economic activity in the districts. However, the associations are weak and not in congruence with the results in Panel A. Therefore, we do not find any systematic relationship between simultaneous elections and improvement in development outcomes, implying that an expectation of greater economic benefits can not explain effects on electoral outcomes.

Turnout: The other most obvious concern is that our results are driven by turnout changes and the consequent changes in voter composition. Average turnout in national and state elections is 0.63 and 0.68 respectively. Moreover, Appendix Table A.12 Column 1 reports that state elections do not experience any increase in turnout during synchronized elections. National elections, on the other hand, do experience an increase in turnout during simultaneous elections, of 4.9 percentage points (Column 2). While the magnitude of the increase is small, it is possible that this may be driving our results. We use the post-poll survey data to first test whether this increase in turnout correspond to significant changes in the composition of voters. Appendix Table A.14 reports in Column 1 the result of regressing simultaneous elections on the likelihood of survey respondents

[48] In Appendix Table A.13 we examine private and public investment separately, and find null effects for each of them.

saying that they have voted. Consistent with the election results, we find that respondents are more likely to vote during simultaneous elections.[49]

To test for compositional change, we then interact the I(Sync=1) dummy with various individual characteristics of the respondents. We find that the increase in reported turnout is uniform across age (Column 2), gender (Column 3), caste groups (Column 5) and local characteristics (Column 6). The interaction with indicators of lower education status (Column 4) is positive, though it is statistically insignificant. The main effect of simultaneous elections becomes small and statistically insignificant. This suggests that some of the increase in turnout could be driven by voters with a lower educational level.

To test whether this is important for our result, we first create an indicator for each PC that takes a value of one if the gap between its average turnout during simultaneous and sequential elections is higher than the 75^{th} percentile of the distribution of gaps, and zero otherwise. We then interact our synchronization dummy with this indicator of "high turnout change PC". Appendix Table A.15 Column 1 reports the results. We find that the interaction effect is negative and is imprecisely estimated. The main effect remains positive, large, and statistically significant. Using the 90^{th} percentile in the gap distribution as our threshold does not change our results. This indicates that changes in turnout cannot be the main driver of our results.

New Information and Change in Preference: Voters' preferences in regard to parties may change in the interval between the sequential elections, due to the arrival of new information, and preference shocks. This reduces the likelihood of the voter voting for the same party again. Such a possibility is absent in simultaneous elections, and hence could lead to our observed effect. However, if this is indeed the mechanism then, if we expand the time window between the pair of sequential elections, we should expect our estimated synchronization effect to increase. This is because as we widen the time

[49]The estimated increase is 3 percentage points, which is lower than what we get from aggregate turnout figures. However, the respondents are more likely to report that they have voted, relative to their actual turnout.

window for sequential elections, we allow a greater degree of information flow to change voters' preferences, and consequently, the likelihood of voting for the same party would be reduced further. However, as we have already shown in Figure A.2, the magnitude of our coefficient does not increase with a larger time gap. In fact, if we double the size of our window from 180 to 360 days, the estimate remains identical. Therefore, it is unlikely that we observe the synchronization effect because of a change in preferences.

Non-separable Preferences: Even if preferences remain stable, voters may rationally have different voting strategies when elections are simultaneous vis-à-vis when they are sequential, if their preferences in regard to the candidates for the two elections are defined in a *non-separable* way. In such cases, a voter's preference is defined in relation to bundles of candidates across elections and such elections are referred to as combinatorial elections (Ahn and Oliveros 2012). When elections are sequential, voters with non-separable preferences can decide their voting strategies in the later election by conditioning on the outcome of the earlier election. Such conditioning cannot happen when elections become simultaneous, resulting in changes in voting behavior and a consequent effect on the electoral outcomes.

This kind of conditional voting strategy may give rise to a synchronization effect. This would depend on whether voters prefer to have the same party win both tiers (i.e., prefer *aligned* representation) or not. If they do, then we should expect aligned representation to happen more often when elections are sequential, as then the voters would be able to condition their voting decisions on the outcome of the first election.[50] If, on the other hand, the voters prefer misaligned representation then aligned representation is more likely under simultaneous elections.

In the Indian context, Nellis (2016) finds that the probability of a political party win-

[50] In sequential elections, the outcome of the first election not only helps a voter condition her voting strategy in the second election, but also reveals information about the overall preference distribution of the electorate in general. Both of these forces lead to greater probability of the same party winning both elections. In simultaneous elections, a voter's probability of being pivotal in one election has an impact on the pivot probability of the second one. This reduces the likelihood that the party would win both elections.

ning an AC conditional on having won the PC differs between the two large national parties in India, the Bharatiya Janta Party (BJP, henceforth) and the Indian National Congress (INC, henceforth). The probability of the BJP winning a state election in an AC goes up when they win the corresponding PC in the previous (sequential) national election. For the INC it *goes down*. In order for non-separable preferences to explain our result, it therefore has to be the case that our results are stronger for the INC than for the BJP. Appendix Table A.16 tests this by estimating the effect of simultaneous elections on the BJP and the INC separately, and with all national parties together. The estimated coefficients are statistically insignificant in all three cases, and the point estimates are not meaningfully different between the BJP and the INC. We therefore discount the hypothesis of non-separable preferences explaining our result.

Across-Tier Anti-incumbency: Another plausible explanation of our result is a lack of *across-tier* anti-incumbency in simultaneous elections vis-à-vis sequential ones. The presence of anti-incumbency in Indian elections is a well-documented fact (Uppal 2009; Ravishankar 2009). Moreover, the anti-incumbency may spill over from national to state elections (Nellis 2016). The possibility of such a spill-over, naturally, is higher in sequential elections. Consequently, this effect reduces the probability that the same party wins both the AC and PC in sequential elections, thereby resulting in the estimated synchronization effect.

However, it is unlikely that this mechanism explains the result, given our specification. Firstly, a 180-day time gap is only 10% of the total tenure of a representative. In the first few months of a representative's tenure they are likely to be on their best behaviour, especially if they have the knowledge of an upcoming election.[51] Moreover, across-tier anti-incumbency is likely to strengthen as more time elapses between the two elections. Therefore, we should find a strong upward sloping trend in the coefficient as we increase the length of time that elapses between elections. Figure A.2 is again inconsistent with

[51] Ravishankar (2009), for example, shows that there is initially a "honeymoon period" for representatives of ruling parties. The cross-election spill-overs are in fact positive for the first half of the tenure.

this. We find that our estimated coefficient remains stable as we increased the time gap. This rules out across tier anti-incumbency as the main source of our effect.

Coattail and Reverse Coattail Effects: The synchronization effect may result from the "coattail effect", which is well documented in the academic literature, especially in the context of the US and Europe (Campbell and Sumners 1990; Golder 2006; Bracco and Revelli 2018). In this phenomenon a salient candidate in one election attracts votes for candidates to her party in the other election that is held simultaneously. Typically, the context in which the coattail effect has been studied involves elections that have clear hierarchy in prominence whereby one is more prominent (say, the Presidential elections in the US) than the other (say, the US congress elections). Typically, the more prominent election is also for the higher tier of government. In these contexts, concurrently held elections result in a significant increase in the turnout for the lower tier election compared with when it happens sequentially ("off-cycle"). The additional voters that synchronization brings in may be more uninformed and may take cues from candidates in the more salient election (Zudenkova 2011), resulting in coattail effects that mirror our estimates.

In the Indian context, both the national and state elections are highly prominent: the candidates in both elections spend significant sums of money during campaigns and representatives elected in both elections yield significant power and control over public resources. Understandably, the turnout in these elections, unlike the contexts of the US and Europe, is not very different to begin with. Table 1 reports that the average turnouts in national and state elections is 0.63 and 0.68, respectively. Moreover, we find that the turnout for state elections does not change between simultaneous and off-cycle elections. It is therefore unlikely that our results are driven primarily by a coattail effect.

Nonetheless we test coattail effects explicitly in our sample. We compute the 75th and 90th percentile of the win margin distribution in the national elections to proxy for "star candidates," and use these as cut-off points to test whether our effect is driven by constituencies with these candidates. We interact an indicator variable for PCs where the win margin is above these two cut-off points with our main variable (indicator for synchronized elections) to decompose our effect into that which arises due to prominent candidates and otherwise. Appendix Table A.17 suggests that our main results are not driven by coattail effects.

Additionally, we also consider the possibility of a reverse coattail effect, where the coattail effect operates from a lower tier (state) to a higher tier (national) election. One may argue that state representatives are possibly more relevant for voters as they are more accessible, and can influence (state) policies much more than their national representatives, who are more beholden to party positions on important national policies. To test for reverse coattail effect, we do the same exercise as before, except now we identify the "star candidates" in state elections. We use the same thresholds as before using the win margin distribution of the state elections. We report our results in A.18. We find that the interaction terms are statistically insignificant, and the main effect is still high in magnitude and is statistically significant. Therefore, we do not find support for a reverse coattail effect being at work.

Campaigning by Political Parties: During simultaneous elections, political parties can exploit the economies of scale in campaigning, and are better equipped to lower the per capita expenditure on outreach since they get to campaign for two elections at once. Synchronization may therefore lead to greater rewards in terms of electoral outcomes per unit of expenditure. This would imply that the estimated effect is driven by supply-side effects due to economies of scale for political parties.

We use the post-poll voter survey data described earlier to show that there is indeed some increase in election campaigning during simultaneous elections. In the surveys, the subjects were asked whether any party worker visited their house before elections. We check whether the voters are more likely to say yes following simultaneous elections. Appendix Table A.19 reports the results. We find that the likelihood of a party visiting a voter's house increases by 14.4 percentage points in simultaneous elections. However, given that the national parties have substantially more resources to expand their campaigning activities, we should expect the main result to be driven by them, rather than by state and regional parties. However, we do not observe this. Taken together, our evidence does not find support for the rational explanations, and therefore, suggests that there is a behavioral mechanism that may explain these findings.

7 Conclusion

In this paper, we examine the consequences of cognitive constraints on voters for their decision-making process and, consequently, for voting decisions and electoral outcomes in a decentralized democracy. Using natural variation in the electoral cycles of the two tiers of governance in India, we first show that simultaneous elections come with costs to voters' decision-making processes. We then show that voters rely on salient characteristics – the candidates' political parties – while taking voting decisions under higher cognitive load during simultaneous elections. This results in an increase in the fraction voting for the same political party across two elections. Finally, we show that the probability that the same political party wins both the PC and AC goes up by 21.6% when their elections are held simultaneously. The increase in probability is driven by state parties, as opposed to the large national parties, and by incumbent parties in the state governments. We therefore convincingly document that simultaneous elections involve substantial changes in the way voters process information and make their choices, leading to changes in the electoral outcomes. Greater simplicity in voters' decision-making processes during simultaneous elections suggests that the design of elections can in fact shape the degree of effective decentralization in a democracy. Contrary to the popular electoral arrangement of holding all elections at once, we find that sequential elections may facilitate a more evolved decision-making process for voters.

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8 Tables and Figures

Table 1—Summary Statistics

	Mean (1)	SD (2)	Min (3)	Max (4)
Panel A: State Elections				
Size of Electorate (in thousands)	149.44	86.28	1.40	1593.91
Number of Contestants	9.26	9.40	1	1033
Number of Parties	5.20	7.60	0	990
Effective # of Parties (ENOP)	2.88	0.93	1.00	12.50
Turnout	0.68	0.14	0.01	0.99
Win Margin	0.09	0.08	0.00	0.94
Panel B: National Elections				
Size of Electorate (in thousands)	1019.71	368.28	115.01	3240.34
Number of Contestants	10.78	8.06	1	79
Number of Parties	5.42	3.32	1	43
Effective # of Parties (ENOP)	2.67	0.73	1.23	6.67
Turnout	0.63	0.12	0.10	0.92
Win Margin	0.10	0.09	0.00	0.52
Panel C: Post-Poll Surveys				
Gender: Female	0.47	0.50	0	1
Age of respondent	41.12	15.55	18	99
Education: Matric and above	0.37	0.48	0	1
Social Category: SC or ST	0.30	0.46	0	1
Religion: Hindu	0.78	0.41	0	1
Locality: Rural	0.75	0.43	0	1

Notes: This table presents summary statistics from the data sources used in this paper. Panel A presents the summary statistics for all state elections in the data for states that have at least one sequential and one simultaneous election, Panel B for all national elections in the data, and Panel C for all the post-poll surveys.

Table 2—Cognitive Constraints

	Main issue for the elections?			
	National	State	Other	Don't Know
	(1)	(2)	(3)	(4)
I(Sync = 1)	-0.056	-0.124	-0.061^{*}	0.241^{***}
	(0.043)	(0.105)	(0.034)	(0.061)
Controls	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.211	0.469	0.06	0.261
Number Clusters	42	42	42	42
Observations	1,795	1,795	1,795	1,795

Notes: Survey Question– Talking about the election just completed what do you think was the main issue around which the election was fought this time? Standard errors are clustered at the State GE-Year level. Controls: log(Age); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table 3—Party Salience

	Most important consideration while voting				
	Party	Candidate	Caste	Other	Not Sure
	(1)	(2)	(3)	(4)	(5)
I(Sync = 1)	0.074**	−0.010	−0.017**	0.013***	−0.060***
	(0.033)	(0.027)	(0.007)	(0.005)	(0.012)
Controls	Yes	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.418	0.372	0.054	0.013	0.142
Number Clusters	83	83	83	83	83
Observations	6,753	6,753	6,753	6,753	6,753

Notes: Survey Question– People have different considerations while deciding whom to vote for. What mattered to you more while deciding whom to vote for in the recent election - party or candidate? Standard errors are clustered at the State GE-Year level. Controls: log(Age); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table 4—Vote Share Gap

	Party Vote Share Gap			
	AC level			PC level
	All	National Party	State Party	All
	(1)	(2)	(3)	(4)
I(Sync = 1)	-0.026^{***}	-0.028^{***}	-0.014^{**}	-0.037^{***}
	(0.004)	(0.003)	(0.007)	(0.004)
Controls	Yes	Yes	Yes	Yes
Party FE	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.09	0.09	0.09	0.07
Number Clusters	40	40	40	40
Number States	10	10	10	10
Observations	17,648	9,411	8,237	3,797

Notes: This table presents the effect of synchronization on the absolute gap in the vote share of various political parties between PC and AC at the AC level (Columns 1–3) and PC level (Column 4). All regressions control for the reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table 5—Voting for Same Party

	Voted for Same Party at AE and GE			
	(1)	(2)	(3)	(4)
I(Sync = 1)	0.071***	0.080***	0.068***	0.073***
	(0.008)	(0.028)	(0.021)	(0.026)
I(Sync = 1) x Age		−0.0002		
		(0.001)		
I(Sync = 1) x Female			0.007	
			(0.033)	
I(Sync = 1) x Education: Illiterate				0.004
				(0.020)
I(Sync = 1) x Education: Below Matric				−0.007
				(0.048)
Controls	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.56	0.56	0.56	0.56
Number Clusters	54	54	54	54
Observations	3,249	3,249	3,249	3,249

Notes: Standard errors are clustered at the State GE-Year level. Controls: Age (Column 2 only), log(Age) (Columns 1, 3 and 4); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table 6—AC and PC Win Probability

	I(Same Party = 1)		
	(1)	(2)	(3)
I(Sync = 1)	0.097***	0.093***	0.093***
	(0.031)	(0.027)	(0.027)
PC FE	Yes	Yes	Yes
GE-Year FE		Yes	Yes
Controls			Yes
Mean Dep. Var.	0.43	0.43	0.43
Number Clusters	40	40	40
Number States	10	10	10
Observations	6,530	6,530	6,530

Notes: Columns 1, 2 and 3 restricts the time elapsed between the general election and assembly election to less than 180 days. The time difference is computed as the days elapsed since the general election for the next assembly election within five years. The control variables includes reservation status of the constituency (AE Reserved, GE Reserved and AE Reserved x GE Reserved). Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table 7—Heterogeneity in AC and PC Win Probability

Panel A:	I(Same Party = 1 & Party is)			
	National	State	Unrecognized	Independent
	(1)	(2)	(3)	(4)
I(Sync = 1)	-0.010	0.088^{***}	0.013^{**}	0.002^{**}
	(0.029)	(0.028)	(0.006)	(0.001)
Mean Dep. Var.	0.35	0.07	0.002	0
Observations	6,530	6,530	6,530	6,530
Panel B:	I(Same Party = 1 & Party is Incumbent from)			
	Centre Govt.	State Govt.	Local PC	Local AC
	(1)	(2)	(3)	(4)
I(Sync = 1)	-0.005	0.125^{***}	-0.076^{*}	0.055
	(0.051)	(0.045)	(0.045)	(0.034)
Mean Dep. Var.	0.10	0.12	0.16	0.13
Observations	6,348	6,530	6,348	6,530
Controls	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes
Number Clusters	40	40	40	40
Number States	10	10	10	10

Notes: A political party is defined as national, state or unrecognized by the Election Commission of India. We use this definition in Panel A to define dependent variable as the joint probability of winning both elections and being one of these party-types in each column. Panel B present the estimates for the joint probability of winning both elections and being an incumbent government at the central level (Column 1), at the state level (Column 2), at the PC level (Column 3) and the AC level (Column 4). Standard errors are clustered at the State-GE Year level, and estimates are weighted by the electorate size of the state assembly constituency.

Table 8—Economic Activity

	Agricultural Production	Gross Cropped Area	Credit Disbursed	Total Investment	Night Lights
	(1)	(2)	(3)	(4)	(5)
			Panel A: Synchronized Elections		
Sync	0.012	−0.007	−0.020	−0.006	0.026
	(0.054)	(0.054)	(0.015)	(0.016)	(0.025)
			Panel B: Synchronized Representation		
Same	0.016	0.100*	0.012	0.009	0.020*
	(0.026)	(0.052)	(0.020)	(0.007)	(0.012)
Time Trends	District	District	District	District	District
GE Year FE	Yes	Yes	Yes	Yes	Yes
Observations	9,524	7,398	12,140	5,847	6,991

Notes: The dataset is a district $\times$ year panel for this table. Sync (Same) measures the share of assembly constituencies within the district that had a synchronized election (same party representation). All outcome variables are demeaned and scaled by the inverse of its standard deviation. Total agricultural production is measured in tons (1998 – 2018). Gross cropped area is measured in hectares per square km of the district area (1998 – 2018). District area is measured from 2001 census and is unavailable for new districts and their parent districts. Credit disbursed, and Total investment is calculated as millions of rupees per capita (1995 – 2018). Night lights are measured as average luminosity across assembly constituencies (1994 – 2007). Standard errors (in parenthesis) are clustered at the State - GE Year level.

Figure 1—Standard Approach: Uttar Pradesh GE and AE Years

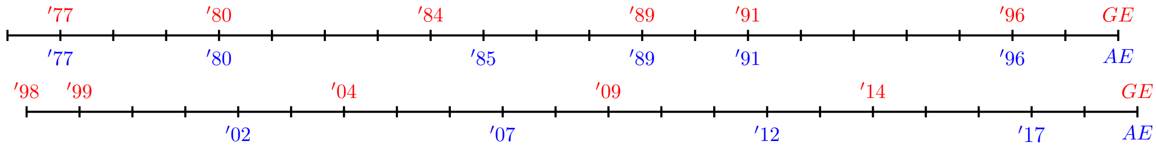
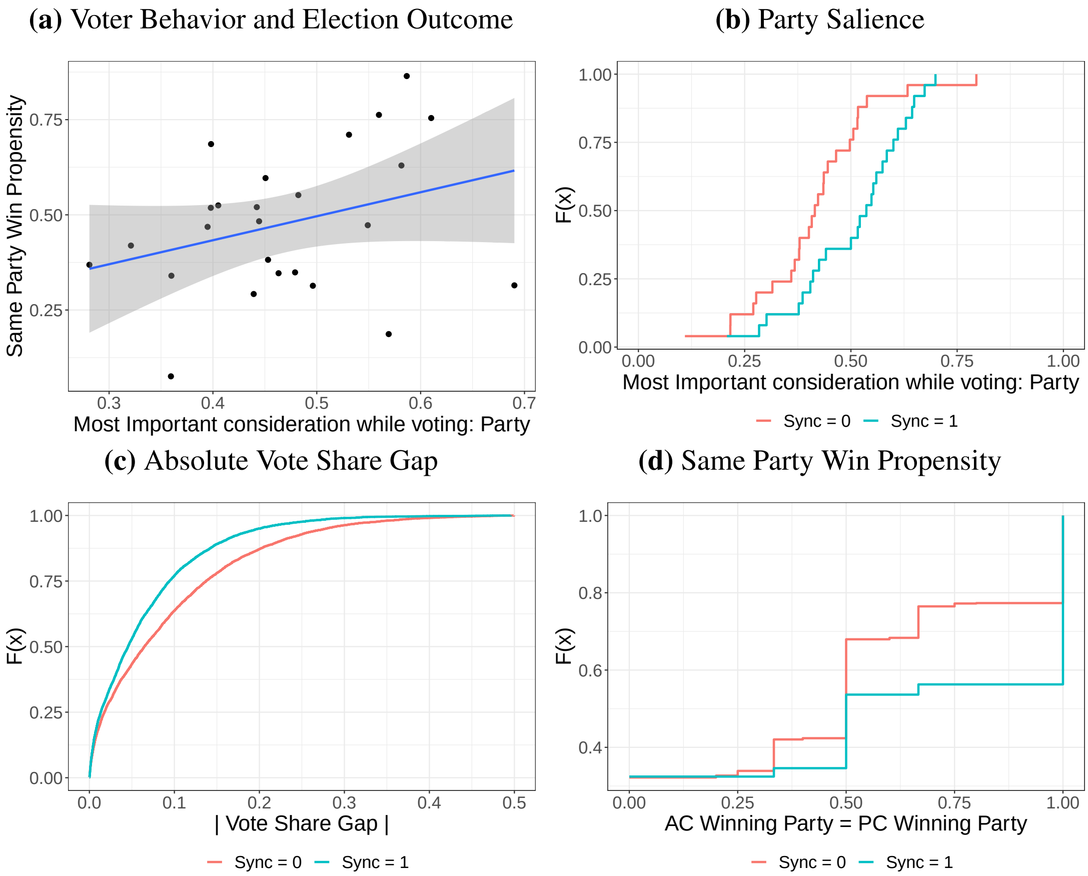


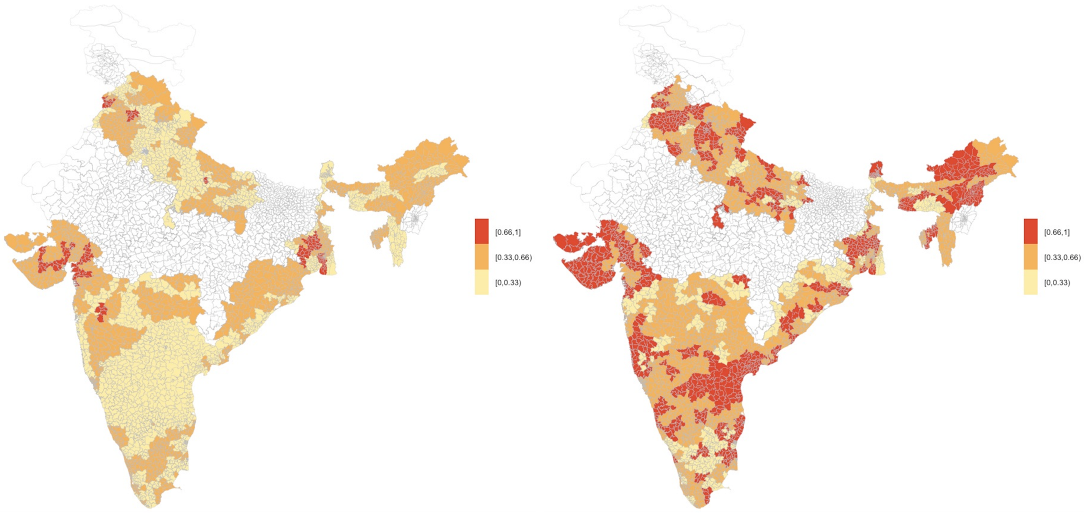
Figure 2—Graphical Analysis



Notes: The figure (a) and (b) uses the post-poll surveys at the parliamentary constituency level. The aggregate electoral data is used at the party-assembly constituency level [figure (c)] and assembly constituency level [figure (d)].

Figure 3—Prob(Same Party Wins PC and AC): Full Sample

(a) Sync = 0 **(b)** Sync = 1



Appendix

For Online Publication

1 Elections in India

Conduct of Elections: The Election Commission of India (ECI, henceforth) is the constitutional body that is responsible for conducting elections in India. In both national and state elections, candidates from various national, regional and local political parties may stand for elections. Since the constitution and the People's Representation Act of 1956 do not preclude non-affiliated candidates taking part in an election, independent candidates who have no affiliation to a political party can also contest elections in India. The ECI enforces the Model Code of Conduct for all electoral candidates before elections.[52] This code of conduct is enforced to prevent the incumbent from having an unfair advantage through declaring new government policy, or undertaking any development activity during the period in which candidates canvass for votes in their constituencies. The model code of conduct usually comes into force soon after the announcement of the election schedule and ceases to be operational after the results are declared. The code is in force for a period of two months for national elections, and one month for state elections.

In the earlier years, all of the constituencies within a state would typically vote on the same day. However, the number of eligible voters in India has grown from about 200 million in 1951 to around 850 million as at 2019. With such a large group of eligible voters, national elections and a few large state assembly elections in recent times have been conducted over multiple phases. Therefore, even within a state, the date of voting for a given national or state election may vary across constituencies.

Post-independence the GE and AE were initially synchronized all across the country. However due to premature dissolution of some state assemblies in 1968 and 1969, the

[52] For additional details, please refer to Volume 3: Compendium of Instructions, https://www.dropbox.com/s/c0bfrudxq0du088/Vol_III_Compendium_of_Instrcutions_2019.pdf?dl=0

synchronization cycle was disrupted for the first time. Following that, the national and state elections have become asynchronous.

Delimitation of Constituencies: A constituencies delimitation exercise in India has been implemented four times - in 1952, 1966, 1977, and 2008. The Delimitation Commission submitted its reports in the years 1952, 1963, 1972, and 2002. The years mentioned in the main text are the years of implementation. Iyer and Reddy (2013) show that the delimitation exercise in 2008 was, for the most part, fair and objective, with very little evidence of political manipulation or gerrymandering.

Election Procedures: The election procedures do not differ between national and state assembly elections during synchronized elections. For example, political parties gain no additional time for broadcasts/telecast for a state assembly election when synchronized with the national election.[53] The election observer appointed for a national election in the PC will also be the observer for the corresponding ACs during synchronized elections. The number of polling officers remains the same irrespective of the synchronized nature of elections unless the total number of candidates for either the national polls or the state election goes above 16 in which case additional polling officers are stationed.[54]

The voting procedure within a polling station is modified to allow for two separate electronic voting machines (EVM) that record votes for the state and national elections, respectively. To ensure that voters can identify the EVM for national and state elections, distinct color self-adhesive stickers that contain the words, "Lok Sabha" (national election) or "Legislative Assembly" (state election) are pasted on the balloting unit and the control unit, in the most widely spoken language in the area and in English.[55] If a state has multiple phases, the election for both the ACs and PCs for the same state should are synchronized.

[53]Refer to Volume 2: Compendium of Instructions, https://www.dropbox.com/s/zlii2lawpy9g1hy/Vol_II_Compendium_of_Instrcutions_2019.pdf?dl=0

[54]The EVMs can cater to a maximum of 64 candidates (M2 EVMs, 2006 - 2013) or 384 candidates (M3 EVMs, post-2013) including a NOTA (none of the above) option. There are provisions for 16 candidates in a single balloting unit. https://bit.ly/2S4H05W; last accessed 28th January 2020.

[55]https://bit.ly/2S3toaP; last accessed 28th January 2020.

2 CSDS-Lokniti survey data Description

The Lokniti Program at the Centre for the Study of Developing Societies (CSDS) has been conducting representative sample surveys since 1996 at the time of elections to study voter behavior at the National and State levels. The Lokniti program has a long standing tradition of conducting election surveys with a transparent methodology and sample selection over a long period of time. We employ the post-poll surveys for each of the national and state assembly elections conducted by Lokniti from 1996. The objective of the surveys are to map the behavior and opinions of Indian voters and to help explain the electoral outcomes. All post-poll surveys are conducted in a single wave in the period (within 48 hours) between completion of polling and the start of counting before the declaration of the results.

Departing from the prevailing practice of outsourcing the surveys to external agencies, the survey and faculty team of the Lokniti network spread across all states are directly in charge of recruiting, training and supervising the field work. The processing and assembling of the data is centrally managed in the national headquarters in Delhi. All surveys are conducted following the rigorous practice of carefully translating the survey schedules into over 22 of the major languages spoken in India and paying careful attention to the local dialects. The questionnaires are administered each time after thorough and rigorous debates within the Lokniti network and through a pilot sample in the states neighboring Delhi. The final questionnaire is prepared after roughly 10 drafts.

The sample is drawn using a four-stage stratified random sampling. In the first stage, PCs are sampled. In the larger states where there are 40 or more constituencies, a sample from among the constituencies is chosen by simple circular sampling. The second stage is the sampling of assembly segments that form a part of the PCs, conducted using random circular sampling (probability proportionate to the size of electorate in each constituency as per the last available election records for the state). This number varies from state to state – from two in most of the big states to five in some of the smallest states – but remains constant within a state and was selected to yield an appropriate number of polling stations and respondents.

The third stage is the sampling of polling stations within each sampled assembly constituency. The selection of polling stations is done by a systematic random sample procedure based on the list of polling stations in serial order followed by the Election Commission. The fourth and final stage in the sampling is the selection of respondents. The electoral rolls of the sampled polling stations are obtained from the office of the chief election officer of the state or the district election office. In every polling station, usually 15 or 10 respondents are chosen from the electoral rolls by circular sampling with a random start. The field investigators are given a list of sampled respondents containing their name, age, gender and address and are asked to approach them. Additionally, taking time constraints into account, a substitution of the respondent is allowed if the surveyor is unable to meet the person after more than two attempts. The substitution is only permissible under two conditions: the substitute has to be from the sample family and has to be the same gender as the respondent being replaced. In NES 2004, the surveyors achieved a success rate of 77%. Better representativeness has been achieved over the years by reducing the sample size at the primary sampling unit so as to reduce the cluster effect. The respondents are asked the questions in the local language and the voting preferences are collected using dummy secret ballots and dummy ballot boxes as used during the actual elections in the polling stations. The average sample size for national election surveys and state election surveys over the years is 19,500 and 2,700 respectively.

The national election surveys have been conducted on average in 25 states and union territories. The state election surveys have been conducted for almost all of the state assembly elections. The sampling procedures remain the same for both national and state election surveys. The selection of questions for each survey round is updated to keep in mind the current socio-economic-political situation. For our analysis, the questions were selected using two criteria: first, the question should be asked consistently across national and state surveys and over the years so as to construct a representative repeated cross-sectional data; and, second, the question should help in understanding some mechanism with respect to voter behavior.

3 Robustness

Table A.8 presents various robustness tests on the estimated probability for the 180-day sample. Column 1 presents the result replicated from Column 6, Table 6 for easier comparison, while the remaining columns address different robustness tests. Although the introduction of PC fixed effects allows us to address the cross-sectional selection problem, it may be that there are unobserved differences in the nature of political competition or voters preferences across ACs within a given PC. To overcome this concern, we compare outcomes within an AC over time by using AC fixed effects (Column 2). This inclusion results in similar point estimates, with slightly larger standard errors, suggesting that there may not be large unobserved differences across ACs within a PC that are driving our main effect.

One may also argue that there are differences across PCs within each state over time. For instance, a PC in the 1999 national election cycle may be very different in terms of its voter composition, and other unobserved temporal differences, as compared to the same PC in the year 2004. This may potentially be the reason behind differences in the win probability for the same political party. To account for such differences at the PC level we interact the PC fixed effects with a continuous variable denoting the gap in years since the first election for each PC (Column 3). This removes any potential trend in changing voter preferences for synchronized representation. The inclusion of PC-level time trends reduces the estimated coefficient to 7 percentage points, but it is still statistically significant. Similarly, we include these time trend interactions at the AC-level (Column 4), and find similar estimates, with a larger standard error – still meaningfully significant.

The next set of estimates (Columns 5–8) in Table A.8 present the coefficients for changes to the data sample. We look at a pre-2008 delimitation sample that presents the longest time variation for a stable set of PCs and ACs, and find that the coefficient estimate is about one percentage point lower than in our baseline specification– but, still robust and large. Exclusion of electorate size weights in the regression estimates yield lower estimates at 7.9 percentage points, but remaining meaningfully significant.

While a majority of the state elections happened within the 180 days after the national elections, we test if inclusion of state elections within the 180-day interval before the national elections affect our point estimates (Column 8). We do not find any meaningful changes to the baseline estimates. Lastly, we test if the state elections which were synchronized or non-synchronized with the national elections were strategically dissolved before it ran its full term/cycle by the incumbent party. This strategy could either benefit or harm the incumbent depending on the incumbent party at the national level, and the overall seat composition of the state. We find exclusion of such strategic state elections which could potentially be endogenous actually increases our point estimates suggesting that our estimates, if anything, are a lower bound of the true estimated effect of synchronization.

We estimate the synchronization effect for the sub-sample where we observe more geo-spatial characteristics from the SHRUG database (Asher, Lunt, Matsuura, and Novosad 2019), and show that the estimated effects are meaningfully large (Appendix Table A.9). Importantly, our main effect remains statistically significant after controlling for literacy (Column 2) and share of rural population (Column 3) in the AC: characteristics that differ between synchronized and non-synchronized constituency-election observations.

Finally, to alleviate concerns of a relatively small number of clusters (40 in the 180-day sample, and 169 in the all days sample) in estimating clustered standard errors, we re-estimate the standard errors using a wild-cluster bootstrap methodology, and we find the coefficients to be significant at the 5% level (Appendix Table A.10).

Randomized Inference: We test whether our main results can be obtained when synchronization status is randomly varied across different elections. We randomize the synchronization status assignment within each state across state election years 10,000 times, and re-estimate our coefficient of interest. Appendix Figure A.4 plots the empirical distribution of the estimated coefficients. The dotted lines represent the 5% and 10% two-tail confidence levels, and the blue dashed lines represent the coefficient estimates in our data. We find that the distribution is centered around zero, and our estimated coefficients are above the 5% confidence level. The simulation results confirm our belief that our point estimates are not a result of chance.

Synchronization vs Proximity: Here we perform a more formal test akin to the regression discontinuity design to ascertain whether the synchronization effect we estimate can be explained as a proximity effect, as defined in Section 5. We use the sample of all non-synchronized elections (i.e., remove the synchronized elections from the all days sample) and regress our main outcome variable (defined for a pair of national and state elections) on the distance between the paired elections and its square. We plot the estimated relationship in Appendix Figure A.5. The estimated intercept in this regression gives us the implied value of the dependent variable for synchronized elections, i.e., when the time elapsed between the elections is zero. We find that the estimated relationship is negatively sloped near zero, but the intercept is far smaller compared to the mean of the outcome variable for synchronized elections. The difference between them is also statistically significant. This suggests that when time difference between elections become zero, the outcome variable discontinuously increases from the estimated intercept to the observed mean. We additionally focus on the elections that happen within 180 days. Appendix Figure A.5 plots the average values of the outcome variable for various time elapsed bins within the 180-day sample. The smallest time difference between two asynchronously held elections is 29 days, as shown in Appendix Figure A.6. Appendix Figure A.5 shows that the relationship between days elapsed and outcome variable is non-linear within the 180 days sample. The smallest time gap bin (29–95 days) has a *smaller* mean of the outcome variable compared to the next bin (96–145 days). Moreover, the mean of the outcome variable for the 29–95 days bin is statistically significantly smaller than the mean for the synchronized elections. Both of the analyses show that the synchronization effect can not be due to mere proximity of two elections: the fact that elections happened on the same day contributed to this effect.

4 Calculation of Share of Voters with "Preference Rationale"

A voter i using the "preference" rationale would vote for A if

$$\lambda_i(u_1(P^A) - u_1(P^B)) + (1-\lambda_i)(u_2(\theta^A) - u_2(\theta^B)) \geq 0$$

We define $z \equiv (u_2(\theta^A) - u_2(\theta^B))$. Given that both $u_2(\theta^A)$ and $u_2(\theta^B)$ follow uniform distribution, z also follows a uniform distribution. Specifically,

$$z \sim U[-(\bar{u}_2 - \underline{u}_2), (\bar{u}_2 - \underline{u}_2)]$$

Therefore, the probability that a voter i using the "preference" rationale would vote for A is given by

$$\begin{aligned} r^A(\lambda_i) &= \mathbb{P}\left[z \geq -\frac{\lambda_i}{1-\lambda_i}(u_1(P^A) - u_1(P^B))\right] \\ &= 1 - \frac{-\frac{\lambda_i}{1-\lambda_i}(u_1(P^A) - u_1(P^B)) + (\bar{u}_2 - \underline{u}_2)}{2(\bar{u}_2 - \underline{u}_2)} \\ &= \frac{1}{2}\left[1 + \frac{\frac{\lambda_i}{1-\lambda_i}(u_1(P^A) - u_1(P^B))}{(\bar{u}_2 - \underline{u}_2)}\right] \leq 1 \end{aligned}$$

where the last inequality follows from equation (3). The set of voters who use the "preference" rationale is given by $\lambda_i \leq \bar{\lambda}$. Therefore, the vote share of candidate A in the mass of voters using the "preference" rationale is given by

$$s^A = \int_0^{\bar{\lambda}} r^A(\lambda_i)\frac{f(\lambda_i)}{F(\bar{\lambda})}d\lambda_i = \frac{1}{2}\left[1 + \frac{\mathbb{E}\left[\frac{\lambda_i}{1-\lambda_i} \mid \lambda_i \leq \bar{\lambda}\right](u_1(P^A) - u_1(P^B))}{(\bar{u}_2 - \underline{u}_2)}\right]$$

Therefore, for any mass of voters using the "preference" rationale, s^A is the share of such voters who vote for candidate A.

5 Proofs of Results

5.1 Result 1

Proof: The fraction of voters who use "party" rationale in E (the election with a cheaper information cost), when held sequentially with $E^{'}$, is given by

$$f^{E,seq} \;=\; (1 - F(\bar{\lambda}(\kappa))).$$

When the elections E and $E^{'}$ are synchronized, the same fraction is given by

$$f^{E,sync} \;=\; (1 - F(\bar{\lambda}(\kappa^{'}))).$$

Since $\bar{\lambda}(\kappa^{'}) < \bar{\lambda}(\kappa)$, we get $(1 - F(\bar{\lambda}(\kappa^{'}))) > (1 - F(\bar{\lambda}(\kappa)))$. For election $E^{'}$, we know that $f^{E^{'},seq} = f^{E^{'},sync} = (1 - F(\bar{\lambda}(\kappa^{'})))$. Hence, there is no change in the fraction for $E^{'}$. ■

5.2 Result 2

Proof: The only change in the extent of split-ticket voting between synchronized and sequential elections is due the voters with $\lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$ changing their rationale for voting. The extent of split-ticket voting for the set of voters $\lambda_i \notin (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$ is same across the two types of election timing, as their rationale for voting does not change. For the set of voters with $\lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$, the fraction of voters who vote for A in $E^{'}$ is one. If E is held simultaneously with $E^{'}$ then all voters in that set also vote for A in election E. Therefore, all voters in the set engage in straight-ticket voting. However, if E and $E^{'}$ are held sequentially, then only a fraction of voters in that set vote for A in election E. The fraction is given by

$$\frac{\mathbb{E}[r^A(\lambda_i) \mid \lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))]}{F(\bar{\lambda}(\kappa))) - F((\bar{\lambda}(\kappa^{'}))} < 1$$

where

$$r^A(\lambda_i) \;=\; 1 - \frac{-\frac{\lambda_i}{1-\lambda_i}(u_1(P^A) - u_1(P^B)) + (\bar{u}_2 - \underline{u}_2)}{2(\bar{u}_2 - \underline{u}_2)}$$

Hence, the result follows. ■

5.3 Result 3

Proof: The probability that party 1 wins both elections when elections are sequential is given by:

$$\Pi^{seq} = \pi^A \pi^{A^{'}} = (4v^A - 1)(4v^{A^{'}} - 1)$$

where v^A is as defined before and $v^{A^{'}}$ is defined analogously. Now,

$$\begin{aligned}
v^A \;&=\; (1 - F(\bar{\lambda}(\kappa))) + F(\bar{\lambda}(\kappa)) \int_0^{\bar{\lambda}(\kappa)} r^A(\lambda_i) \frac{f(\lambda_i)}{F(\bar{\lambda}(\kappa))} d\lambda_i \\
&<\; (1 - F(\bar{\lambda}(\kappa))) + \int_0^{\bar{\lambda}(\kappa^{'})} r^A(\lambda_i) f(\lambda_i) d\lambda_i + \int_{\bar{\lambda}(\kappa^{'})}^{\bar{\lambda}(\kappa)} f(\lambda_i) d\lambda_i \\
&=\; (1 - F(\bar{\lambda}(\kappa))) + \int_0^{\bar{\lambda}(\kappa^{'})} r^A(\lambda_i) f(\lambda_i) d\lambda_i + (F(\bar{\lambda}(\kappa)) - F(\bar{\lambda}(\kappa^{'}))) \\
&=\; (1 - F(\bar{\lambda}(\kappa^{'}))) + F(\bar{\lambda}(\kappa^{'})) \int_0^{\bar{\lambda}(\kappa^{'})} r^A(\lambda_i) \frac{f(\lambda_i)}{F(\bar{\lambda}(\kappa^{'}))} d\lambda_i \\
&=\; v^{A^{'}}
\end{aligned}$$

Here the first inequality is given by the fact that $r^A(\lambda_i) \leq 1$ for all $\lambda_i \leq \bar{\lambda}(\kappa)$ and $r^A(\lambda_i) < 1$ for all $\lambda_i \leq \frac{1}{2}$ (since $(u_1(P^A) - u_1(P^B)) < (\bar{u}_2 - \underline{u}_2)$ by assumption). To complete the proof we notice that the probability that party 1 wins both elections under synchronized elections is given by

$$\Pi^{sync} = \pi^{A'}\pi^{A'} = (4v^{A'} - 1)^2 > \Pi^{seq}.$$

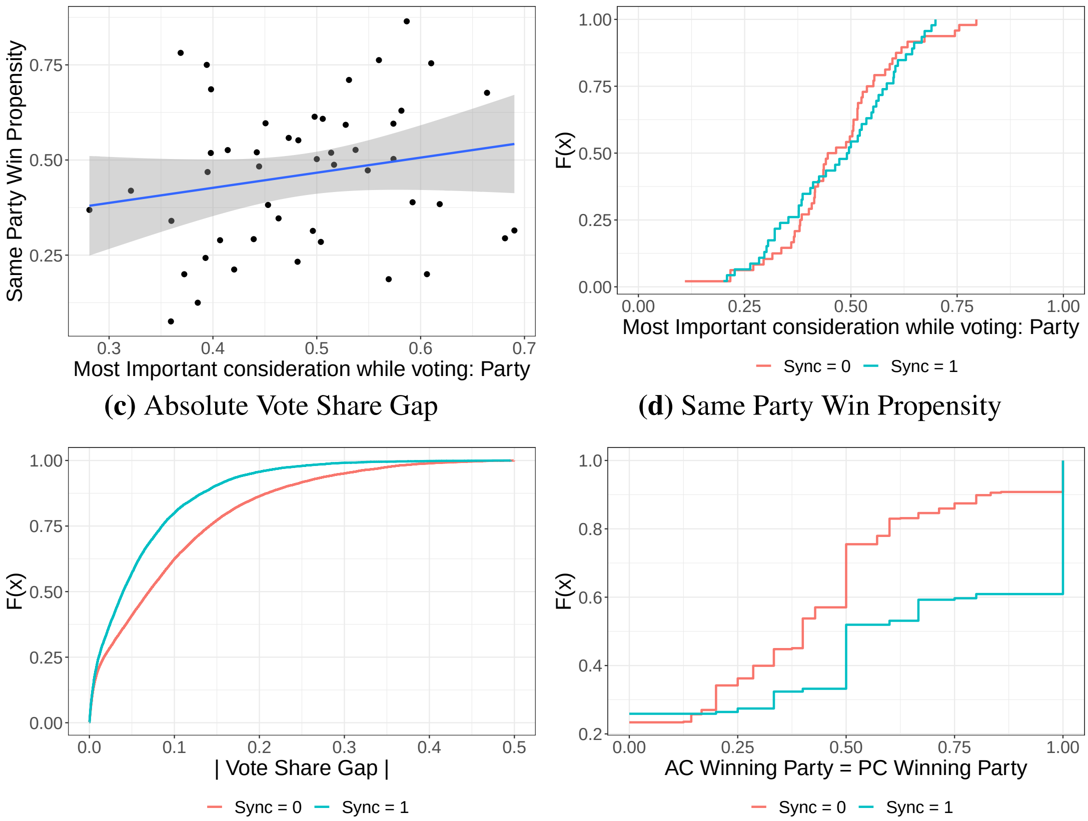
■

6 Appendix Tables and Figures

Figure A.1—Summary Statistics: All Days Sample

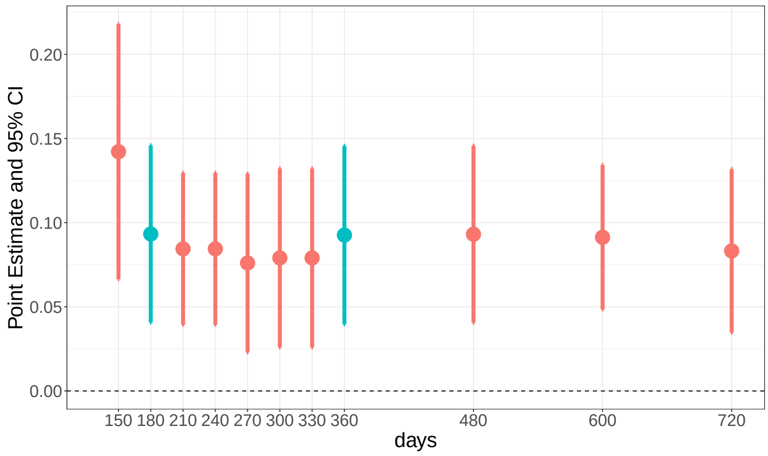
(a) Voter Behavior and Election Outcome **(b)** Party Salience

(c) Absolute Vote Share Gap **(d)** Same Party Win Propensity



Notes: The figure (a) and (b) uses the post-poll surveys at the parliamentary constituency level. The aggregate electoral data is used at the party-assembly constituency level [figure (c)] and assembly constituency level [figure (d)].

Figure A.2—Point Estimates across Time Differences



Notes: The figure plots the coefficient γ from Equation (8) where the non-synchronized elections vary in time that elapsed between them. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency.

Figure A.3—Prob(Same Party Wins PC and AC): 180-Day Sample

(a) Sync = 0 **(b)** Sync = 1

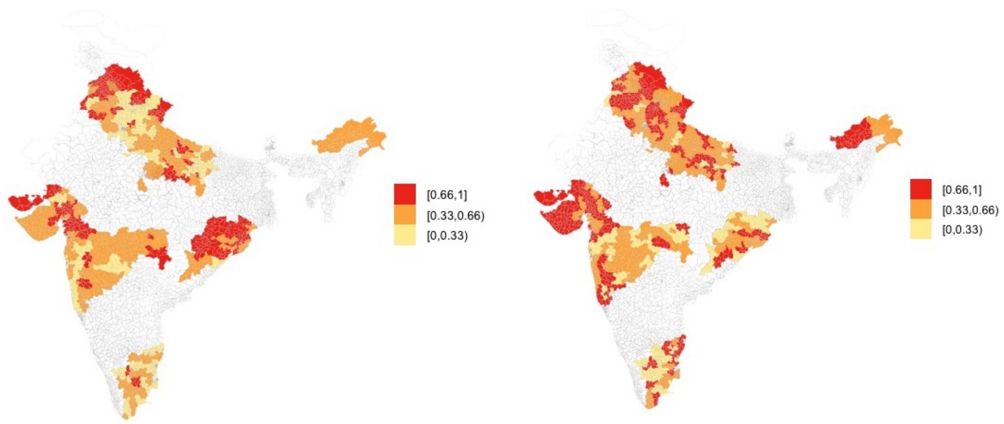
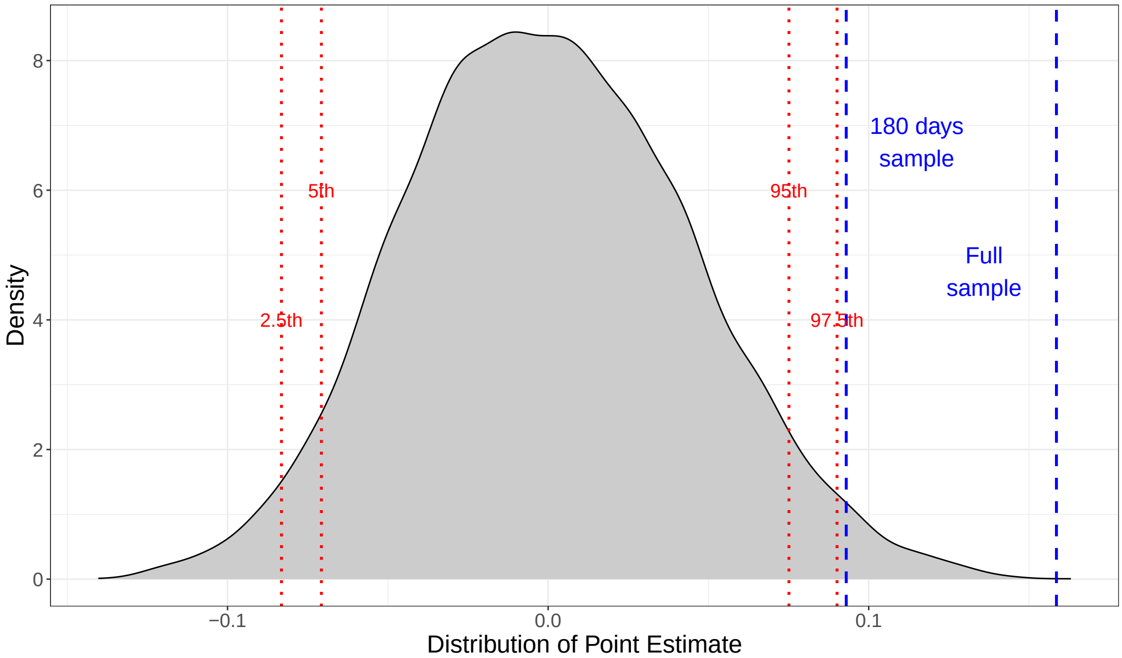
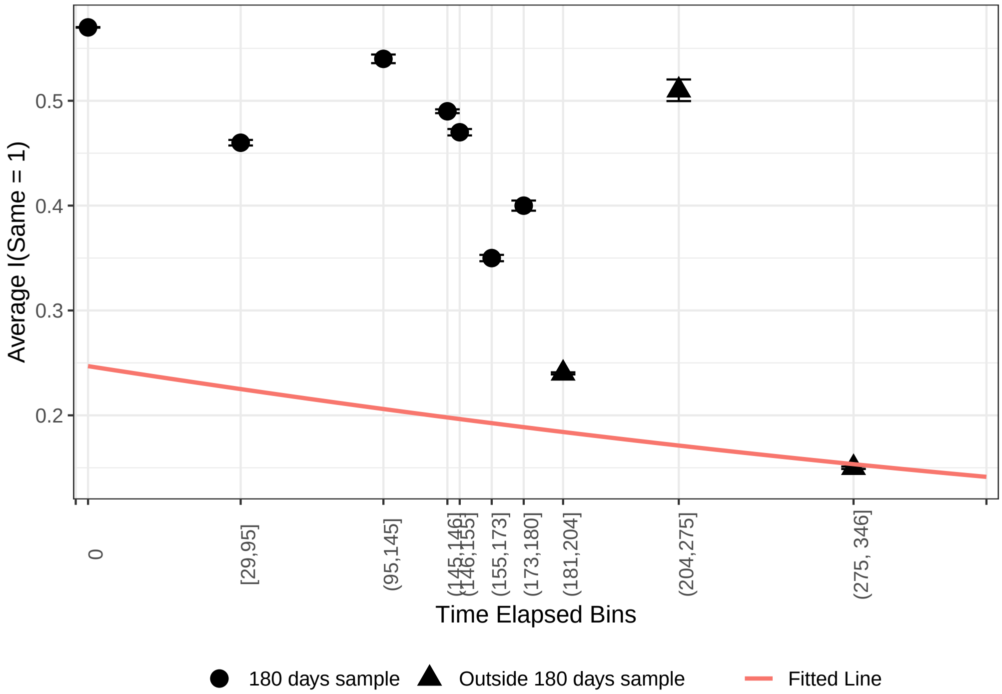


Figure A.4—Simulated Distribution of the Point Estimate of Interest



Notes: This figure plots the empirical probability density function of the γ coefficient estimated using Equation 8 on 10,000 replicates simulated by randomly assigning synchronization in our dataset. The red lines mark the 2.5th, 5th, 95th and 97.5th percentile of the distribution, and the dashed (blue) line represents the estimated coefficient for the full sample and the main sub-sample with 180 days as in Table 6.

Figure A.5—Same Party Win Propensity by Time that Elapsed Between Elections



Notes: This figure plots the average same party win propensity by different time-gaps of the unsynchronized elections. The time-gaps have been chosen to have at least 200 assembly constituencies in each bin. The fitted line is plotted using the all days sample.

Figure A.6—Election Pairs by Distance Time

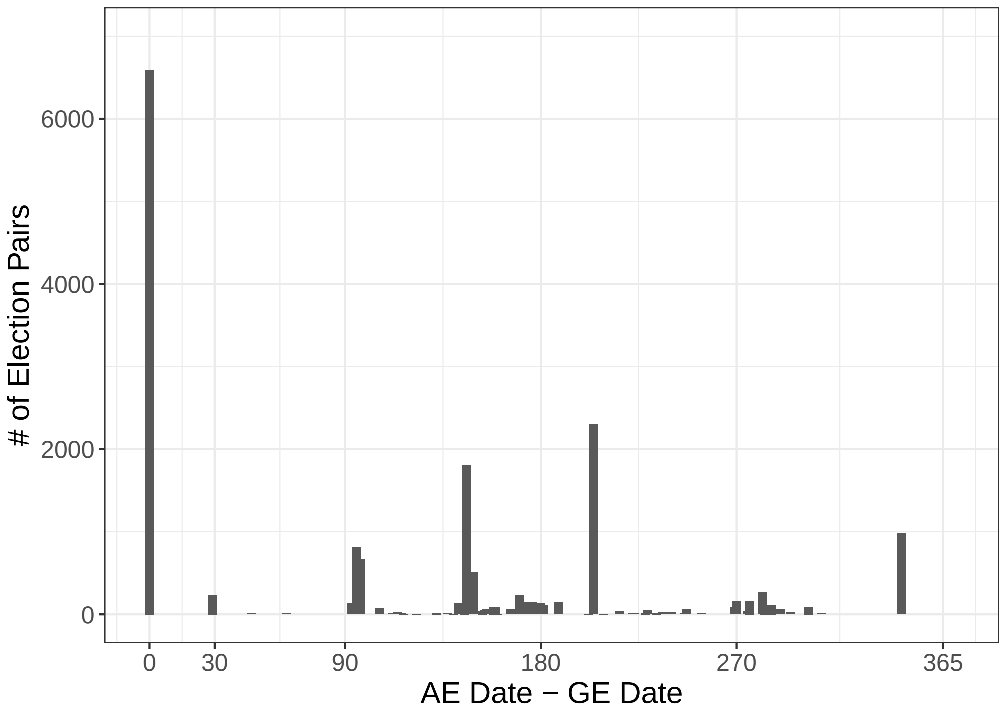


Table A.1—Elections in India

GE-Year	Synchronized States (1)	Share of PCs Synchronized (2)	Share of Electorate Synchronized (3)
1977	KL	0.04	0.036
1980	**AR**, KL, **PU**	0.04	0.039
1989	AP, GO, KR, MZ, NL, SK, **UP**	0.29	0.307
1991	AS, **HR**, KL, **PB**, **PU**, **UP**, WB	0.34	0.353
1996	AS, **HR**, KL, **PU**, **TN**, WB	0.23	0.225
1998	**GJ**, **HP**, ML, NL, TP	0.06	0.058
1999	AP, **AR**, KR, **MH**, SK	0.22	0.229
2004	AP, KR, **OD**, SK	0.17	0.172
2009	AP, **OD**, SK	0.12	0.119
2014	AP, **AR**, **OD**, SK	0.12	0.114

Notes: Each row presents a national election year ("GE-Year"), and column (1) lists the various states that had simultaneous elections in that GE-Year, and at least one sequential election during our sample period. The states in bold-face represent those that had sequential elections within 180 days of each other. Column (2) presents the share of PCs that had simultaneous elections with state elections in each round of the national election. The state codes are Andhra Pradesh (AP), Arunachal Pradesh (AR), Goa (GO), Haryana (HR), Himachal Pradesh (HP), Karnataka (KR), Maharashtra (MH), Meghalaya (ML), Mizoram (MZ), Kerala (KL), Nagaland (NL), Odisha (OD), Puducherry (PU), Punjab (PB), Tamil Nadu (TN), Tripura (TP), Uttar Pradesh (UP), West Bengal (WB).

Table A.2—Summary Statistics (180 days sample)

	Mean	SD	Min	Max
	(1)	(2)	(3)	(4)
Panel A: State Elections				
Size of Electorate (in thousands)	158.29	76.02	3.48	1494.09
Number of Contestants	10.53	15.05	1	1033
Number of Parties	5.19	13.01	0	990
Effective # of Parties (ENOP)	3.02	1.00	1.00	10
Turnout	0.59	0.14	0.00	0.96
Win Margin	0.09	0.08	0.00	0.68
Panel B: National Elections				
Size of Electorate (in thousands)	980.78	329.10	115.01	3240.34
Number of Contestants	13.23	11.30	2	79
Number of Parties	5.55	3.29	2	39
Effective # of Parties (ENOP)	2.84	0.77	1.47	5.56
Turnout	0.58	0.11	0.10	0.84
Win Margin	0.09	0.07	0.00	0.35
Panel C: Post-Poll Surveys				
Gender: Female	0.47	0.50	0	1
Age of respondent	40.87	16.06	18	99
Education: Matric and above	0.31	0.46	0	1
Social Category: SC or ST	0.27	0.45	0	1
Religion: Hindu	0.82	0.38	0	1
Locality: Rural	0.71	0.45	0	1

Notes: This table presents summary statistics across a number of electoral variables from the aggregate elections as well as the survey evidence from Lokniti. The sample includes assembly elections that happen within 180 days after the general election.

Table A.3—Balance Statistics

	Unconditional Mean		Coefficient	N
	Sync = 1	Sync = 0	(SE)	
	(1)	(2)	(3)	(4)
Panel A: Assembly Elections				
Share of SC Population	0.183	0.174	0.000 (0.000)	1812
Share of ST Population	0.084	0.095	−0.001 (0.001)	1812
Share of Rural Population	0.846	0.843	−0.004* (0.002)	1887
Share of Literate Population	0.473	0.497	−0.003*** (0.001)	1812
Area of Town (sq. km)	35.715	19.301	24.671** (11.816)	1331
Area of Village (sq. km)	33.799	27.969	5.552 (4.029)	1887
Panel B: General Elections				
Share of SC Population	0.181	0.179	0.000 (0.001)	453
Share of ST Population	0.070	0.068	−0.004 (0.003)	453
Share of Rural Population	0.844	0.843	0.000 (0.003)	453
Share of Literate Population	0.470	0.506	−0.003* (0.001)	453
Area of Town (sq. km)	36.043	19.352	26.075** (12.579)	442
Area of Village (sq. km)	35.457	33.470	4.745 (4.392)	453

Notes: This table presents balance statistics between constituencies that had synchronized elections (Column 1) and those that do not (Column 2). Column 3 presents the regression coefficient for each outcome variable (in rows) on a dummy that takes the value 1 if the state assembly constituency had concurrent elections with parliamentary constituency elections, and 0 otherwise. The sample includes unsynchronized assembly elections that happen within 180 days after the general election. The regression includes parliamentary constituency (Panel A), state fixed effects (Panel B), and GE-Year fixed effects. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency (Panel A) and parliamentary constituency (Panel B).

Table A.4—Heterogeneity in Cognitive Constraints

	Main issue for the elections: Don't Know			
	(1)	(2)	(3)	(4)
I(Sync = 1)	0.241***	0.270***	0.278***	0.292***
	(0.061)	(0.076)	(0.066)	(0.083)
I(Sync = 1) x Age		−0.001		
		(0.001)		
I(Sync = 1) x Female			−0.082***	
			(0.015)	
I(Sync = 1) x Education: Illiterate				−0.145
				(0.093)
I(Sync = 1) x Education: Below Matric				−0.019
				(0.063)
Controls	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.261	0.261	0.261	0.261
Number Clusters	42	42	42	42
Observations	1,795	1,795	1,795	1,795

Notes: Survey Question– Talking about the election just completed what do you think was the main issue around which the election was fought this time? Standard errors are clustered at the State GE-Year level. Controls: Age (Column 2 only), log(Age); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A.5—Vote Share Gap (All Days Sample)

	Party Vote Share Gap			
	AC level			PC level
	All	National Party	State Party	All
	(1)	(2)	(3)	(4)
I(Sync = 1)	-0.040^{***}	-0.042^{***}	-0.037^{***}	-0.051^{***}
	(0.004)	(0.005)	(0.007)	(0.005)
Controls	Yes	Yes	Yes	Yes
Party FE	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.09	0.09	0.09	0.07
Number Clusters	168	168	168	168
Number States	21	21	21	21
Observations	57,298	39,233	18,065	11,406

Notes: This table presents the effect of synchronization on the absolute gap in the vote share of various political parties between PC and AC at the AC level (Columns 1–3) and PC level (Column 4). All regressions control for the reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A.6—AC and PC Win Probability (All Days Sample)

	I(Same Party = 1)		
	(1)	(2)	(3)
I(Sync = 1)	0.178***	0.159***	0.159***
	(0.033)	(0.027)	(0.027)
PC FE	Yes	Yes	Yes
GE-Year FE		Yes	Yes
Controls			Yes
Mean Dep. Var.	0.41	0.41	0.41
Number Clusters	168	168	168
Number States	21	21	21
Observations	24,158	24,158	24,158

Notes: Columns 1, 2 and 3 includes all state assembly election-general election pairs within zero and five years of time difference. The time difference is computed as the days elapsed since the general election for the next assembly election within five years. The control variables includes reservation status of the constituency (AE Reserved, GE Reserved and AE Reserved x GE Reserved). Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A.7—Synchronization Effects on Win Probability across time-differences

	I(Same Party = 1)										
	150	180	210	240	270	300	330	360	480	600	720
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
I(Sync = 1)	0.142***	0.093***	0.084***	0.084***	0.076***	0.079 ***	0.079***	0.093***	0.093***	0.091***	0.083***
	(0.039)	(0.027)	(0.023)	(0.023)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.022)	(0.025)
PC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.48	0.43	0.39	0.39	0.4	0.4	0.4	0.37	0.37	0.38	0.39
Number Clusters	31	40	51	51	55	60	60	76	79	81	100
Number States	9	10	11	11	12	14	14	18	19	19	20
Observations	5,155	6,530	8,786	8,786	9,056	9,373	9,373	12,806	12,916	13,335	15,699

Notes: Each column presents the probability of winning both elections across different time periods in the synchronized elections. All regressions control for the reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency.

Table A.8—Robustness

	I(Same Party = 1)							
		Econometric Specification				**Data Sample**		
	PC FE	AC FE	PC Time Trends	AC Time Trends	Pre 2008 Delimitation	Without Weights	-180 to +180	Strategic Dissolution
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
I(Sync = 1)	0.093***	0.093***	0.070***	0.066***	0.083***	0.079 **	0.095***	0.116***
	(0.027)	(0.032)	(0.019)	(0.022)	(0.030)	(0.031)	(0.026)	(0.026)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	PC	AC	PC	AC	PC	PC	PC	PC
Time-Trends			PC	AC				
GE-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.43	0.43	0.43	0.43	0.45	0.46	0.43	0.43
Number Clusters	40	40	40	40	33	40	52	39
Number States	10	10	10	10	10	10	13	10
Observations	6,530	6,530	6,530	6,530	5,624	6,530	6,972	6,384

Notes: Column 1 presents the comparison estimates from Table 2. Columns 2−4 modify the specification with AC fixed effects (Column 2), PC time trends (Column 3), AC time trends (Column 4) and account for potential unobserved variation. We use data only until 2008 to restrict the sample before the Election Commission of India implemented the delimitation exercise to redraw constituency boundaries (Column 5). Columns 6 and 7 present results without electorate size weights, and accounting for elapsed time without the specific ordering of GE and AE. Column 8 presents results after removing those assembly-general election pairs where the state assembly did not complete its constitutional term while the national parliament completed its tenure. All regressions control for the reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency, except in Column 6.

Table A.9—Synchronization Effects on Win Probability
(Balance Statistics Sub-sample)

	I(Same Party = 1)				
	(1)	(2)	(3)	(4)	(5)
I(Sync = 1)	0.093***	0.040***	0.039***	0.054***	0.055***
	(0.027)	(0.012)	(0.012)	(0.017)	(0.017)
AC Reserved	0.035	0.085**	0.089**	0.132***	0.132***
	(0.022)	(0.041)	(0.042)	(0.048)	(0.048)
PC Reserved	−0.001	−0.167	−0.167	−0.079	−0.076
	(0.071)	(0.136)	(0.137)	(0.135)	(0.133)
AC: Share of Literate Population		0.397**	0.266	0.173	0.294
		(0.165)	(0.173)	(0.274)	(0.214)
AC: Share of Rural Population			−0.189*	−0.273*	−0.262*
			(0.105)	(0.157)	(0.155)
AC: Share of SC Population				−0.058	0.006
				(0.452)	(0.471)
AC: Share of ST Population					0.179
					(0.266)
AC Reserved x PC Reserved	−0.032	−0.026	−0.034	−0.073	−0.072
	(0.042)	(0.106)	(0.107)	(0.107)	(0.107)
PC FE	Yes	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.43	0.41	0.41	0.40	0.40
Number Cluster	40	17	17	17	17
Number States	10	6	6	6	6
Observations	6,530	1,812	1,812	1,323	1,323

Notes: Standard errors are clustered at the State GE-Year level. The estimates are weighted by the size of the electorate for the AE constituency.

Table A.10—Synchronization Effects on Win Probability
(Wild Clustered Bootstrap)

	I(Same Party = 1)					
	All days sample			**180 days sample**		
	(1)	(2)	(3)	(4)	(5)	(6)
I(Sync = 1)	0.178***	0.159***	0.159***	0.097**	0.093**	0.093**
	(0.045)	(0.038)	(0.038)	(0.042)	(0.038)	(0.038)
PC FE	Yes	Yes	Yes	Yes	Yes	Yes
GE-Year FE		Yes	Yes		Yes	Yes
Controls			Yes			Yes
Mean Dep. Var.	0.41	0.41	0.41	0.43	0.43	0.43
Number Cluster	168	168	168	40	40	40
Number States	21	21	21	10	10	10
Observations	24,158	24,158	24,158	6,530	6,530	6,530

Notes: Columns 1, 2 and 3 includes all state assembly election-general election pairs within zero and five years of time difference. The time difference is computed as the days elapsed since the general election for the next assembly election within five years. Columns 4, 5, and 6 restricts the time elapsed between the general election and assembly election to less than 180 days. The control variables includes reservation status of the constituency (AE Reserved, GE Reserved and AE Reserved x GE Reserved). Wild clustered standard errors at the State GE-Year level are in parantheses, and estimates are weighted by the electorate size of the state assembly constituency.

Table A.11—Placebo: Comparing Effect Sizes for Different Time Period

	I(Same Party = 1)	
	1 to 90 vs 91 to 180	30 to 120 vs 121 to 210
	(1)	(2)
I(Sync Placebo = 1)	−0.129	−0.077
	(0.133)	(0.139)
Controls	Yes	Yes
PC FE	Yes	Yes
GE-Year FE	Yes	Yes
Mean Dep. Var.	0.21	0.36
Number Clusters	6	33
Number States	3	11
Observations	749	5,903

Notes: This table documents the difference in the joint probability of winning both elections when they happen within 1 day – 3 months and 4 – 6 months of time difference (Column 1); and similarly for Column 2 (between 2–4 months and 4–6 months). All regressions control for reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency.

Table A.12—Changes in Turnout

	Turnout in	
	State Election	National Election
	(1)	(2)
I(Sync = 1)	0.003	0.049***
	(0.009)	(0.010)
Controls	Yes	Yes
PC FE	Yes	Yes
GE-Year FE	Yes	Yes
Mean Dep. Var.	0.58	0.55
Number States	10	10
Observations	6,518	1,008

Notes: This table presents the effect of synchronized elections on turnout for state assembly elections (in Column (1)) and national elections (in Column (2)). All regressions control for the reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A.13—Synchronized Elections on Investment Activity

	Total Investment		
	Private	Govt.	Both
	(1)	(2)	(3)
Panel A: Synchronized Elections			
Sync	−0.009	0.004	−0.006
	(0.020)	(0.020)	(0.016)
Panel B: Synchronized Representation			
Same	0.009	0.004	0.009
	(0.006)	(0.007)	(0.007)
Time Trends	District	District	District
GE Year FE	Yes	Yes	Yes
Observations	5,847	5,847	5,847

Notes: The dataset takes a district $\times$ year panel for all columns. The variable Sync and Same measures the shares of assembly constituencies within the district which had a synchronized election and same party representation respectively. All variables are measured in per capita terms and are standardized ($1995-2018$). Standard errors are clustered at the State - GE Year level.

Table A.14—Synchronization Effects on Voting in Elections

	I(Voted in the Election = 1)			
	(1)	(2)	(3)	(4)
I(Sync = 1)	0.033***	0.027	0.018***	0.025*
	(0.004)	(0.026)	(0.007)	(0.013)
I(Sync = 1) x Age		0.0001		
		(0.001)		
I(Sync = 1) x Female			0.031**	
			(0.014)	
I(Sync = 1) x Education: Illiterate				0.025
				(0.018)
I(Sync = 1) x Education: Below Matric				0.0002
				(0.016)
Controls	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.896	0.896	0.896	0.896
Number Clusters	69	69	69	69
Observations	5,589	5,589	5,589	5,589

Notes: Standard errors are clustered at the State GE-Year level. Controls: Age (Column 2 only), log(Age) (Columns 1, 3 and 4); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.

Table A.15—Synchronization Effects with GE Turnout Gap

	I(Same Party = 1)	
	(1)	(2)
I(Sync = 1)	0.108***	0.100***
	(0.029)	(0.026)
I(Sync = 1) × I(GE Turnout Gap ≥ 75th percentile)	−0.050	
	(0.056)	
I(Sync = 1) × I(GE Turnout Gap ≥ 90th percentile)		−0.048
		(0.066)
Controls	Yes	Yes
PC FE	Yes	Yes
GE-Year FE	Yes	Yes
Mean Dep. Var.	0.43	0.43
Number Clusters	40	40
Number States	10	10
Observations	6,328	6,328

Notes: GE Turnout Gap measures the gap in turnout of the national election between a synchronized and an unsynchronized election. All regressions control for the reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency.

Table A.16—Synchronization Effects by Party

	I(Same Party = 1 & Party is)		
	National	INC	BJP
	(1)	(2)	(3)
I(Sync = 1)	−0.010	−0.030	−0.025
	(0.029)	(0.026)	(0.031)
Controls	Yes	Yes	Yes
PC FE	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes
Mean Dep. Var.	0.35	0.09	0.10
Number Cluster	40	40	40
Number States	10	10	10
Observations	6,530	6,530	6,530

Notes: A political party is defined as national, state or unrecognized by the Election Commission of India. We use this definition to define dependent variable as the joint probability of winning both elections and being the national party in the first column. The second and third columns are for Indian National Congress and Bharatiya Janata Party respectively. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency.

Table A.17—Synchronization Effects with Coattail Elections

	I(Same Party = 1)	
	(1)	(2)
I(Sync = 1)	0.081***	0.088***
	(0.030)	(0.028)
I(Sync = 1) × I(GE Win Margin ≥ 75th percentile)	0.063	
	(0.052)	
I(Sync = 1) × I(GE Win Margin ≥ 90th percentile)		0.084
		(0.072)
Controls	Yes	Yes
PC FE	Yes	Yes
GE-Year FE	Yes	Yes
Mean Dep. Var.	0.43	0.43
Number Clusters	40	40
Number States	10	10
Observations	6,530	6,530

Notes: All regressions control for the reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency.

Table A.18—Synchronization Effects with Reverse Coattail Elections

	I(Same Party = 1)	
	(1)	(2)
I(Sync = 1)	0.078***	0.089***
	(0.027)	(0.029)
I(Sync = 1) $\times$ I(AE Win Margin $\geq$ 75th percentile)	0.073	
	(0.044)	
I(Sync = 1) $\times$ I(AE Win Margin $\geq$ 90th percentile)		0.077
		(0.068)
Controls	Yes	Yes
PC FE	Yes	Yes
GE-Year FE	Yes	Yes
Mean Dep. Var.	0.43	0.43
Number Clusters	40	40
Number States	10	10
Observations	6,530	6,530

Notes: All regressions control for the reservation status of the constituency. Standard errors are clustered at the State GE-Year level, and estimates are weighted by the electorate size of the state assembly constituency.

Table A.19—Synchronization Effects on Visit by Political Party

	Party worker visited before elections?		
	Yes	No	Not Sure
	(1)	(2)	(3)
I(Sync = 1)	0.144***	−0.130***	−0.015*
	(0.042)	(0.034)	(0.009)
Controls	Yes	Yes	Yes
PC FE	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes
Mean Dep. Var.	0.442	0.54	0.018
Number Clusters	74	74	74
Observations	6,229	6,229	6,229

Notes: Survey Question– Did a party worker visit your house before elections? Standard errors are clustered at the State GE-Year level. Controls: log(Age); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.