# Between the Ballots: Understanding Concurrent Elections

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**Abstract**

This paper examines the effect of concurrent national and state elections on voter turnout, vote congruence, and electricity provision. Leveraging exogenous variation in election timing, we find that concurrent elections lead to: (i) higher voter turnout among women and in constituencies reserved for Scheduled Castes and Scheduled Tribes; (ii) a narrowing of the gap in party vote shares between national and state elections; and (iii) more pronounced fluctuations in electricity supply, as measured by nighttime luminosity, during election periods. These findings suggest that concurrent elections strengthen the linkage between voter choices in national and state elections, increasing electoral pressure on governments. In response, governments strategically adjust public good provision to influence voter behavior.

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# 1 Introduction

Most democracies have multiple levels of governments with elections held concurrently or sequentially. For example, Brazil conducts presidential, legislative, and gubernatorial elections concurrently, whereas Germany does not mandate automatic synchronization between national and provincial elections. The choice between these models carries important implications for voter behavior, electoral outcomes, and provision of public goods. Notably, research suggests that concurrent elections are associated with higher voter turnout (Garmann, 2016), greater incumbency advantage (de Benedictis-Kessner, 2018), and weaker interest group influence in policy-making (Anzia, 2011).

Concurrent elections present opportunities and challenges for both voters and governments alike. For voters, they offer the convenience of participating in multiple elections simultaneously, but also demand greater cognitive effort in making multiple decisions at once. In India, the focus of this paper, the average number of candidates per ballot increased from 4 in 1977 to 15 in 2019 for national elections and from 6 to 11 over the same period for state elections, making voting decisions increasingly complex. In concurrent elections, this challenge grows as voters must navigate two lengthy ballots at the same time. For governments, concurrent elections provide a means of reducing the cost of conducting elections. By consolidating elections to diverse offices into a single process, governments achieve economies of scale, reducing per-voter expenditures on election infrastructure, security, and personnel. However, this also reduces the frequency of democratic engagement and instead results in infrequent but politically tense election seasons with more offices at stake.

This paper examines how Indian voters and governments respond to the unique incentive structure created by concurrent elections. Exploiting the exogenous evolution of national and state election calendars, we estimate the effects of concurrence on voter turnout, vote congruence, and political cycles in electricity provision through state-owned distribution companies (DISCOMs). We find that concurrence increases turnout in national elections by 5.5 percentage point among women and 3.09 percentage points among men, compared to an average of 55.57% and 64.21%, respectively, in non-concurrent elections, bringing it in line with the already higher turnout in state elections. Turnout gains from concurrence are especially pronounced in constituencies reserved for Scheduled Castes and Scheduled Tribes, which have historically exhibited lower levels of voter participation. In addition, the absolute difference in a party's vote-share across national and state elections decreases by 3.45 percentage points in concurrent elections, indicating greater vote congruence. Using nighttime luminosity as a proxy, we further observe sharp fluctuations in electricity provision around concurrent elections, with declines in pre-election months followed by a surge during the election month. With national and state election outcomes becoming more closely tied, the concurrent scheduling of elections raises the stakes for politicians and governments, creating stronger electoral pressures. In response, governments have stronger incentives to strategically adjust public good provision to influence

voters, particularly in highly visible areas such as electricity supply. This effect is enabled by the structure of electricity distribution, which is almost entirely monopolized by state-owned DISCOMs, allowing state governments to exercise significant control over supply adjustments.

The Constitution of India provides for the division of legislative powers between the national parliament and twenty-eight state legislatures. The lower houses of the parliament and state legislatures, the *Lok Sabha* and *Vidhan Sabha*s, are composed of members elected from single-member territorial constituencies. Territorially, each *Lok Sabha* constituency comprises multiple *Vidhan Sabha* constituencies. Although elections to *Lok Sabha* and *Vidhan Sabha*s are supposed to be quinquennial, occasional shocks to the cycles can invite off-cycle elections. Such off-cycle elections generate variation in the degree of synchronicity of various *Vidhan Sabha* cycles with the *Lok Sabha* cycle, making some *Vidhan Sabha* elections concurrent and others non-concurrent with the *Lok Sabha* election.

India has the world's largest electorate and a growing turnout rate. The 2024 national elections, for example, had more than 977 million registered voters, 65.79% of whom turned out to vote. A total of 8359 candidates contested from 543 constituencies, either independently or representing a political party. As of September 2021, the total count of registered political parties stands at 2831. With its vast electorate, high voter participation, and the plurality of political parties, India presents a valuable context for exploring the nuances of voting behavior.

Indian elections are highly expensive due to their scale. The 2024 *Lok Sabha* elections alone incurred governmental expenses to the tune of 52 billion rupees (The Indian Express, 2023), and frequent state-level elections place a significant financial burden on the public exchequer. A high-level committee appointed by the Government of India observes that synchronizing elections would result in substantial cost savings (Government of India, 2024). Similarly, holding elections concurrently would reduce the need to allocate government machinery and public resources for election-related security and logistical requirements. The committee further notes that the adoption of concurrent elections "would shift the government's attention to developmental activities and the implementation of policies aimed at promoting the welfare of the masses," whereas, under a non-concurrent framework, central and state governments "tend to devote their time and resources towards the upcoming elections." Furthermore, the frequent enforcement of a model code of conduct across multiple elections is often cited as a cause of policy paralysis, which a synchronized electoral system could mitigate. However, critics argue that a concurrent election framework poses significant constitutional challenges. Several opposition parties have raised concerns that such a system could institute a presidential form of government, undermining the parliamentary form and federal structure of the constitution. Additionally, an argument has been put forth that concurrent elections may lead to uniformity in electoral outcomes at the national and state levels (Chakravarty, 2015; Balasubramaniam et al., 2023). These claims, both in favor of and against concurrent elections, warrant a comprehensive empirical assessment.

Our objective is to estimate the effect of concurrent elections on voter turnout, vote congruence, and nighttime luminosity. For identification, we exploit the variation in election timing across states. While both *Lok Sabha* and *Vidhan Sabha* elections follow quinquennial cycles, exogenous political events, such as premature dissolution of state governments, introduce asynchronicity, permanently resetting these cycles. As a result, some Vidhan Sabha elections coincide with Lok Sabha elections while others do not, and the event of concurrence is as good as random. This variation allows us to isolate the causal effect of concurrent elections on our outcome variables.

This paper is related to a literature that examines the role of election timing in shaping electoral outcomes. When elections to multiple offices are held concurrently, the cost of voting decrease, leading to higher turnout (Fauvelle-Aymar and François, 2015), a pattern observed across various electoral systems (Garmann, 2016, 2017; Cantoni et al., 2021). The increased turnout in concurrent elections reduces the influence of special interest groups on voting outcomes and, as a result, on government policy (Anzia, 2011). However, concurrent elections also introduce additional complexity, placing higher demands on voters by requiring them to process more information and evaluate multiple contests simultaneously. As a result, decision-making strategies may shift, favoring the use of heuristics, or mental shortcuts that simplify the choice process.

Classical theories of democracy assume that voters are fully rational and perfectly informed (Downs, 1957). In practice, however, acquiring and assessing political information is a demanding task, and voters circumvent the complexity of it by relying on various cues. These cues, such as a candidate's gender (McDermott, 1997), occupation (McDermott, 2005), or party affiliation (Dancey and Sheagley, 2013), reduce cognitive effort by offering quick, recognizable signals about candidate suitability (Lupia, 1994), akin to heuristic decision-making in other low-information environments (Benartzi and Thaler, 2007; Gigerenzer and Gaissmaier, 2011).

In a setting where more than one election is held concurrently, with multiple candidates from the same party facing the same electorate, party identification serves as a particularly useful heuristic for simplifying voting decisions. This pattern appears in coattail effects, where gubernatorial candidates enhance the support for co-partisans contesting to other offices (Meredith, 2013), and in local elections, where concurrent scheduling of mayoral and council elections benefits the mayor's party (Rudolph and Leininger, 2021). Closely related to our work, Balasubramaniam et al. (2023) demonstrates convergence of electoral outcomes at national and state elections when they are held concurrently.

Further, this paper is broadly related to the literature on the seemingly neutral factors, such as ballot format and voting technology, that affect voter behavior. One of the earliest studies in this area, Miller and Krosnick (1998) finds that candidates listed earlier on the ballot benefit from significant ballot-order-effects. Lee and Qi (2024) demonstrates that voters favor candidates who are assigned certain electoral symbols, particularly those representing household items.

Another study finds that the introduction of electronic voting has been associated with increased support for left-wing candidates (Fujiwara, 2015). Ballot design also affects voter behavior; when candidates from the same party are grouped together rather than listed individually by office, straight-ticket voting becomes more likely (Barnes et al., 2017).

We also contribute to a literature that demonstrates how governments adjust policies in response to electoral incentives. Nordhaus (1975) presents a theory of political business cycles, predicting that policymakers manipulate economic conditions to maximize electoral gains, leading to cycles in government spending, taxation, and public service provision. Empirical research documents election-driven fluctuations in economic growth (Potrafke, 2012), public expenditure (Akhmedov and Zhuravskaya, 2004; Sakurai and Menezes-Filho, 2011), tax policy (Klomp and de Haan, 2016), and legislation (Lagona and Padovano, 2008). Governments often target specific policies that directly affect voters, such as social spending (Bove et al., 2017), public employment (Dahlberg and Mörk, 2011), bank credit allocation (Frigerio and Vandone, 2020; Cole, 2009), and law enforcement (Berdejo and Yuchtman, 2013; Kubik and Moran, 2003; Bertoli and Grembi, 2021). In resource-constrained democracies, electricity provision is especially susceptible to political cycles. Min and Golden (2014) shows that governments redirect electricity to flat-rate users before elections, leading to a loss of revenues. Closer to our work, Baskaran et al. (2015) exploits exogenous occurrence of special elections to find election-year effects in electricity provision in India. We differentiate our work by utilizing monthly data rather than annual aggregates, capturing finer temporal variations in policy adjustments. Further, we document the heterogeneous effects of concurrent elections, an aspect that, to the best of our knowledge, has not received attention in the current literature.

This paper extends existing research by providing a more comprehensive analysis of how voters and politicians respond to the distinct incentive structures presented by concurrent elections. While prior studies have examined the effects of election timing on turnout, vote choice, and policy cycles, they have largely considered these factors in isolation. The question of electoral timing has gained renewed significance as certain democracies, such as India, are considering a transition from a non-concurrent electoral framework to a concurrent election system (PIB, 2025). By leveraging exogenous variation in electoral calendars, we demonstrate the relationship between election timing, voter behavior, and government activity, offering a framework to understand how electoral procedures and administration influence both political competition and public policy outcomes.

The rest of this paper is organized as follows. Section 2 provides the details of the institutional setting, Section 3 deals with the sources and preparation of data, Section 4 describes the empirical model, Section 5 discusses the results, and Section 6 concludes the paper.

# 2 Background

## 2.1 Elections in India

India follows a parliamentary form of government where the government is formed and sustained by the confidence of a popularly elected parliament. The national parliament consists of two chambers: a lower house, called *Lok Sabha*, composed of members elected by popular vote, and an upper house, called *Rajya Sabha*, composed of representatives elected by state legislatures.[1] The parliament is responsible for passage of national laws including the annual financial statement of the government. Importantly, the party, or the coalition of parties, that wins the majority of seats in the *Lok Sabha* forms the central government with its leader as the prime minister. The government remains in power for a tenure of five years conditional on the confidence of the *Lok Sabha*. State legislatures consist of a popularly elected lower house, the *Vidhan Sabha*, and an optional upper house, the *Vidhan Parishad*, elected by a limited electorate. Their functions and relationship to the government are analogous to those of the national parliament. The party or coalition that enjoys majority in *Vidhan Sabha* forms the government with its leader as the chief minister.

The total geographic area of the country is divided into 543 *Lok Sabha* constituencies whereas the number of *Vidhan Sabha* constituencies varies from state to state. Territorially, a typical *Lok Sabha* constituency comprises six to eight *Vidhan Sabha* constituencies, each fitting entirely within its boundaries. Elections to both *Sabha*s are based on universal adult suffrage and the first-past-the-post system. The Election Commission of India (ECI), a non-political agency with constitutional mandate, oversees the process.

Candidature is open to registered voters above the prescribed age of 25. The ECI classifies political parties into national, state-based and local parties depending on the geographical spread of their influence. Candidates fielded by parties, when elected, are bound to abide by the directives of the party while voting in the legislature.

The elected candidates are expected to act as "people's representatives" inside and outside the legislature. They attend legislative sessions, participate in debates and contribute to law-making. Besides, a member of *Lok Sabha* or *Vidhan Sabha* is viewed by the public as a key stakeholder in the economic development of her constituency. From securing administrative sanction to facilitating the release of funds, she coordinates local development projects in formal and informal capacities. In addition, the Member of Parliament Local Area Development Scheme (MPLADS) allows a member of the *Lok Sabha* to recommend projects to the tune of fifty million rupees in her constituency. Similar schemes for *Vidhan Sabha* members exist in many states as well. A legislator also maintains regular communication with her constituents and intervenes to address their concerns. Effective discharge of these responsibilities places significant demands on her personal efficacy. Thus, the electoral outcome in a constituency has implications for

[1] The terms *Lok Sabha* and *Rajya Sabha* translate to House of People and Council of States, respectively.

government formation, the quality of legislative process, and local economic development.

Several measures have been adopted in the past to facilitate informed voting decisions. All candidates contesting an election are required by the law to submit before the ECI an affidavit containing information on their educational qualifications, assets and liabilities, and criminal charges pending against them. Representation of the People Act, 1951, the law governing elections, prohibits any attempt by the candidates to exercise undue influence over the electors. The ECI regulates and monitors campaign expenses by the candidates with a view to limiting the influence of money in elections. Further, the ECI has instituted a model code of conduct that seeks to prevent the candidates and parties from resorting to unfair means.

## 2.2 Election Timing

Both *Lok Sabha* and *Vidhan Sabha*s have a tenure of five years the end of which calls for fresh elections. However, the Constitution permits early dissolution of the *Lok Sabha* on the recommendation of the central government, and of the *Vidhan Sabha* on the recommendation of the state government. Besides, the central government has the authority to recommend imposition of President's rule in a state on the grounds of failure of constitutional machinery. Such disruptions in the standard five-year cycles invite off-cycle elections.

The first set of *Vidhan Sabha* elections in independent India, conducted in 1951-52, coincided with the inaugural *Lok Sabha* election. Another batch of states, newly formed in 1956, had their first *Vidhan Sabha* elections concurrently with the *Lok Sabha* election of 1957. That is, at the outset, *Vidhan Sabha* elections in all major states were concurrent with the *Lok Sabha* elections. However, this synchronicity was disrupted in later years by several instances of off-cycle elections. Consider, for example, the case of two states, Kerala and Odisha, that had concurrent elections in 1957. Instead of another concurrent election in 1962 as per the election calendar, Kerala had its next election, non-concurrent, in 1960, after a brief period of President's rule imposed in 1959. Odisha had its next election in 1961 following the dissolution of its *Vidhan Sabha* due to differences within the ruling party. Off-cycle elections to *Lok Sabha*, too, can affect concurrence. For instance, the states that had concurrent elections in 1967 had to go for non-concurrent elections in 1972 as the subsequent *Lok Sabha* election was advanced to 1971.

Figure 1 illustrates the evolution of election cycles since 1974. For any state in a given year, a black, gray or white grid indicates a concurrent election, a non-concurrent election or a non-election year, respectively. Two points are apparent. First, the timing of elections does not strictly adhere to the five-year cycle. At least some elections, to *Vidhan Sabha*s as well as the *Lok Sabha*, take place off-cycle. Second, each off-cycle election resets the cycle permanently and affects the timing of future elections. This fact is key to understanding the variation in concurrence within and across states: as the *Loksabha* and *Vidhan Sabha* cycles evolved individually through disruptions from time to time, their relationships to one another

undergo fresh readjustments, resulting in varied patterns of concurrence and non-concurrence.

### 2.3 Political Business Cycles

According to political business cycle theory, governments may adjust the allocation of resources to influence voter perceptions, particularly in the period leading up to elections (Nordhaus, 1975). The recency effect in political psychology suggests that voters are more likely to reward politicians for recent improvements in service delivery, making such adjustments electorally beneficial (Fair, 1978; Caplan, 2011; Cole et al., 2012). The incentive to do so is even stronger when multiple elections occur concurrently, as the political stakes are higher.

Electricity is a key resource in this context. As a concurrent subject under the Constitution, both central and state governments have legislative authority over it. However, electricity distribution remains largely monopolized by state-owned DISCOMs, with exceptions in a few cities.[2] Many of these entities operate under severe financial strain, constraining their capacity to procure power. In 2012-13, the final year of our dataset, India faced an energy deficit of 8.7% and a peak deficit of 9.0% (Government of India, 2025). Chronic supply shortages, often managed through load shedding, make electricity a scarce resource, particularly susceptible to election-driven interventions. With state governments exercising considerable control over distribution, they are well-positioned to adjust supply by prioritizing election-bound areas.

However, such electoral cycles in electricity distribution may come at a cost. If supply is reallocated toward election periods, it may lead to reduced provision in other months, creating inefficiencies in resource management. This can have broader economic consequences, particularly for industries and households that rely on a stable power supply. Additionally, frequent political interventions in electricity distribution may undermine long-term reliability, encouraging short-term fixes over sustainable planning.

## 3 Data

### 3.1 Elections

The Election Commission of India publishes statistical reports on all *Vidhan Sabha* and *Lok Sabha* elections since 1951. These reports contain comprehensive information on the electoral results at the constituency level and the performance of individual candidates. For *Lok Sabha* elections since 1999, data is available at the level of *Vidhan Sabha* segments. The information from these reports as compiled and augmented by Agarwal et al. (2021) constitute our main dataset. The constituency numbers assigned by the Election Commission are not consistent over time. To resolve this, we use location identifiers from Asher et al. (2021). For the analysis of turnout, we consider elections during the period from 1974 to 2023, the period for which

[2]Exceptions include Delhi, Mumbai, Ahmedabad, and Kolkata.

consistent location identifiers are available. For the analysis of vote congruence, we restrict our focus to elections since 1999, since *Vidhan Sabha* segment-level data is not available for *Lok Sabha* elections prior to 1999. We further exclude states with too few *Lok Sabha* constituencies.[3]

We begin with two candidate-level datasets on *Vidhan Sabha* and *Lok Sabha* elections. Since the *Lok Sabha* constituencies are larger, we disaggregated the electoral data at the *Vidhan Sabha* constituencies before merging the two datasets. [4] Subsequently, we match *Vidhan Sabha* candidates with their co-partisans in the closest *Lok Sabha* election by party name. Note that, for any *Vidhan Sabha* election, we define the closest *Lok Sabha* election as the one that immediately precedes or follows it, whichever is nearer. The resultant dataset allows us compute the outcome variable,

$$\Delta\text{Voteshare}_{pcst} = \left|\text{Voteshare}_{pcst,\textit{Vidhan Sabha}} - \text{Voteshare}_{pcs\tau,\textit{Lok Sabha}}\right| \tag{1}$$

where $\text{Voteshare}_{pcst,\textit{Vidhan Sabha}}$ denotes the vote-share of a party $p$ from a *Vidhan Sabha* constituency $c$ of state $s$ in a *Vidhan Sabha* election at time $t$, and $\text{Voteshare}_{pcs\tau,\textit{Lok Sabha}}$ denotes the vote-share of $p$ in the closest *Lok Sabha* election, but from the same *Vidhan Sabha* segment. Here, the closest *Lok Sabha* election is that which takes place at time $\tau$ such that $|t-\tau|$ is the minimum among all *Lok Sabha* elections.

Figure 2 illustrates this through the example of three consecutive elections in a representative *Lok Sabha* constituency: a *Lok Sabha* election at $t-\delta_1$, a *Vidhan Sabha* election at $t$, and another *Lok Sabha* election at $t+\delta_2$. The grey region corresponds to a specific *Vidhan Sabha* segment within this *Lok Sabha* constituency, and $\text{Voteshare}_{p,i}$, $i \in \{t-\delta_1, t, t+\delta_2\}$, is the vote-share of the party $p$ from this region in each of these elections. If $\delta_1 < \delta_2$, we compare $\text{Voteshare}_{p,t-\delta_1}$ and $\text{Voteshare}_{p,t}$. Else, we compare $\text{Voteshare}_{p,t}$ and $\text{Voteshare}_{p,t+\delta_2}$.

The final data covers 54,835 *Vidhan Sabha* candidates from 507 parties across 20 major states in India. Each of these observations is linked to a co-partisan in the closest *Lok Sabha* election. Table 1 summarizes the main variables, separately for concurrent and non-concurrent elections. The number of observations from concurrent and non-concurrent elections are 10,352 and 44,483, respectively.

## 3.2 Nighttime Luminosity

Prior research has established that nighttime luminosity data serves as a reliable proxy for electricity consumption (Baskaran et al., 2015; Min, Brian and Gaba, Kwawu Mensan, 2014). Building on this, we utilize luminosity data from the United States Defense Meteorological

[3]These states include Arunachal Pradesh, Delhi, Goa, Jammu Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Pondicherry, Sikkim, and Tripura.

[4]We map the constituencies in the *Vidhan Sabha* data to their counterparts in the *Lok Sabha* data through fuzzy-matching by name. Stata's *matchit* program uses a combination of string-based matching techniques. See Raffo (2020).

Satellite Program (DMSP) to examine electoral cycles in electricity provision. The DMSP captures images of the Earth's surface twice daily at a spatial resolution of 30-arc seconds, covering longitudes from -180 to 180 degrees and latitudes from -65 to 75 degrees. We obtain monthly averaged luminosity data from Earth Observation Group (2025) and aggregate it at the constituency level using electoral boundaries provided by Sukhtankar (2011).[5] This process yields a constituency-level monthly panel of nighttime luminosity spanning 1992–2013.[6] Luminosity values are recorded on a 63-point scale, with a mean of 3.12 and a standard deviation of 4.73.

# 4 Empirical Model

## 4.1 Voter Turnout

To estimate the effect of concurrent election calendars on voter turnout, we estimate

$$\text{Turnout}_{cst} = \beta\ \text{Concurrence}_{st} + \mathbf{X}_{cst}\phi + \gamma_s + \omega_t + \theta_s t + \varepsilon_{cst} \tag{2}$$

where $\text{Turnout}_{cst}$ represents voter turnout in percentage terms in constituency $c$ in state $s$ and year $t$. $\text{Concurrence}_{st}$ takes value one if the *Vidhan Sabha* elections are held concurrently with *Lok Sabha* elections, and zero otherwise. $\mathbf{X}$ is a vector of controls that includes the number of electors and contestants, and the turnout in the previous election. State and year fixed effects are captured by $\gamma_s$ and $\omega_t$, respectively. $\theta_s t$ captures state-specific linear time trends. A positive $\beta$ would imply higher voter turnout in concurrent elections. We estimate a similar specification for *Lok Sabha* elections.

We further estimate

$$\begin{aligned}\text{Turnout}_{cst} = {} & \beta_1\ \text{Concurrence}_{cst} \times \text{SCReserved}_{cst} + \beta_2\ \text{Concurrence}_{cst} \times \text{STReserved}_{cst} + \\ & \beta_3\ \text{Concurrence}_{cst} + \beta_4\ \text{SCReserved}_{cst} + \beta_5\ \text{STReserved}_{cst} + \\ & \mathbf{X}_{cst}\phi + \gamma_s + \omega_t + \theta_s t + \varepsilon_{cst},\end{aligned} \tag{3}$$

where $\text{SCReserved}_{cst}$ and $\text{STReserved}_{cst}$ are binary variables that take value one for constituencies reserved for Scheduled castes and Scheduled tribes, respectively, and zero otherwise.

The variation in concurrence within and across states is generated by several disruptions of election cycles at the levels of *Lok Sabha* and *Vidhan Sabha*. The circumstances that resulted in

[5]For this purpose, we follow constituency boundaries corresponding to the 1974–2007 period, known as the Third Delimitation. The Fourth Delimitation, which introduced a new set of boundaries, came into effect for elections held after 2007.

[6]We restrict our analysis to this period because data from 2014 onward, captured by a different sensor (VIIRS), are not directly comparable to earlier observations. For individual constituencies, we further restrict the data to months preceding the first election following the fourth delimitation, with election dates varying between May 2008 and December 2012.

such disruptions usually include coalition failures and dismissal of state governments by the central government. Since the election cycle of each *Vidhan Sabha* is shaped by a series of such shocks in the past, its proximity to the *Lok Sabha* cycle is plausibly exogenous. One caveat here is that state governments have the option to achieve or evade concurrence by calling for off-cycle elections. A state expecting a non-concurrent election can dissolve its *Vidhan Sabha* prematurely and advance elections in order to concur with the *Lok Sabha* election. Similarly, a state expecting a concurrent election can go for early elections in order to evade concurrence. Such possibilities leave room for strategic manipulation of election timings, making concurrence potentially endogenous.

To address this concern, we show that state governments rarely dissolve *Vidhan Sabhas* prematurely to align their elections with the *Lok Sabha*. Doing so requires them to forgo the remaining portion of their five-year tenure, making it a costly decision. Figure 3 illustrates the distribution of tenure forgone in cases where *Vidhan Sabha* elections were held concurrently with *Lok Sabha* elections. Panel (a) covers all such elections since 1974, panel (b) focuses on those that were originally off-cycle, and panel (c) considers elections since 1999. In all cases, the distribution is strongly right-skewed, indicating that instances where substantial tenure is sacrificed for the sake of concurrence are relatively rare. Figure 4 establishes this point further. It plots the probability that a *Vidhan Sabha* exits through a concurrent election against the number of quarters it completed in office. Notably, for the period since 1999, the probability of concurrence is statistically distinguishable from zero only for *Vidhan Sabha*s that are in the last three months of their tenure.

Regular elections with fixed terms impart stability to the political system. The failure of a government to complete its tenure may adversely affect the reputation of the incumbent party. Moreover, the loss of tenure itself can be politically costly. Therefore, a state government may advance elections to achieve concurrence only when the cost, in terms of lost tenure, is minimal. This pattern, revealed by Figure 3 and Figure 4, suggests that concurrence of *Lok Sabha* and *Vidhan Sabha* elections is better explained by standard election cycles than strategic deviations from them.

A second threat to exogeneity comes from off-cycle state elections that evade concurrence. There are only three such cases, and two of them are preceded by President's rule.[7] Hence, there is little evidence for this channel of endogeneity.

In summary, our argument for the exogeneity of concurrence proceeds as follows. Concurrence of *Vidhan Sabha* and *Lok Sabha* elections is primarily due to *Vidhan Sabha* cycles that closely follow the *Lok Sabha* cycle. The proximity of the two cycles, in turn, is a consequence of several exogenous shocks in the past. Since it is unusual for a confounder to track the same pattern, concurrence of the two elections is a plausibly exogenous event.

[7]These cases include Uttar Pradesh (1993), Karnataka (2008), and Telangana (2014)

## 4.2 Vote Congruence

Our objective is to compare voters' reliance on party heuristics in concurrent and non-concurrent elections. Since the behaviour of individual voter is not directly observable, we infer it from aggregate vote-shares. Formally, we estimate

$$\Delta\text{Voteshare}_{pcst} = \beta\ \text{Concurrence}_{cst} + \mathbf{X}_{cst}\phi + \gamma_s + \omega_t + \varepsilon_{pcst} \tag{4}$$

where $\Delta\text{Voteshare}_{pcst}$ is the absolute difference in the vote-shares of political party $p$ from the region of *Vidhan Sabha* constituency $c$ in state $s$ in the *Vidhan Sabha* election held in year $t$ and the closest *Lok Sabha* election. $\text{Concurrence}_{cst}$ takes value one if the *Vidhan Sabha* elections are held concurrently with *Lok Sabha* election, and zero otherwise. $\mathbf{X}$ is a vector of controls that includes the effective number of parties in both elections.[8] State and year fixed effects are captured by $\gamma_s$ and $\omega_t$, respectively. Under the assumption that concurrence is exogenous, a negative $\beta$ would mean that voters in concurrent elections are less likely to discriminate between two candidates fielded by the same party.

## 4.3 Nighttime Luminosity

To examine the electoral cycles in nighttime luminosity, we estimate the following model:

$$\begin{aligned}\text{Lights}_{cstm} = \beta_1\ \text{ElectionMonth}_{cstm} + \beta_2\ \text{ConcurrentElectionMonth}_{cstm} + \\ \theta_c + \omega_t + \phi_m + \gamma_c t + \varepsilon_{cstm},\end{aligned} \tag{5}$$

where $\text{ElectionMonth}_{cstm}$ is a binary variable that takes value one if the *Vidhan Sabha* constituency $c$ in state $s$ held either a *Vidhan Sabha* or *Lok Sabha* election in month $m$ of year $t$, and zero otherwise. $\text{ConcurrentElectionMonth}_{cstm}$ is a binary variable equal to one if constituency $c$ in state $s$ held both *Vidhan Sabha* and *Lok Sabha* elections concurrently in month $m$ of year $t$, and zero otherwise. Our interest is in the comparison of $\beta_1$ and $\beta_2$, where $\beta_2 > \beta_1$ would indicate stronger electoral cycles during concurrent elections.

# 5 Results

## 5.1 Voter Turnout

We first examine the impact of election concurrence on voter turnout. Figure 5 shows that turnout has historically been lower among women and in constituencies reserved for Scheduled Castes and Scheduled Tribes. Our objective is to examine whether concurrent elections help bridge this gap in participation.

[8] Following Laakso and Taagepera (1979), effective number of parties is calculated as $\frac{1}{\sum_{i=1}^{n} p_i^2}$, where $p_i$ is the vote-share of the $i$-th party with non-zero votes.

Table 2 presents estimates from Equation (2), examining the association between election concurrence and voter turnout, disaggregated by gender and election type. Columns (1)–(3) report results for *Vidhan Sabha* elections, while columns (4)–(6) pertain to *Lok Sabha* elections. In *Lok Sabha* elections, concurrence is associated with a 4.25 percentage point increase in overall turnout (column 4), statistically significant at the 1% level. The increase is more pronounced among women (5.50 percentage points, column 5), compared to men (3.09 percentage points, column 6). In *Vidhan Sabha* elections, point estimates are smaller and not statistically significant. Standard errors are clustered at the state level.

For *Vidhan Sabha* elections, the effect of concurrence is positive but not statistically significant. Interestingly, *Vidhan Sabha* elections exhibit higher average turnout than *Lok Sabha* elections during non-concurrent cycles, with a difference of about 3.35 percentage points. This gap narrows in concurrent elections. One possible explanation is that voters may find *Vidhan Sabha* elections more salient, as they are often decided by narrower margins than *Lok Sabha* elections, as shown in Figure 6. This pattern contrasts with prior findings, which generally report higher turnout in lower-tier elections when held concurrently with higher-tier ones (Garmann, 2016, 2017; Cantoni et al., 2021).

Table 3 presents estimates from Equation (3), examining how the effect of election concurrence on voter turnout varies across different types of constituencies. Columns 1 and 2 report results for *Vidhan Sabha* and *Lok Sabha* elections, respectively. Turnout is significantly lower in constituencies reserved for Scheduled Castes (SC) and Scheduled Tribes (ST), with baseline gaps ranging from 0.93 to 2.31 percentage points. However, the interaction terms show that concurrence substantially offsets this gap. In SC-reserved constituencies, concurrence is associated with an additional increase in turnout of 1.20 percentage points for *Vidhan Sabha* and 2.11 percentage points for *Lok Sabha* elections, both statistically significant at the 1% level. The effects are even larger in ST-reserved constituencies: 3.32 percentage points for *Vidhan Sabha* and 4.87 percentage points for *Lok Sabha* elections. These results suggest that concurrent elections are particularly effective in increasing turnout in constituencies with historically lower participation rates.

## 5.2 Vote Congruence

We now turn to the relationship between concurrence and vote congruence using a party-level dataset. Table 4 estimates the extent to which a party's vote-share aligns across *Lok Sabha* and *Vidhan Sabha* elections within the same *Vidhan Sabha* constituency. By comparing concurrent and non-concurrent elections, we assess whether concurrent elections encourage voters to base their choices more on party identification rather than candidate-specific factors.

We find that concurrence of *Lok Sabha* and *Vidhan Sabha* elections leads to a decrease in the absolute difference in the vote-shares of a party in both elections. Table 4 reports the results from Equation (4). Column 1 estimates Equation (4) without controls, column 2 includes state

and year fixed effects, and column 3 includes additional controls for the effective number of parties contesting to *Lok Sabha* and *Vidhan Sabha*. Standard errors are clustered at the level of states. Results from the preferred specification suggest that the absolute difference in the vote-shares of a party in *Lok Sabha* and *Vidhan Sabha* elections for a constituency decreases by 3.45 percentage points ($p = 0$) when the two elections are held concurrently. Note that the mean absolute difference in vote-shares for non-concurrent elections is 7.70 percentage points.

For a visual summary of this result, Figure 7 plots the vote-share of a party in *Vidhan Sabha* election for a constituency against its vote-share in the closest *Lok Sabha* election from the same constituency. Panel (a) representes non-concurrent elections while panel (b) represents concurrent elections. We observe that, in panel (b), the circles tend to concentrate around the 45-degree line for the entire range of vote-shares, suggesting systematic congruence of vote-shares in concurrent elections. This pattern of greater alignment of votes along party lines indicates that concurrence of elections induces voters to base voting decisions on party identification rather than the characteristics of individual candidates.

In a placebo test, we estimate Equation (4) for randomized values of $\text{Concurrence}_{cst}$. Figure 8 plots the size of coefficients on $\text{Concurrence}_{cst}$ for thousand iterations. All placebo estimates tend to be close to zero and starkly different from the actual estimate represented by the vertical line. This shows that our results do not indicate a spurious correlation between concurrence and absolute difference in vote-shares.

Table 5 reports the results from various robustness checks. Column 1 estimates Equation (4) excluding the two largest parties, Indian National Congress (INC) and Bhartiya Janata Party (BJP), and obtains nearly similar results. That is, the negative effect of concurrence on the absolute difference in vote-shares is not specific to the major parties. Column 2 excludes all observations for which the absolute difference in vote-shares is greater than 20 percentage points. The coefficient on concurrence drops in magnitude, but remains negative and significant, suggesting that the main result is unlikely to be driven by outliers. Finally, Column 3 estimates Equation (4) with a broader set of controls including the number of candidates contesting the *Lok Sabha* and *Vidhan Sabha* elections, incumbency and total number of valid votes. The coefficient on $\text{Concurrence}_{cst}$ remains negative, statistically significant and nearly unchanged in magnitude.

We argue that the increasing congruence of vote-shares in concurrent elections is best explained by voters' reliance on party heuristics. To substantiate this, we test and reject several alternative explanations. When two elections are held at different points in time, the intervening period may allow for shifts in the distribution of partisan preferences, leading to variation in vote shares. In concurrent elections, partisanship remains static, resulting in greater congruence in vote shares. If our results were driven by this effect, we would expect it to hold not only for concurrent elections but also for elections that are held within a short interval of time. To test this, we estimate Equation (4) after replacing $\text{Concurrence}_{cst}$ with a binary variable that takes value one if the elections are held within an interval of six months and zero otherwise. Column

1 of Table 6 reports the results from this regression. Conducting two elections within an interval of six months has no effect on the congruence of vote-shares.

A second explanation for the congruence of vote-shares in concurrent elections lies in the geographical scope of political parties. Some parties, like the INC and BJP, have a nationwide presence and are classified by the ECI as national parties, whereas parties like the Trinamool Congress (TMC) in West Bengal or the Dravida Munnetra Kazhagam (DMK) in Tamil Nadu operate primarily within specific states and are considered state-based parties.[9] If national parties systematically perform better in *Lok Sabha* elections due to their broader appeal, this advantage may spill over into the *Vidhan Sabha* election when both are held concurrently. For instance, if the BJP benefits from a strong national campaign in a *Lok Sabha* election, this effect may carry over to the *Vidhan Sabha* election in the same state, strengthening its position there as well. Similarly, a strong state-based party like the DMK in Tamil Nadu might dominate *Vidhan Sabha* elections, and if *Lok Sabha* elections are held together with them, its dominance could extend to both. If this explanation is correct, we would expect the effect of concurrence on the absolute difference in vote-shares to disappear in cases where the top two contestants in both elections within a constituency belong to parties of the same type (either both national or both state-based). For example, if a constituency sees a contest between two national parties like INC and BJP in both elections, or between two state-based parties like the Samajwadi Party (SP) and Bahujan Samaj Party (BSP) in Uttar Pradesh, concurrence would not introduce additional vote congruence beyond what is naturally expected. To indicate such cases, we define a binary variable $\text{SameType}_{cst}$ which takes value one if both of the top two contestants are either national parties or state-based parties. We regress,

$$\begin{aligned}\Delta\text{Voteshare}_{pcst} = \beta\ &\text{Concurrence}_{cst} \times \text{SameType}_{cst} \\ &+ \theta\ \text{Concurrence}_{cst} + \delta\ \text{SameType}_{pcst} \\ &+ \mathbf{X}_{cst,\tau}\phi + \gamma_s + \omega_t + \varepsilon_{pcst}\,.\end{aligned} \tag{6}$$

Column 2 of Table 6 reports the results from this regression. The effect of concurrence on vote congruence persists even when both contestants are from the same party type.

Finally, we examine whether the congruence of vote shares is driven by a similarity of candidate characteristics. If concurrence induces parties to field candidates with similar characteristics in *Lok Sabha* and *Vidhan Sabha* elections, the congruence of vote-shares may simply be a consequence of this similarity. We show that candidate turnover does not follow a pattern that supports this explanation. Let $C_{pcst} = \{V_{pcst}, L_{pcs\tau}\}$ be the pair of *Lok Sabha* and *Vidhan Sabha* candidates fielded by a party $p$. Define $\text{Turnover}_{pcst}$ to takes value one if $C_{pcst} \neq C_{pcst'}$, where $t'$ is the year of previous *Vidhan Sabha* election, and zero otherwise. We regress,

$$\text{Turnover}_{pcst} = \beta\ \text{Change}_{cst} + \mathbf{X}_{cst,\tau}\phi + \gamma_s + \omega_t + \varepsilon_{pcst} \tag{7}$$

[9]Formally, a national party is recognized in at least four states, or secures 6% of valid votes in at least four states with at least four *Lok Sabha* MPs, or wins 2% of *Lok Sabha* seats from at least three states.

where $\text{Change}_{cst}$ takes value one if the *Vidhan Sabha* election is concurrent at $t$, but not at $t'$. If parties tend to field similar *Lok Sabha* and *Vidhan Sabha* candidates in concurrent elections, we would expect higher probability of candidate turnover in concurrent elections that follow a non-concurrent election. On the contrary, column 3 of Table 6 shows that the probability of turnover is lower for such elections.

### 5.3 Nighttime Luminosity

We analyze the effect of elections on nighttime luminosity, focusing on whether concurrent elections amplify this effect. Recall that, in Equation (5), $\beta_1$ and $\beta_2$ represent the effects of non-concurrent and concurrent elections, respectively, on night-time luminosity.

Table 7 presents the results from Equation (5). Column 1 reports estimates using mean nighttime luminosity as the dependent variable. The coefficient on the election month variable is 0.31 ($p = 0$) and is statistically significant at the 1% level. Similarly, the coefficient on the concurrent election month variable is 0.57 ($p = 0$) and is also significant at the 1% level. The difference between these estimates is statistically significant at the 1% level, indicating that the increase in nighttime luminosity during election months is more pronounced in concurrent elections.

To explore the underlying mechanism, we estimate a broader specification that includes to lags and two leads of the election month and concurrent election month variables. The results, shown in column 2 of Table 7 and Figure 9, reveal a distinct pattern: nighttime luminosity increases in the election month and declines afterward, with a sharper rise and fall in concurrent elections (panel b) compared to non-concurrent elections (panel a). These results confirm the findings of Baskaran et al. (2015) on electoral cycles in electricity provision but emphasize the sharper fluctuations in nighttime luminosity during concurrent elections.

## 6 Conclusions

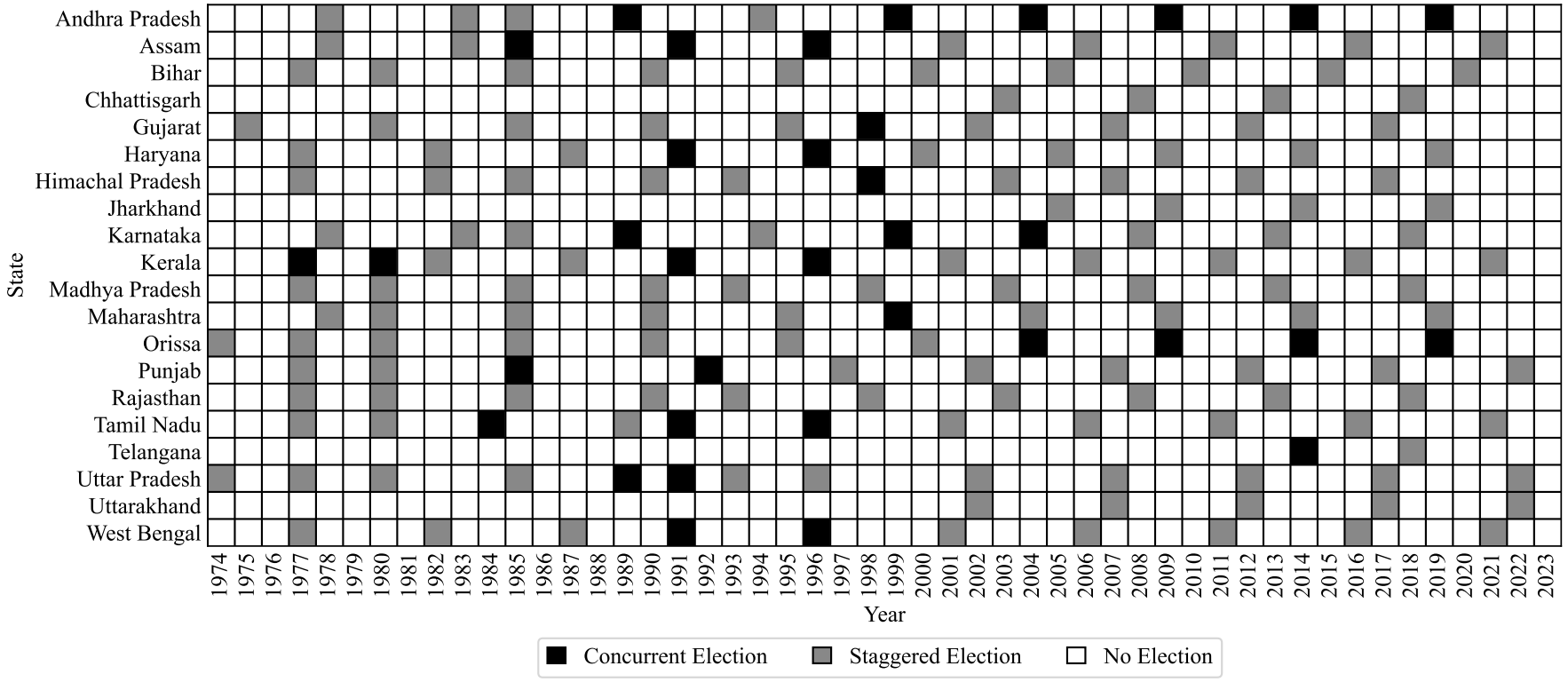
This paper provides evidence on how concurrent elections influence voter behavior and government activity in India. By leveraging exogenous variations in election timing, we find that concurrence of elections increases voter turnout in national contests, particularly among women and in constituencies reserved for disadvantaged groups, bridging the participation gap between national and state elections. Further, the absolute difference in a party's vote-share between national and state contests decreases by 3.50 percentage points. Thus, concurrent scheduling of national and state elections leads to greater alignment in both voter participation and electoral outcomes.

Additionally, we examine whether concurrence of elections affects government behavior in public good provision. We find that electricity provision, proxied by nighttime luminosity, increases during election months, with a significantly larger effect in concurrent elections. This

rise is followed by a decline in the subsequent months, a trend that is more pronounced in concurrent elections. These results suggest that when elections are concurrent, the higher electoral stakes may incentivize governments to strategically time public good provision, potentially at the cost of efficiency.

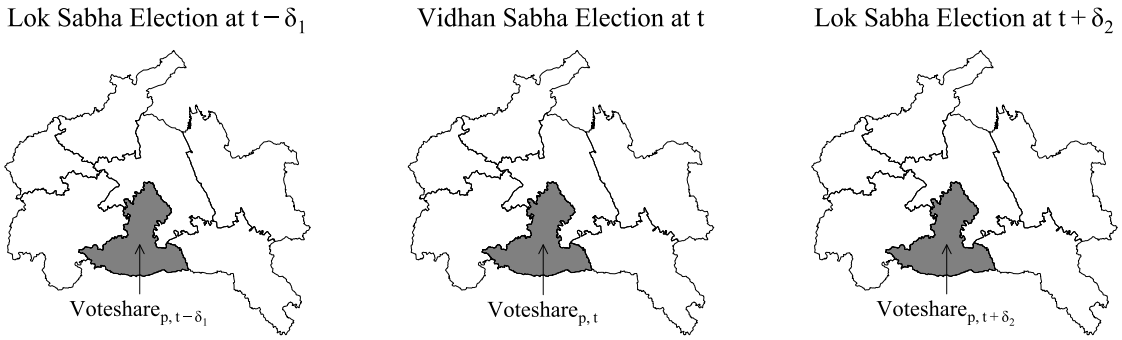
# Figures

FIGURE 1: Timing of *Vidhan Sabha* Elections



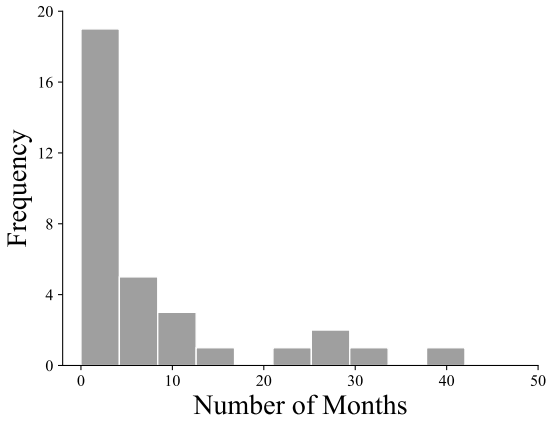

Note: Each row in the table illustrates the patterns in concurrence of elections for a state. A black, gray or white grid-cell indicates a concurrent, non-concurrent, or no-election year, respectively.

FIGURE 2: Constituencies, Elections and Vote-shares

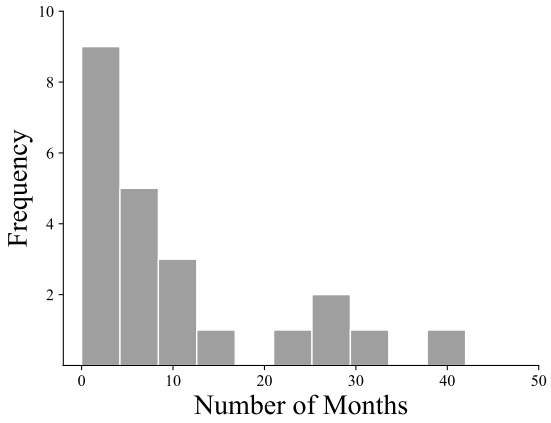



Note: This figure illustrates three consecutive elections in a representative *Lok Sabha* constituency: a *Lok Sabha* election at $t-\delta_1$, a *Vidhan Sabha* election at $t$, and another *Lok Sabha* election at $t+\delta_2$. The grey region corresponds to a specific *Vidhan Sabha* segment within the *Lok Sabha* constituency, and $\text{Voteshare}_{p,i}$, $i \in \{t-\delta_1, t, t+\delta_2\}$, is the vote-share of the party $p$ from this region in each of these elections. If $\delta_1 < \delta_2$, we compare $\text{Voteshare}_{p,t-\delta_1}$ and $\text{Voteshare}_{p,t}$. Else, we compare $\text{Voteshare}_{p,t}$ and $\text{Voteshare}_{p,t+\delta_2}$.

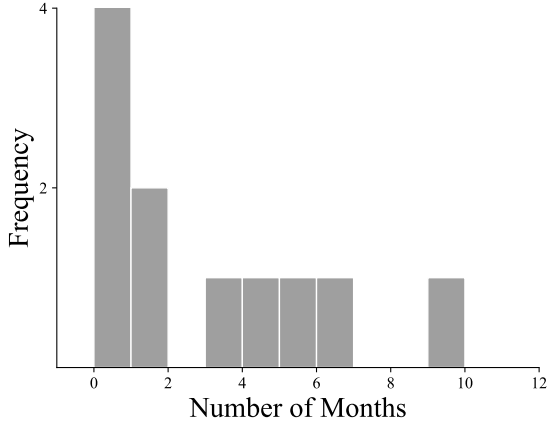
FIGURE 3: Legislative Tenure Lost due to concurrent Elections




(a) *Vidhan Sabha* Elections since 1974



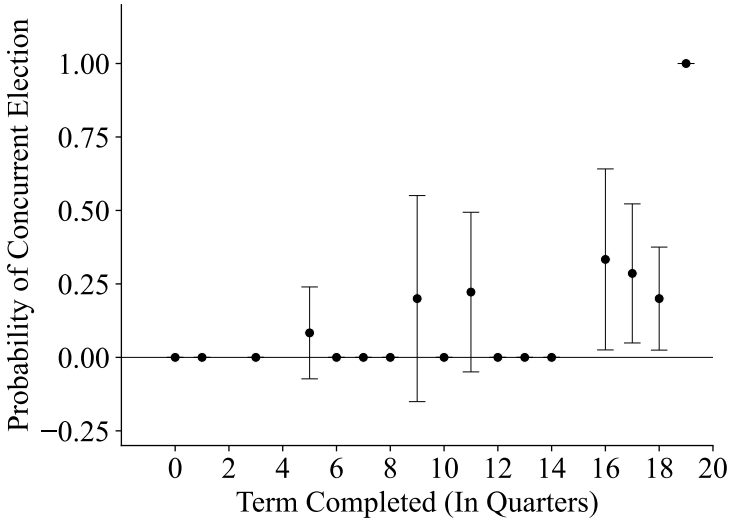

(b) Off-Cycle *Vidhan Sabha* Elections



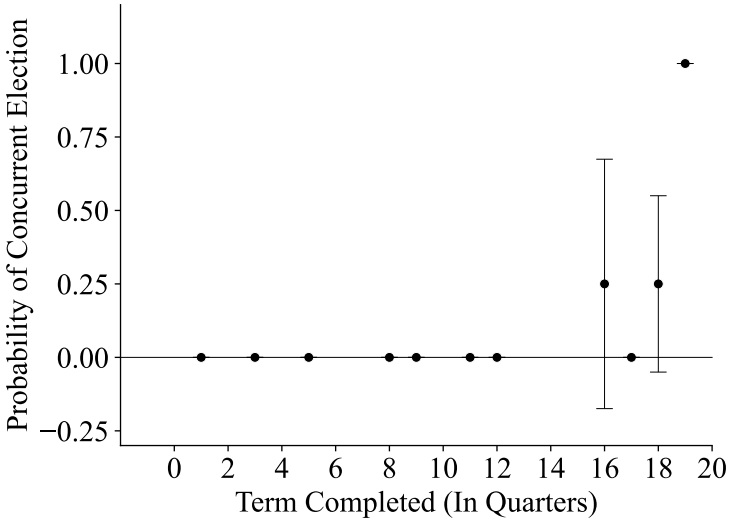

(c) *Vidhan Sabha* Elections since 1999

Note: This figure plots the legislative tenure lost by a *Vidhan Sabha* by exiting through a concurrent election. Panel (a) covers all such elections since 1974, panel (b) focuses on those that were originally off-cycle, and panel (c) considers elections since 1999. The right skew indicates that *Vidhan Sabha*s at the early stages of their tenure are unlikely to dissolve prematurely to invite a concurrent election.

FIGURE 4: Probability of Concurrence



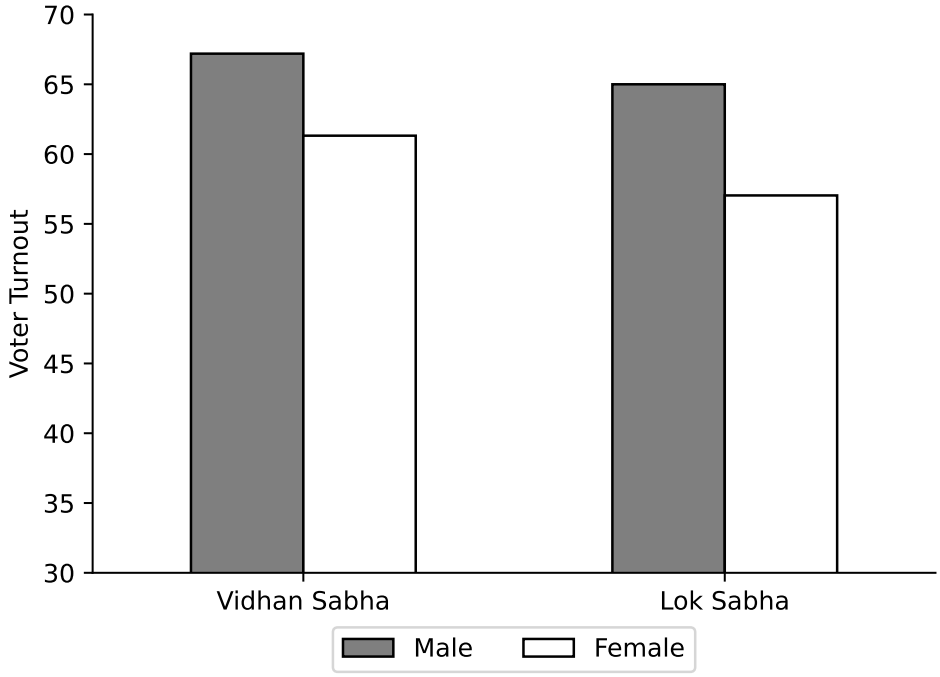

(a) *Vidhan Sabha* Elections since 1974



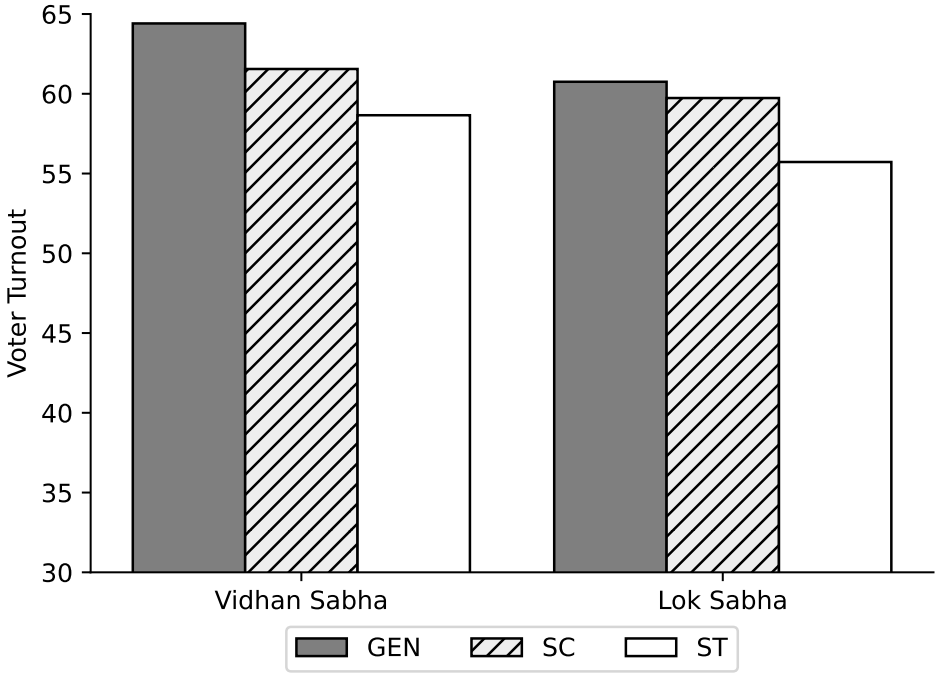

(b) *Vidhan Sabha* Elections since 1999

Note: This figure plots the probability of a concurrent election for *Vidhan Sabha*s at various points in their tenure. *Vidhan Sabha*s are classified into twenty groups based on the number of quarters completed in office. Each circle represents the probability that a *Vidhan Sabha* in the respective group exits through a concurrent election. The error bars represent 95% confidence intervals. Excludes intervals with only one observation.

FIGURE 5: Turnout Gaps



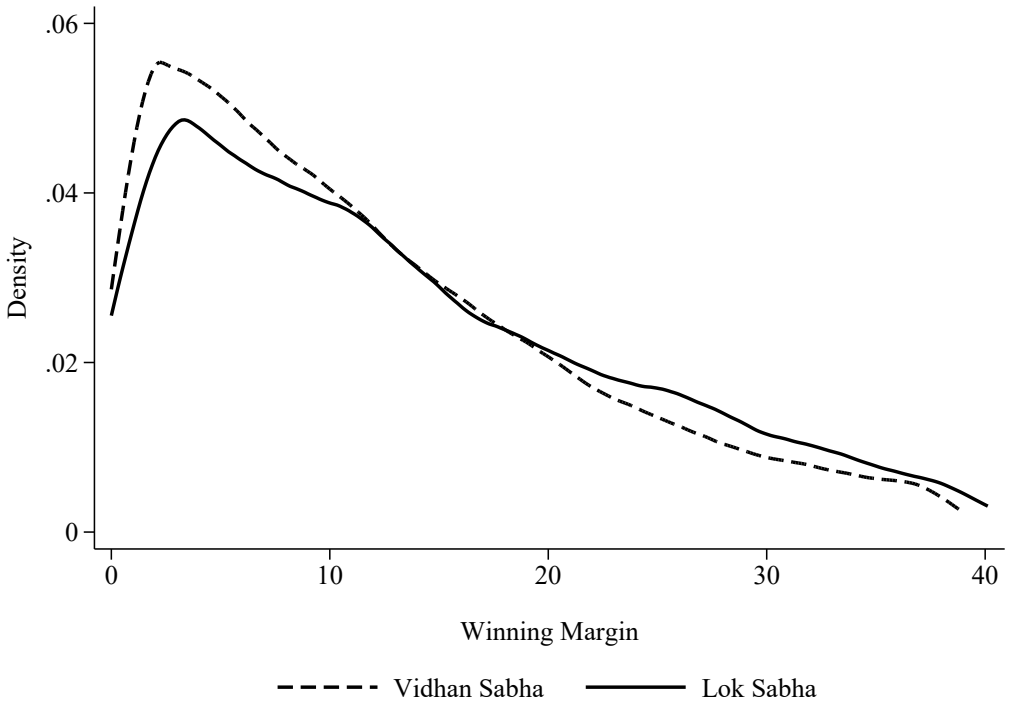

(a) Gender




(b) Constituency Type

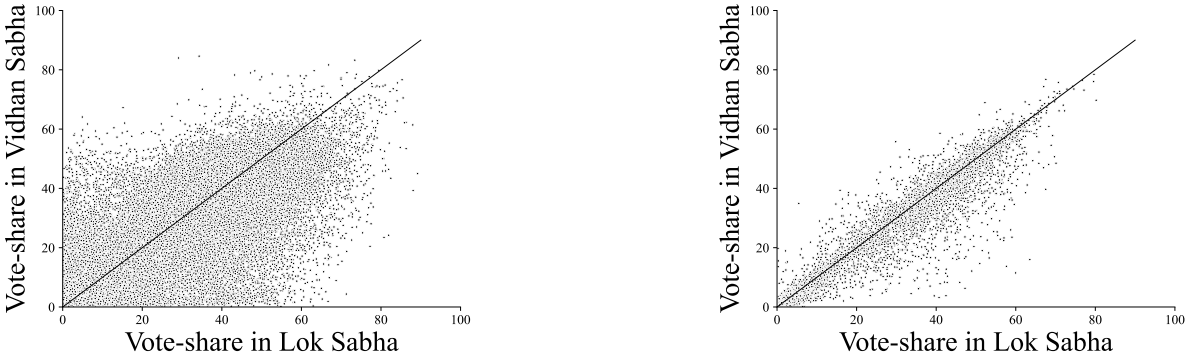
Note: This figure plots the average voter turnout in elections since 1974 by gender and constituency type.

FIGURE 6: Winning Margins




Note: Note: This figure plots the distribution of average winning as a percentage of total votes polled for elections since 1974.

FIGURE 7: Vote-shares of Parties in *Vidhan Sabha* Segments

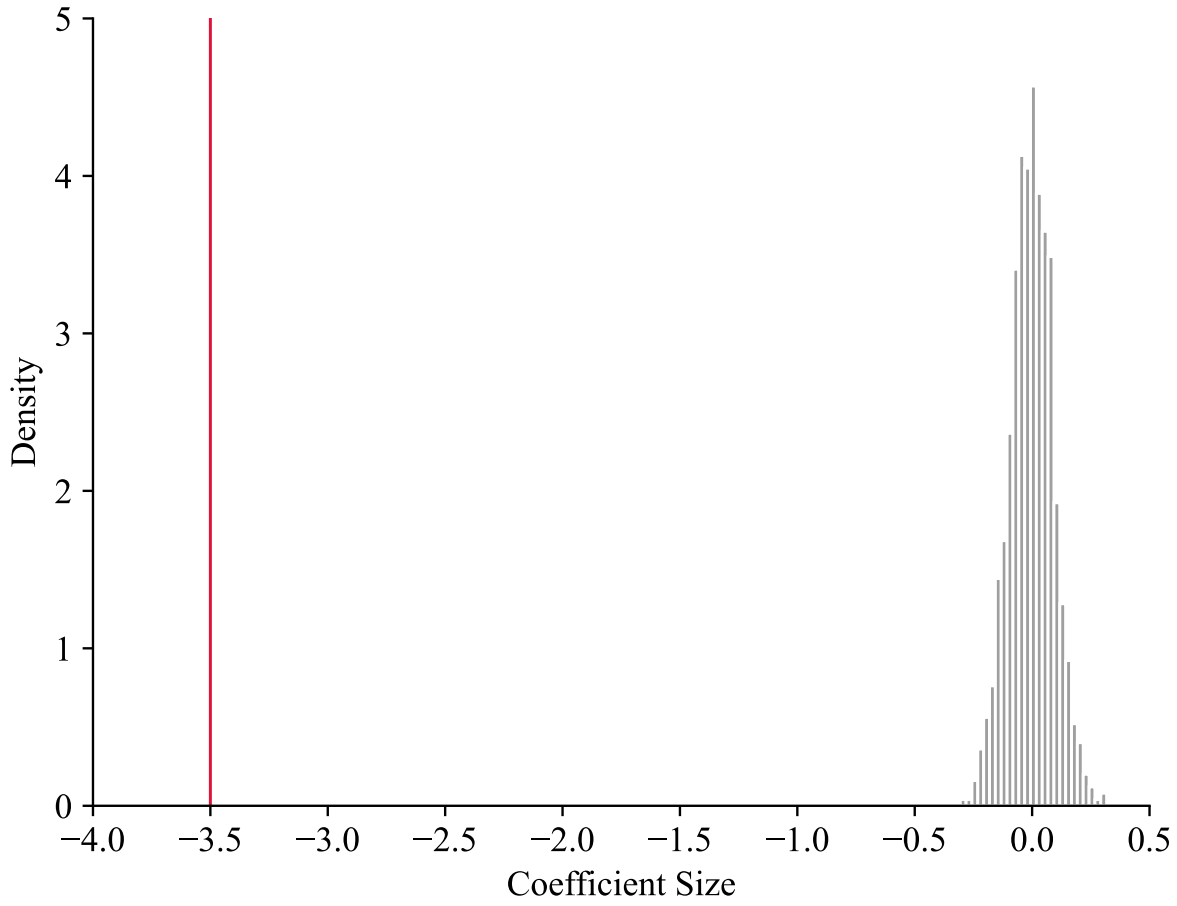



(a) Non-Concurrent Elections

(b) Concurrent Elections

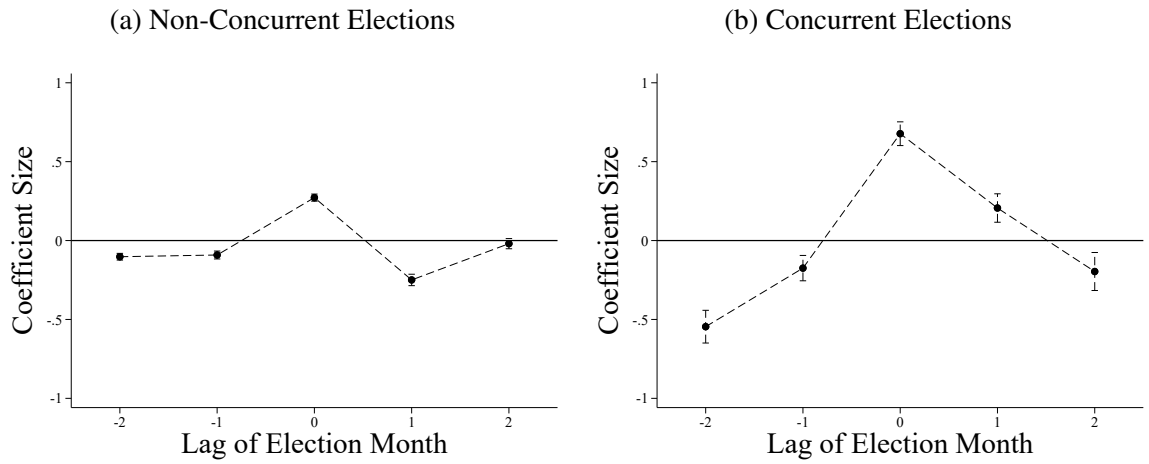
Note: The X-axis represents the vote-share a party received from a *Vidhan Sabha* segment in a Lok Sabha election, and the Y-axis represents the vote-share it received from the same segment in the closest *Vidhan Sabha* election.

FIGURE 8: Robustness Check: Random Assignment of Concurrence




Note: This figure plots the distribution of $\beta$ in Equation (4) over 1000 randomisations of concurrence. The vertical line intercepts the X-axis at the size of the coefficient estimated from actual values.

FIGURE 9: Nighttime Luminosity: Pre-Election Months




Note: This figure presents the estimated coefficients from a broader form of Equation (5) that includes up to four leads of election months. The dependent variable is mean nighttime luminosity. Vertical bars represent 95% confidence intervals. Standard errors are clustered at the *Vidhan Sabha* constituency level.

# Tables

TABLE 1: Descriptive Statistics

| | Non-concurrent | | | Concurrent | | | |
|---|---|---|---|---|---|---|---|
| | Obs. | Mean | SD | Obs. | Mean | SD | Difference |
| *Vidhan Sabha Elections*: | | | | | | | |
| Valid Votes | 44,483 | 145,395 | 45,484 | 10,352 | 138,199 | 36,411 | -7,196 |
| Effective Number of Parties | 44,483 | 3.19 | 1.05 | 10,352 | 2.88 | 0.77 | -0.31 |
| Number of Candidates | 44,483 | 11.61 | 5.32 | 10,352 | 9.92 | 4.61 | -1.69 |
| If Incumbent | 44,483 | 0.16 | 0.37 | 10,352 | 0.14 | 0.34 | -0.02 |
| If Recontestant | 44,483 | 0.30 | 0.46 | 10,352 | 0.28 | 0.45 | -0.02 |
| *Lok Sabha Elections*: | | | | | | | |
| Valid Votes | 44,483 | 135,394 | 46,519 | 10,352 | 137,995 | 36,253 | 2,601 |
| Effective Number of Parties | 44,483 | 2.73 | 0.71 | 10,352 | 2.72 | 0.61 | -0.01 |
| Number of Candidates | 44,483 | 14.76 | 7.45 | 10,352 | 10.21 | 5.35 | -4.55*** |
| If Incumbent | 44,483 | 0.18 | 0.38 | 10,352 | 0.16 | 0.36 | -0.02 |
| If Recontestant | 44,483 | 0.30 | 0.46 | 10,352 | 0.26 | 0.44 | -0.04 |
| *Absolute Difference in*: | | | | | | | |
| Voteshares | 44,483 | 7.70 | 9.49 | 10,352 | 2.51 | 4.27 | -5.19*** |
| Valid Votes Polled | 44,483 | 14,877 | 12,752 | 10,352 | 642 | 908 | -14,235*** |

Notes: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

TABLE 2: Voter Turnout: Gender

| | Voter Turnout | | | | | |
|---|---|---|---|---|---|---|
| | Vidhan Sabha | | | Lok Sabha | | |
| | All | Female | Male | All | Female | Male |
| Concurrence | 3.44 | 3.18 | 3.46 | 4.25*** | 5.50*** | 3.09** |
| | (2.36) | (2.54) | (2.15) | (1.35) | (1.44) | (1.25) |
| Baseline Average | 63.43 | 60.15 | 66.48 | 60.08 | 55.57 | 64.21 |
| Observations | 29017 | 29017 | 29017 | 4990 | 4990 | 4990 |
| R-squared | 0.78 | 0.78 | 0.72 | 0.78 | 0.77 | 0.70 |

Notes: This table reports results from **??**. Standard errors clustered at the level of states are provided in parentheses. ***, **, and * indicate statistical significance at the levels of 1, 5 and 10%, respectively.

TABLE 3: Voter Turnout: SC and ST Constituencies

| | Voter Turnout | |
|---|---|---|
| | Vidhan Sabha | Lok Sabha |
| Concurrence | 1.76 | 2.28* |
| | (2.27) | (1.18) |
| SC Reserved | -1.13** | -0.93** |
| | (0.48) | (0.35) |
| Concurrence × SC Reserved | 1.20*** | 2.11*** |
| | (0.41) | (0.34) |
| ST Reserved | -2.31** | -2.17*** |
| | (0.89) | (0.57) |
| Concurrence × ST Reserved | 3.32* | 4.87*** |
| | (1.66) | (1.09) |
| Baseline Average | 62.84 | 59.24 |
| Observations | 29297 | 5080 |
| R-squared | 0.77 | 0.79 |

Notes: This table reports results from **??**. Standard errors clustered at the level of states are provided in parentheses. ***, **, and * indicate statistical significance at the levels of 1, 5 and 10%, respectively.

TABLE 4: Congruence of Vote-shares

| | Absolute Difference in Vote-shares | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| Concurrence | -5.21*** | -4.78*** | -3.45*** |
| | (0.77) | (0.67) | (0.36) |
| Baseline Average | 7.7 | 7.7 | 7.7 |
| Observations | 54835 | 54835 | 54835 |
| R-squared | 0.051 | 0.072 | 0.12 |
| Controls | No | Yes | Yes |
| State FE | No | No | Yes |
| Year FE | No | No | Yes |

Notes: Column 1 estimates Equation (4) without controls, column 2 includes controls for the effective number of parties contesting to Lok Sabha and Vidhan Sabha, and column 3 includes state and year fixed effects. Standard errors clustered at the level of states are provided in parentheses. ***, **, and * indicate statistical significance at the levels of 1, 5 and 10%, respectively.

TABLE 5: Robustness Checks

| | Absolute Difference in Vote-shares | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| Concurrence | -2.95*** | -1.81*** | -3.35*** |
| | (0.78) | (0.31) | (0.35) |
| Baseline Average | 5.55 | 5.04 | 7.7 |
| Observations | 33933 | 49842 | 54835 |
| R-squared | 0.14 | 0.092 | 0.13 |

Notes: Column 1 estimates Equation (4) excluding Indian National Congress and Bhartiya Janata Party. Column 2 excludes all observations for which the absolute difference in vote-shares is greater than 20 percentage points. Column 3 estimates Equation (4) with a wider set of controls including the number of candidates contesting the Lok Sabha and Vidhan Sabha elections, incumbency and total number of valid votes. ***, **, and * indicate statistical significance at the levels of 1, 5 and 10%, respectively.

TABLE 6: Alternative Explanations

| | Absolute Difference in Vote-shares | | Turnover |
|---|---|---|---|
| | (1) | (2) | (3) |
| Six Months | 0.074 | | |
| | (0.79) | | |
| Concurrence | | -5.85*** | |
| | | (0.67) | |
| Same Type | | -1.94*** | |
| | | (0.39) | |
| Concurrence × Same Type | | 0.67 | |
| | | (0.61) | |
| Change | | | -0.080*** |
| | | | (0.01) |
| Baseline Average | 7.83 | 8.57 | 0.95 |
| Observations | 54835 | 24844 | 54835 |
| R-squared | 0.12 | 0.19 | 0.070 |

Notes: Column 1 estimates Equation (4) after replacing Concurrence by a binary variable that takes value one if the elections are held within an interval of six months and zero otherwise. Column 2 estimates Equation (6). Column 3 estimates Equation (7). ***, **, and * indicate statistical significance at the levels of 1, 5 and 10%, respectively.

TABLE 7: Electoral Cycles in Nighttime Luminosity

| | Lights | |
|---|---|---|
| | (1) | (2) |
| Election Month (A) | 0.31*** | 0.27*** |
| | (0.01) | (0.01) |
| Concurrent Election Month (B) | 0.57*** | 0.68*** |
| | (0.03) | (0.04) |
| (B)−(A) | 0.26*** | 0.41*** |
| | (0.04) | (0.04) |
| Election Month (Lag 1) | | -0.092*** |
| | | (0.01) |
| Election Month (Lag 2) | | -0.10*** |
| | | (0.01) |
| Election Month (Lead 1) | | -0.25*** |
| | | (0.02) |
| Election Month (Lead 2) | | -0.020 |
| | | (0.02) |
| Concurrent Election Month (Lag 1) | | -0.17*** |
| | | (0.04) |
| Concurrent Election Month (Lag 2) | | -0.55*** |
| | | (0.05) |
| Concurrent Election Month (Lead 1) | | 0.21*** |
| | | (0.05) |
| Concurrent Election Month (Lead 2) | | -0.20*** |
| | | (0.06) |
| Observations | 706553 | 699927 |
| R-squared | 0.75 | 0.75 |

Notes: Column 1 reports the results from Equation (5) with mean nighttime luminosity as outcome variable. Column 2 reports the same specification with log of mean nighttime luminosity as outcome variable. Standard errors are clustered by *Vidhan Sabha* constituencies. ***, **, and * indicate statistical significance at the levels of 1, 5 and 10%, respectively.

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