Essays in Political Economy

by

Apurav Yash Bhatiya

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Declaration

This thesis is submitted to the University of Warwick in accordance with the requirements of the degree of Doctor of Philosophy. I declare that any material contained in this thesis has not been submitted for a degree to any other university. Chapter 1 is my own, single-authored work. Chapter 2 is collaborative work with Yatish Arya, where I was involved in data cleaning, data analysis and writing of the paper. Chapter 3 is collaborative work with Vimal Balasubramaniam and Sabyasachi Das, where I was involved in the research design, data cleaning, data analysis and writing of the paper.

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Abstract

In my thesis, I focus on the relationship between the citizen and the state. The first chapter explores how enfranchised immigrants affect politicians' behaviour. I study the unique UK context, where immigrants from Ireland and the Commonwealth have voting rights in all elections immediately upon arrival, but these rights are not accorded to other immigrants. I analyse how politicians discuss immigration using text analysis of the universe of speeches in the UK parliament and how MPs vote on immigration bills between 1972 and 2011. I find that politicians exposed to higher enfranchised immigration spend more time in the parliament discussing issues that affect immigrants positively, yet they vote to increase immigration restrictions.

The second chapter examines the causal relationship between messages from political leaders and voters' receptivity to them. We study this question using the 2019 national election in India, where Prime Minister Modi's speeches focused on his aggressive response to deadly attacks on soldiers. Using a difference-in-differences identification strategy, we find that the vote share of the PM's incumbent party increased by 4.6 percentage points in the home constituencies of dead soldiers. Text analysis of PMs' speeches reveals that only deaths referenced by him affect public opinion.

The third chapter studies how election designs can influence the degree of effective decentralization. Voters in decentralized democracies make voting decisions in multiple elections across tiers, often on the same day. We estimate the importance of cognitive costs shaping voters' decision-making processes, final decisions, and electoral outcomes across tiers. We show that simultaneous elections increase political parties' salience among voters and increase straight-ticket voting with minimal effects on turnout, and no effect on candidate selection. Consequently, the likelihood of the same political party winning constituencies in both tiers increases by 21.6%.

Chapter 1

Do Enfranchised Immigrants Affect Politicians' Behaviour?

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1.1 Introduction

Many developed countries have a large and growing share of immigrants. In the US, the foreign-born population was 45 million in 2015 (14% of the population) and is projected to reach 78 million by 2065.[1] Immigration is affecting the economic and political conditions in many ways, such as increasing polarisation and reducing support for redistributive policies (Dahlberg et al., 2012; Guriev and Papaioannou, 2020). A key issue is the enfranchisement of immigrants. Politicians do not directly represent immigrants' due to their political exclusion. There is some evidence that immigrants' naturalisation leads to more integration (Hainmueller et al., 2017; Gathmann and Keller, 2018), but naturalisation takes many years (even decades for some in the US).[2] The native population also fear that, in enfranchising immigrants, they will lose control of the political process. This leads them to oppose the enfranchisement of existing immigrants, and it also leads to opposition against new immigration (Bloemraad et al., 2008; Brettell and Hollifield, 2014).

In this paper, I ask the question: Does the political inclusion of immigrants affects how politicians in the host countries react to immigration? Politicians may find some electoral benefits in addressing concerns of the enfranchised immigrants, whose preferences may be distinctly different from those of the natives. At the same time, pro-immigration policies may bear electoral costs (higher vote share for populist parties) due to natives' hostility towards immigrants (Barone et al., 2016; Halla et al., 2017; Dustmann et al., 2019; Edo et al., 2019). In addition, the evidence on politicians' responsiveness to voters' concerns points to out-group prejudice and in-group favouritism (Butler and Broockman, 2011; Iyer et al., 2012; Butler, 2014). It is unclear whether enfranchisement makes a difference in politicians' behaviour.

The United Kingdom provides a unique context to answer this question. Unlike any other immigrant receiving country, it allows immigrants from Ireland and the Commonwealth[3] to vote in all elections immediately upon arrival. On the other hand, migrants from other countries do not have the same rights until they become UK citizens (disenfranchised, henceforth). I exploit within- and across-constituency variation in immigration from enfranchised and disenfranchised countries. To overcome the endogeneity in the location of immigrants, I use a shift-share instrumental variable approach, in which historical set-

[1] Source: Pew Research Center projections for 2015 − 2065, last accessed September 2021.

[2] As of September 2021, the US government was processing immigrant applications for Mexican family-based visa filed in February 1999 and employment-based visa for the skilled workers from India filed in January 2014. Source: Visa Bulletin, Number 57, Volume X, US Department of State.

[3] The Commonwealth originated as a group of countries that were a part of the British Empire.

tlement across constituencies is interacted with the overall migration inflow by country (Angrist and Krueger, 1999; Card, 2009). The instrument exploits the fact that immigrants tend to cluster geographically in the receiving country, and newcomers tend to settle in places where their ethnic community is large.

I analyse the incumbent's response to immigration using data on the universe of UK parliament speeches and voting behaviour on immigration bills between 1972 and 2011. The text data allows me to capture incumbents' sentiments in a nuanced way. I use dictionary-based methods to find parliamentary speeches about immigrants. Quantitatively, I calculate the share of parliament days in each year during which each member of parliament (MP) talked about immigrants. Qualitatively, I estimate a sentiment score of those speeches using the valence norms associated with the speech text (higher scores indicate a positive sentiment). Lastly, I compute an average probability that an MP voted in favour of and against immigrants in amendments to the immigration bills tabled in the parliament.

I investigate how enfranchised and disenfranchised immigration to a constituency affects incumbents' speeches and voting in the parliament about immigrants. I measure immigration as the changes in the fraction of foreign-born individuals over the constituency population. I split the foreign-born population into the enfranchised and the disenfranchised groups. I define the native population as the individuals born in the UK. The UK parliament meets for about 154 days a year. On average, an MP talks about immigrants on 7.8% of parliament days (12 days). The average share of foreign-born population is 8.8% and is almost equally distributed across the two groups (4.6% are enfranchised and 4.2% are disenfranchised).

First, I analyse the effect on speeches. I find that a 1 SD (or five percentage points) higher enfranchised immigration share in the population increases the share of parliament days on which MPs mention immigrants by 1.3 p.p. (a 16.66% or 2-day increase). The MPs also talk about immigrants positively: the valence norms increase by 0.23 SD. The increase in parliament discussions due to enfranchised immigration comes from a higher use of words specific to immigrants from the enfranchised countries. In contrast, a 1 SD higher disenfranchised immigration reduces the parliament days where MPs talk about immigrant issues by 19%, and the sentiment is less positive: the valence norms reduce by 0.23 SD.

Second, I analyse the voting on bills. I find that a 1 SD increase in enfranchised immigration makes MPs 9.3 p.p. more likely to vote to amend a bill against immigration (20% higher probability on a mean of 0.459) and 8.1 p.p. less likely to vote to amend a bill in

favour of immigration to keep the bill at status quo. I find an opposite results for the MPs exposed to disenfranchised immigration. These 2SLS results are robust to the exclusion of ethnically close enfranchised immigrants (from Australia, New Zealand, Canada, and Ireland) and the inclusion of controls for party vote shares, stock of immigrants, observable characteristics of immigrants, and the ethnic-minority identity of MPs. In addition, I recover the effect of immigration shocks on outcomes through exposure as suggested by Borusyak et al. (2020).

I explain the opposite results on speeches and voting using politicians' electoral benefits and costs. The political inclusion of immigrants makes makes MPs directly responsible for their representation in the parliament. Also, helping immigrant voters with their concerns is potentially an easy way for politicians to gain trust and enhance their reputation among the immigrant community (Butler et al., 2012; Bussell, 2019). On the other hand, there are electoral costs due to natives' hostility. In the UK context, Blinder and Allen (2016) find that natives' preference to reduce immigration goes as far back as the 1970s and concerns are similar for both EU and non-EU immigration. The electoral benefits could explain the positive representation of enfranchised immigrants in the parliament. In contrast, there are no electoral benefits from the disenfranchised immigrants and natives' hostility could explain their negative representation.

Analysing the electoral cost argument, I find that constituencies with more enfranchised immigration did not observe any changes over time in the party affiliation of their representatives but saw underlying shifts in the parties' vote shares. In particular, enfranchised immigration decreased vote shares for the Labour party and increased vote shares for the other parties, particularly the Green party and right-wing populist parties.[4] These results suggest that as MPs addressed immigrants' concerns and spoke positively about them (potentially due to electoral benefits), a fraction of natives increased their support for the alternative parties.

In further analysis, I find that incumbents only respond to enfranchised immigration when the electoral costs are low. This claim is supported by two findings. First, I find that incumbents are unlikely to appeal to immigrant voters in constituencies with high electoral competition. Immigration is a salient issue during the elections, and this result hints that incumbents do not want to lose the support of the majority natives while earning immigrant votes. Second, the MPs in constituencies with a higher Labour party vote share are more likely to respond favourably to the enfranchised immigration in the parliament. This result suggests the importance of a large voter base with a pro-immigration ideology

[4]Immigration did not have any impact on the turnout of voters or migration of the natives.

in getting politicians to talk positively about immigrants in parliament.

I find that incumbents compensate for rising electoral costs by voting to restrict future immigration and they vote in accordance with majority natives' preferences. This is supported by three findings. First, using survey data, I find that both types of immigrants are more open to future immigration than the natives even when they have UK citizenship. Second, the incumbents in constituencies that are tightly contested are more likely to vote to restrict future immigration to appeal to the majority natives' preferences. Third, I find that incumbents in constituencies with higher Labour party vote share are more likely to amend the immigration bill to increase restrictions.

Overall, I find that as the proportion of enfranchised immigrants increase the incumbents favour the enfranchised immigrants and yet vote to restrict future immigration. By contrast, an increase in proportion of the disenfranchised immigrants leads to an opposite effect. This prompts two questions: how are the two immigrant groups different from each other, and why do politicians pay attention to the enfranchised immigrants? I answer these questions with descriptive evidence using the European Social Survey.

I find that immigrants from the two groups have similar gender composition, marital status, education levels, employment opportunities and life satisfaction levels on average. The historical connections for the enfranchised groups do not make them spend more time learning about political news and they are not more likely to trust the UK parliament, legal system, political parties and politicians. The disenfranchised immigrants do not feel discriminated against due to a lack of voting rights.

On the second question, I analyse the political engagement of immigrants using questions from the politics section of the European Social Survey. I find that the enfranchised immigrants are 5.5 p.p. (or 13.6% on a mean of 0.404) more likely to say they have taken a socio-political action (the most popular actions are signing a petition, participating in protests, contacting politicians and boycotting products) compared to the disenfranchised immigrants. This difference in socio-political action is largest when the immigrants do not have UK citizenship and for the enfranchised immigrants from stronger democracies. English language skills do not explain this difference. From the same survey I find that the enfranchised immigrants say that they actively participate in the elections even when they do not have UK citizenship.[5]

The descriptive evidence suggests that the enfranchised immigrants are more politically engaged. To understand if the political engagement channel drives politicians' behaviour,

[5]In the national elections, the enfranchised immigrants with UK citizenship have the same turnout as natives. The turnout gap between natives and disenfranchised immigrants with UK citizenship is 14.3 p.p.

I study the topics of the parliament debates and use 2SLS estimation. I find that enfranchised immigration led to a 30% increase in the share of parliament days on which incumbents have mentioned immigrants in petitions, private member bills and questions to ministers. This result is also driven by constituencies with enfranchised immigration from stronger democracies, similar to the survey evidence on socio-political actions. Thus, the political engagement channel explains the positive representation of enfranchised immigrants in the parliament. I find no heterogeneity in voting on bills due to the enfranchised immigration from the stronger democracies, as the voting direction is a response to the native constituents' attitudes.

Contribution Immigration attracts a lot of attention from the academic community and policymakers. My paper contributes to different strands of the literature. First, on the political economy of immigrants in host countries, the recent literature finds that the size of the foreign-born population is linked with a support for populism (Becker et al., 2017; Alabrese et al., 2019; Halla et al., 2017; Edo et al., 2019; Dustmann et al., 2019; Steinmayr, 2021; Lonsky, 2021). In these cases, immigrants do not have voting rights, and the incumbent's response stems from the economic and cultural threat perceived by natives and their exposure to the foreign-born population. I document the role played by immigrants in shaping the politicians' behaviour and the immigration policy in the host country. In a similar vein, Biavaschi and Facchini (2020) exploit variation across US states in access to the ballot in the national elections for the foreign-born population during the early 20th century. They find that electoral accountability to naturalised immigrants affects the voting behaviour of the US Members of Congress. Members of Congress support an open migration policy in response to the large numbers of naturalised US citizens, and the effect is reversed if enfranchisement is restricted. In my context, the enfranchised immigrant population is small, and the restrictions on future immigration come as a response to the natives' preferences.

Second, in the enfranchisement literature, Acemoglu and Robinson (2000, 2001) and Conley and Temimi (2001) argue that the elites extended the franchise and diluted their powers due to the threat of revolution and to prevent social unrest. However, immigrants in my context are not the same as the disenfranchised native population of the early 20th century.[6] An increasing mass of immigrants would open up demand for descriptive representation and increase the native hostility, thereby threatening the incumbent's position. In my setting, restricting future immigration and, therefore, the size of the immigrant population keeps power in the hands of the existing incumbents and native majority. Ad-

[6]The migration flow rate is much higher than the native population growth rate.

ditionally, there is nascent literature on non-citizen enfranchisement in Europe (Ferwerda et al., 2020; Stutzer and Slotwinski, 2020; Koukal et al., 2021). It addresses the conditions that drive natives' willingness to enfranchise non-citizens at the regional level. The UK provides a unique context for analysing the effects of immigrant voting rights, as the enfranchisement decision was independent of the current economic and political conditions and the stock of immigrants.

Third, recent work analysing political speeches in the UK has found emotional rhetoric matters in the legislative arena (Spirling, 2016; Crabtree et al., 2020; Osnabrügge et al., 2021). Using text analysis on speeches, I study how changes in population demographics affect how politicians' represent their constituents in the parliament. Existing research on politicians' responsiveness to voters has mainly focussed on field experimental audit studies (Butler and Broockman, 2011; Iyer et al., 2012; Broockman, 2013; Nye et al., 2015; Gell-Redman et al., 2018). All these studies find legislators respond to those constituents with whom they share personal characteristics such as race and ethnicity. My paper analyses legislator responsiveness in a non-experimental setting and over three decades. I find that incumbents respond to even those constituents with whom they do not share their race and ethnicity, i.e., enfranchised immigrants from countries other than Ireland, Australia, New Zealand, and Canada.

1.2 Conceptual Framework

In this section, I discuss the intuition behind the incumbent's decision to respond to the concerns of the immigrants in their constituency. An incumbent can decide to respond positively, negatively or not respond at all. Some immigrants are enfranchised, while some are not. A basic formal theoretical model is available in the Appendix Section 2.2.

In my framework, a fraction of the native population dislike immigrants (of any kind) and consider them an economic and cultural threat. Addressing immigrants' concerns could increase the electoral costs for the incumbent, due to rise of populist parties (as documented by Barone et al. (2016); Halla et al. (2017); Dustmann et al. (2019); Edo et al. (2019)). I assume the natives' hostility towards immigrants is an increasing function of the size of the immigrant population. An incumbent finds no electoral gains in addressing the concerns faced by the disenfranchised immigrants (Gaikwad and Nellis, 2020). Given the electoral costs, an incumbent does not respond to the disenfranchised immigrants. As their population share increases, the electoral benefits remain zero, but the costs increase. A re-election minded incumbent must find ways to reduce the electoral costs. *Hypothesis*

1: Incumbents respond negatively to an increase in the population of disenfranchised immigrants.

On the other hand, an incumbent can reap electoral gains by addressing the concerns faced by enfranchised immigrants. These immigrants are a separate voting bloc whose preferences may differ from those of the majority (natives). An incumbent may worry about losing natives' support due to their hostility. A simple trade-off suggests that an incumbent should address the enfranchised immigrants if the benefits are higher than the costs. As the enfranchised immigrant population share increases, the electoral benefits and costs increase. A re-election minded incumbent would want to keep up with the existing vote base of both natives and enfranchised immigrants.

In this case, an incumbent can either focus on issues common to both enfranchised immigrants and natives or find ways to reduce the loss of natives' votes when addressing the immigrants, or do both. One example of such a policy is restricting future immigration. While the immigrants may or may not be favour this policy, it helps the incumbent reduce the electoral costs from natives' hostility towards immigrants. *Hypothesis 2: Incumbents may respond to existing enfranchised immigrants positively as their population grows, and at the same time seek to restrict future immigration.*

The electoral costs may also vary depending on the majority voters' ideology in the constituency. Political ideology could work synergistically for some parties and in complementary ways for others. *Hypothesis 3: Incumbents in constituencies where majority voters' have a pro-immigration ideology may be more likely to favour enfranchised immigrants.* This simple political agency framework gives us micro-foundations of politicians' behaviour toward enfranchised and disenfranchised immigrants. In the following sections, I test how the conceptual framework fits the data.

1.3 Context: Enfranchisement in the UK

In most countries, the right to vote is limited to citizens of that country. The UK provides an unusual institutional setting as it is one of the few countries that enfranchises some non-citizens in national elections. Some countries have extended voting rights to non-citizens but often in a restrictive way, either through membership in a supranational group[7] or via bilateral agreements. The UK grants voting rights to residents from Irish

[7]Supranational group (for example, the European Union) usually involves multinational agreements in which the member countries agree to some degree of reciprocity regarding voting rights.

and Commonwealth nations for all levels of government immediately upon their arrival in the country.[8]

The general elections are scheduled to take place every five years on the first Thursday in May. All voters vote for a single-member parliamentary constituency to elect a member of parliament (MP) from a choice set of candidates from different political parties or independent candidates. The prime minister is whoever is the leader of the winning party across all 650 parliamentary constituencies using the first-past-the-post voting system. There are two major political parties, the Labour Party and the Conservative Party.

Historically, over the 19th and early 20th-century voting rights were extended from property-owning men to all men and women in the British Empire resident in Britain through the Representation of the People Act, 1928. In 1921, Ireland was established as a self-governing dominion within Britain.[9] Around the same time in 1926, Britain and its dominions formed a voluntary supranational political association− the Commonwealth of Nations. The group agreed they were "equal in status, in no way subordinate one to another in any aspect of their domestic or external affairs and united by the common allegiance to the Crown" (Balfour Declaration, Imperial Conference, 1926).

Over the years, most countries gained independence from Britain and created their citizenship laws. However, people from Ireland and the Commonwealth resident in the UK retained their right to vote in the UK. Simultaneously, people from other countries residing in the UK are not enfranchised for all elections until they become UK citizens. The membership of the Commonwealth has changed over time, with countries such as Pakistan, South Africa, Gambia, and the Maldives leaving and later rejoining the group. Some countries, for example, Cameroon, Rwanda and Mozambique have no association with the British Empire but are a part of the Commonwealth and have voting rights. Ireland left the Commonwealth in 1949, but its citizens still have voting rights when resident in the UK. Zimbabwe left in 2003 but applied to rejoin in 2018.[10]

The UK parliament has passed a number of new bills related to immigration and citizenship/nationality over the years, but the voting rights for commonwealth citizens have remained unchanged. Recently, Lord Goldsmith's 2008 report reviewed British citizenship laws and recommended limiting the right to vote in Westminster elections to UK citizens only. The report proposed to rectify the voting rights for non-citizens by phasing out the right of Commonwealth citizens to vote in general elections and confining the voting rights to citizens of those (few) countries that offer reciprocal rights. However,

[8] Source: The Election Commission, last accessed September 2021.
[9] Source: The UK Parliament, Key Dates, last accessed September 2021.
[10] Source: Commonwealth Association of Nations, Britannica, last accessed September 2021.

the issue of voting has never been actted on. One reason is that voters from Black and Minority ethnic communities, many of whom are Commonwealth citizens, are far more likely to voting for the incumbent Labor government that commissioned this review.

Figure 1.1 shows a world map of the countries whose residents in the UK have a right to vote immediately upon arrival. Overall, the enfranchised countries are a very diverse group, with both developing and developed countries. Currently, there are 54 member countries in the Commonwealth. The major immigrant sending countries by region are the Pacific (Australia and New Zealand), Europe (Ireland, Cyprus and Malta), the Caribbean and Americas (Canada, Bahamas, Dominica, Jamaica, and Barbados), Asia (Bangladesh, India, Pakistan, Malaysia, Singapore and Sri Lanka) and Africa (Kenya, Nigeria, Uganda and South Africa). Appendix Table A.1 provides the full list of the enfranchised countries by region. Notably, the enfranchisement of foreign-born non-citizens was not due to their presence in the UK in large numbers in the early 20th century.

1.4 Data

1.4.1 Census Data

I use census data for 1981, 1991, 2001 and 2011 to get data on the number of foreign-born individuals and measure immigrant population flows. My analysis begins from the 1981 Census because the data on foreign-born individuals disaggregated by individual country group at the parliamentary constituency level is publicly available from this period. All analysis utilising census data in this paper is limited to England and Wales, due to the non-availability of data for Scotland and Northern Ireland disaggregated at the constituency level.[11]

The 1981 Census divides the foreign-born population into seven subgroups for the enfranchised population and three for the disenfranchised population. The subgroups of the enfranchised population are: the old Commonwealth (Australia, New Zealand, Canada), East Africa and Other Africa, India, Bangladesh, the Caribbean and New Other (Cyprus and Far Eastern Colonies). In comparison, the disenfranchised population had Pakistan, Europe and the rest of the world.[12] Censuses from 1991, 2001 and 2011 divide the foreign-born population into a higher number of sub-groups than the 1981 census. Ap-

[11] England and Wales together make up 89% of the UK population.

[12] Pakistan left the Commonwealth in 1972 and rejoined in 1989.

pendix Table A.2 provides the mapping for individual country groups across census years. Henceforth, the immigrants in a given constituency refer to the foreign-born population.

The Boundary Commission altered the parliamentary constituency boundaries in 1974, 1983, 1997 and 2010. To make comparisons over time, I use publicly available information to match the parliamentary constituencies to their parent units and perform analysis with stable constituency units. Most of the county boundaries have remain unchanged while the constituencies boundaries (within each county) have changed a lot between the Census 1971 and 2011. The UK has about 650 parliamentary constituencies; in England and Wales, there have been around 570 constituencies for the general elections between 1970 and 2010. After making a stable constituency unit, the number went from 570 to 192 in my study period. Since the number of constituencies that were combined to create a stable unit varies a lot, I construct all the variables as a weighted average by the electorate size of the constituency.

I provide two examples to illustrate how I construct stable constituency units. Example 1, in the case of Warwickshire county the delimitation commission altered the boundaries such that the whole county had to be treated as a parent unit. Appedix Table A.3 provides the year when each constituency was created and abolished as well as the constituencies it was created from and replaced by. I graphically illustrate the changes in boundaries in the Appendix Figure A.1. Example 2, in the case of Somerset county, the boundaries changed such that I was able to recover three parent units for the seven constituencies observed in this time period. Appendix Figure A.2 shows changes in boundaries over time using pictures and the Appendix Table A.4 provides the details of changes made to each constituency by the delimitation commission in 1983 and 2010.

1.4.2 European Social Survey

The European Social Survey is an individual-level repeated cross-sectional survey on socio-economic and political values for 28 European countries. There have been nine biannual survey waves between 2002 and 2018. The main advantage of using this survey over other surveys is that it provides detailed information on each respondent's country of birth that I can use to identify immigrants from the two groups.[13] I take the UK sample of this survey and focus on the respondents not born in the UK, similar to the census data on foreign-born population.

[13] Appendix Section 1.10 describes and discusses two more datasets− UK Household Level Panel Survey (2009 − 2019) and British Household Panel Survey (1991 − 2008).

1.4.3 Parliament Speeches

The UK parliament makes the full text of individual legislators' speeches, publicly available online via Hansard.[14] I web-scraped Hansard for the years between 1972 and 2011. I use the data from the House of Commons, the elected house of the parliament, which contains proceedings of the Common Chamber, written ministerial statements, petitions, divisions, and proceedings from the Commons General and Public Bill Committees.

For each parliament sitting (day), Hansard provides the speaker's name, the full text of the speech, and the broad topic and the sub-topic under which the politician spoke. A parliament day is a dynamic process of MP's deliberating on different issues. I define a parliament speech as the complete speech text for each MP within each broad topic and sub-topic on a given parliament day. Appendix Table A.5 provides a dummy example to illustrate how a single speech for each MP is identified using parliament deliberations. Appendix Table A.6 provides examples using some snippets of the speeches from Hansard. Some speeches have both a broad topic and a sub-topic, while some have a broad topic. Overall, the dataset contains information from 7,436 parliament days covering 3 million parliament speeches.

Since the electoral outcome data from the Commons Library does not have the name of the winning MP, I obtain MP names from TheyWorkForYou.[15] I first map the parliament days to the parliament sessions (via the general election cycle). Then, I map the speaker's name from Hansard to a constituency using the MP names for each parliament session. Overall, I was able to match 95% of the parliament speeches to a constituency. The match rate is not 100% because of the difficulty in mapping common speaker names (for example, Mr Smith) to a unique constituency. Within the sub-sample of the text data relevant for my analysis (i.e., the speeches about immigrants), the match rate is 97%.

1.4.4 Construction of the Outcome Variables

To understand how MPs talk about immigrants in the parliament, I sub-set the parliament speeches about immigrants with a dictionary-based approach, i.e., I use words commonly used in the literature to extract speeches about immigrants (Saalfeld, 2011; Geese et al., 2015; Slapin and Kirkland, 2020). The major keywords are: immigra* / migra* / foreigner* / asylum* / refugee* and minorit*. This step selects all speeches given in

[14] Hansard reports speeches in Parliament verbatim.

[15] TheyWorkForYou is a UK-based charity organisation. It provides a list of Members of Parliament and their respective constituencies since the 1918 UK general election.

parliament that mention immigrants. To get a precise measure of speeches by an individual MP for their constituency, I use those speeches which contain the words capturing immigrants *and* constituency together within a single speech.[16] For each constituency unit and year, I compute three types of outcome variables.

Discussions First, I calculate a quantitative measure of debates in parliament. I measure what is the percentage of parliament days in a year where an MP spoke about immigrants. I call this outcome variable "Discussions". One might also think of the volume of the parliament debates, i.e., total speech words per parliament day or per speech day about immigrants. Or simply the count of speeches per parliament day or per speech day about immigrants. Given the limited time for each MP to express their views through the speaker in the parliament, I focus on the share of speeches about immigrants per year.

Valence Second, I compute a qualitative measure of the speeches using the sentiment analysis of the text. This measure is conditional on an MP delivering a speech about immigrants. I use the valence norms proposed by Warriner et al. (2013), which provides valence scores for approximately 14,000 words, each rated on a scale of 1 to 9. The valence score tells us the pleasant emotion conveyed by a word, with higher numbers indicating more positive sentiment. I start by removing the punctuation and converting all the text to lower case. Next, I lemmatise the words to reduce them to their base forms while maintaining the context using the NLTK WordNet lemmatiser (Bird et al., 2009). Finally, I compute the valence score by taking the mean valence rating of all words in the entire text of the MP's speech.

Voting on Bills Third, I calculate an average probability of voting on all bills in a given Census year. I follow DEMIG (2015) to get a list of all acts proposed in the UK parliament related to immigration during my time period of study.[17] The voting on amendments to the bills could be pro- or anti-immigration, depending on the current draft of the bill. I classify the proposed amendment to the bill either in favour (pro immigrants) or against (anti-immigrants) by hand-coding the speech of the MP who started the amendment. I capture the names of MPs who voted in favour ('ayes') or against ('noes') those amendments, where 'ayes' would imply voting to amend and 'noes' implies voting to

[16] Appendix Table A.7 provides a detailed glossary of all words used. I group the words under broad headers such as Immigrants, Visa & Nationality, Enfranchised countries, Disenfranchised countries, Refugees and Constituency.

[17] Appendix Table A.8 provides a short description of bills, including a one-line summary and target groups (including specific nationalities).

maintain status quo on the bill. Thus, I measure two outcome variables- amendments in favour and against immigrants on bills tabled in the parliament.

Electoral Outcomes I analyse the electoral outcomes between the 1970 and 2010 general elections using the election results from the Commons Library research briefing reports.[18] The dataset includes the voters and vote share for different political parties, turnout, and electorate size for each constituency. I re-define these variables for the 192 parent constituency units using a weighted average by the electorate size of the constituencies. Appendix Table A.10 provides a mapping of general election dates to census years. There have been eleven general elections in the UK during my study period, all scheduled in the five-year interval.

1.5 Empirical Framework

1.5.1 Main Estimation Equation

My research question is, does enfranchised immigration affect MPs' speeches and voting related to immigration bills. I employ a constituency-level difference model to answer this question because of the slow changes in my outcome variables over time (Appendix Figure A.3), and the five or six-year waiting period for immigrants to apply for citizenship. My outcome variables are parliament debates and voting (details on the construction in Section 1.4.4). My explanatory variables are enfranchised and disenfranchised immigration. I measure immigration (migration flow) in the census year t as a change in the stock of foreign-born population between the census years t and $t-10$. Immigration is calculated separately for the foreign-born population from the enfranchised countries and the disenfranchised countries.

I regress the *change* in the outcome in the constituency c between the years t and $t-10$ ($Y_{crt} - Y_{crt-10}$), on the *change* in the share of foreign-born enfranchised (Imm_{crt}^{Enf}) and foreign-born disenfranchised ($\text{Imm}_{crt}^{DisEnf}$) between the census years. The immigration between census year t and $t-10$ is mapped to the outcome variables between years t and $t-9$. Since the constituency population could be an outcome of immigration, the number of immigrants from each group is scaled by the baseline constituency population (Census 1981).

[18]The dataset is publicly available at the Commons Library, last accessed on September 2021.

$$Y_{crt} - Y_{crt-10} = \beta_1 \text{Imm}_{crt}^{Enf} + \beta_2 \text{Imm}_{crt}^{DisEnf} + \gamma' X_{crt} + \delta_r + \delta_t + \Delta\epsilon_{crt} \tag{1.1}$$

In the above equation, the δ_t are period fixed effects to account for time-specific characteristics which are similar across constituencies that affect the outcome variable, for example, election years. The δ_r represents the region fixed effects controlling for regional-time trends in a levels specification.[19] The difference specification eliminates any time-constant constituency specific characteristics that may affect the outcome variables and the immigrant allocation in the same way. X_{crt} controls for several constituency level variables that could predict the outcome variables, I discuss them further with the identifying assumption in Section 1.5.3. My coefficient of interest is β_1. It is an estimate of the effect of changes in the fraction of enfranchised immigrants within the same constituency over time, compared to other constituencies within the same region in a given year, controlling for changes in the fraction of the disenfranchised immigrants. I cluster standard errors at the constituency level.

Consistency of β_1 requires that immigration from the enfranchised group (Imm_{crt}^{Enf}) and the disenfranchised group ($\text{Imm}_{crt}^{DisEnf}$) is strictly exogenous in the above equation, i.e., E($\Delta\epsilon_{crt}|\text{Imm}_{crt}^{Enf}$) = 0 and E($\Delta\epsilon_{crt}|\text{Imm}_{crt}^{DisEnf}$) = 0. A priori, urban cities with diverse cultures and more job opportunities might attract more immigrants, or immigrants might settle in otherwise declining constituencies, where the cost of starting a new business and housing prices are lower. In any case, the omitted variables are likely to make OLS estimates of equation (1.1) biased.

1.5.2 Leave-Out Shift-Share Instrument

To deal with the endogeneity problem, I construct a modified version of the Bartik instrument (Card, 2001). The instrument combines immigrant shares of the different groups in 1981 with subsequent aggregate shocks of immigrants, excluding the individuals that eventually settled in a given constituency. Formally, Imm_{crt}^{k} where $k \in \{Enf, DisEnf\}$ is instrumented with

$$Z_{crt}^{k} = \frac{1}{P_{crt}} \sum_{j} \alpha_{jc} O_{jt}^{-c}, \tag{1.2}$$

where P_{crt} is the baseline constituency population (where t = 1981) and α_{jc} is the share of individuals from the country group j (for each k) living in the constituency c in 1981.

[19] England and Wales are divided into 10 regions, a region contains on average 19 constituencies.

O_{jt}^{-c} is the number of immigrants from a country group j that entered the UK between census years t and $t-10$, net of those that eventually settled in the constituency.

This "leave-out" strategy is employed so that local area changes do not contaminate the instrument (similar to Burchardi et al. (2019) and Tabellini (2020)). As a robustness check, I also estimate the leave-out instrument at the county level to eliminate any concerns about immigrant pull factors that might be correlated across constituencies within a county.[20] The instrument exploits time-series variation in immigrants entering the UK from the two groups in a given decade and a cross-sectional variation in the share of immigrants from a country group j living in different constituencies in 1981.

Figure 1.2 shows the spatial variation (across- and within-constituency) in the share of foreign-born and share of enfranchised foreign-born across the 192 constituencies using the 1981 Census. Panel (a) is the share of the foreign-born population over the total population divided across quartiles. The London, Birmingham and Oxford areas had the highest proportion of foreign-born population, while constituencies farthest away from these areas had the lowest foreign-born population. Panel (b) plots the share of the enfranchised foreign-born population over the total foreign-born population across quartiles. A given constituency may have a large fraction of the foreign-born population but a large part of that fraction might be disenfranchised. Simultaneously, a constituency might have a small proportion of enfranchised foreign-born population.

1.5.3 Identification Assumptions

Since most new immigrants tend to settle in places where existing immigrants live, the endogenous variables and the shift-share instrument are directly correlated. Next, the instrument and the error term should not be correlated conditional on the observable covariates, i.e., the constituencies that received more immigrants before 1981 must not be on different trajectories of the evolution of economic and political conditions in the subsequent decades. I test the validity of these two identifying assumptions in the following section.

First, I examine if larger immigrant stocks pre-1981 had an independent and time-varying effect on the political or the economic conditions in the future periods. I control for the 1981 population shares of the different country groups in my main specification to account for linear trends in the initial distribution of immigrants. The aim is to test if specific immigrant groups (e.g. from India or Bangladesh) were more likely to settle in

[20] The 192 parliamentary constituencies of England and Wales are divided into 43 counties.

particular areas to influence the local political and economic conditions by holding the differences within the immigrant sending country group constant.

Second, I augment my baseline specification with the 1981 economic characteristics such as the share of the economically active population and the fraction of employment by industry (agriculture, manufacturing, construction, etc.). I test if the initial economic conditions had a time-varying effect on the economic conditions across constituencies. I include time-varying economic characteristics of the immigrants, party affiliation and ethnic-minority identity of MPs and immigrant stocks as additional controls. I also include constituency level fixed effects in my baseline specification to control for constituency level time-trends that affect the outcome variables.

Third, Jaeger et al. (2018) suggest that the instruments might be vulnerable to bias from the dynamic adjustments to past shocks. I directly test if pre-period changes in quantity and quality of discussions about immigrants are uncorrelated with subsequent immigration changes predicted by the instrument. I also include lagged immigrant inflows in the model and instrument with a lagged version of the instrument. This isolates the variation in inflows uncorrelated with current local demand shocks and the adjustment to past supply shocks.

Fourth, in my context, I allow the initial population shares of the country groups to be endogenously distributed, and the identification follows from the quasi-random assignment of shocks. Therefore, following Borusyak et al. (2020), I show a similar inference using the transformed IV regression estimated at the level of shocks that has a numerical equivalence to the existing shift-share instrumental variable regression.

1.5.4 Individual Surveys

$$Y_{irt} = \gamma \mathrm{I(Enfranchised\ Immigrant)}_i + \beta^{'} \mathrm{X}_{irt} + \delta_r + \delta_t + \epsilon_{irt} \tag{1.3}$$

Using the European Social Survey, I analyse the differences between immigrants from the enfranchised and the disenfranchised groups. I estimate the following linear regression where Y_{irt} is the outcome variable for individual i residing in the region r surveyed in the survey round year t. The γ coefficient captures the average differences in the outcome variable for respondents between the two groups after accounting for individual controls (X_{irt} − education level, employment status, and life satisfaction) and region (δ_r) and time fixed effects (δ_t). I use post-stratification and population weights on my estimates

to account for the sampling error and the non-response bias.

1.6 Results

1.6.1 Summary Statistics

Panel (c) of the Figure 1.2 plots the proportion of the enfranchised and the disenfranchised foreign-born population over constituency population between census years in a box plot, where the box represents the interquartile range and the black line inside the box is the median. A key takeaway from this figure is that neither the enfranchised (orange colour) nor the disenfranchised (blue colour) groups dominate in any census period. In the 1981 Census, both groups of immigrants were on average just two or three per cent of the total population. Even by the 2011 Census, the mean population of the two groups was just about 6%. Some outlier constituencies (black dots) have a large share of immigrants, but those are small in number and balanced between the two groups.

Table 1.1 presents the summary statistics for variables used in the data analysis. A constituency had an average population of 274,000 with about 8.8% foreign-born population. The foreign-born population comprises the enfranchised and the disenfranchised groups with a mean population of 4.6% and 4.2%, respectively. The UK parliament met on average 155 days in a year, varying between 125 days (minimum) and 178 days (maximum) between 1981 and 2011. An average MP spoke on about 53% of the parliament days, on average talked about immigrants concerns for about 7.8% of the days. For comparison, the other topics and the average percentage days MPs spoke about them are: Tax (8.1%), NHS (4.4%), European Union (4%) and LGBTQ (0.003%). The sentiment scores are conditional on MPs talking about those issues in the parliament. An average speech score for addressing immigrants across constituencies in a given year was 5.6, with a standard deviation of 0.08. On average, 52% of MPs voted for amendments in favour of immigrants and 46% of MPs voted against immigrants on the bills in the parliament.

The first-stage F statistics are presented at the bottom of the tables; the KP F stat is the Kleibergen-Paap F-stat for weak instruments. The F-stat (Enf) and F-stat (DisEnf) are the Sanderson-Windmeijer partial F-stat for the joint significance of the instruments in the two separate first-stage regressions. Figure 1.3 reports the graphical analogue of the first-stage regressions (Appendix Table A.11). The results from the first stage suggest the instrument is strong and predictive of the immigrants location.

1.6.2 Effect on Parliament Speeches

Until recently, researchers used party manifestos and voting records to measure political preferences (Dinas and Gemenis, 2010; Cage et al., 2021). Speeches in parliament allow MPs to express their views in a nuanced way and are less likely to be subject to partisan control than their voting records. I discuss how the enfranchisement of immigrants has impacted debates in parliament about immigrants. Table 1.2 shows the paper's main results with the OLS estimation of equation (1.1) in Columns 1 and 4 and 2SLS estimation in Columns 2, 3, 5 and 6.

Overall, I find that the OLS point estimates are lower than the 2SLS estimates for the enfranchised group, suggesting a negative selection effect. The enfranchised immigrants could be attracted to declining constituencies, where they can set up new businesses. This attracts new enfranchised immigrants in those locations and the issues politicians' raise in the parliament, in addition, these effects may persist over time biaising the OLS estimates towards zero. While for the disenfranchised immigrants, the OLS estimates are higher than the 2SLS estimates. One potential explanation is that there are omitted variables positively correlated with constituencies that attracted disenfranchised immigrants and the politicians' response in the parliament (positive selection effect). These estimates suggest a positive selection effect, where those immigrants are attracted to constituencies with diverse cultures and opportunities to work. For example, the omitted variable cultural factors positively impacts the outcome variable (more discussions on social cohesion and hate crime) and the share of disenfranchised immigrants (like to settle in places with diverse cultures).

Quantitative Effects Columns 1, 2 and 3 present results on the outcome variable "Discussions". On average, the MPs spoke about immigrants on 7.8% of the parliament days. Column 1 (OLS) suggests that higher enfranchised immigration increases parliament discussions about immigrants and the results are reversed for disenfranchised immigration, although both coefficients are not significant. Column 2 (2SLS) suggests that a 1 SD (or five p.p.) higher enfranchised immigration increases the share of parliament days on which MPs talk about immigrants by 1.3 p.p. (16.66% relative to the mean outcome variable in levels). I find that this increase comes from higher use of words for the enfranchised countries and not the disenfranchised countries (Appendix Table A.14 Column 4), i.e., the speeches are targeted towards the enfranchised immigrants. In contrast, the 2SLS estimates in Column 2 suggests that a disenfranchised immigration of similar magnitude reduces the parliament discussions by 1.5 p.p. (effect size: 19.2%).

To interpret these results, I compare debates in parliament on other topics. Given that the UK parliament meets in person for about 155 days in the year, an average MP speaks about their constituency concerns for about 34 days (22.3%), about NHS for 7 days (4.4%), about taxes for 12 days (8.1%). Table 1.2 Column 2 suggests that 5% more enfranchised immigrants in a constituency increases the incidence of days on which immigration is discussed by 2 days. Overall, for a constituency that receives 5% more immigrants and in which 50% are enfranchised, there is no change in the frequency of mentions of immigrants in parliament debates (the positive and negative effects cancel each other).

Qualitative Effects Columns 4, 5 and 6 ("Valence") use a standardized measure of the valence scores. There is a drop in the sample size for the speech valence because not all MPs talk about immigrants in the parliament.[21] Column 4 (OLS) suggests that higher enfranchised immigration increases valence scores on speeches about immigrants and the results in the opposite direction for the disenfranchised immigration, again both coefficients are not significant. The 2SLS results in Column 5 suggest that a 1 SD increase in the enfranchised immigration in a constituency increases the valence scores by 0.23 SD, i.e., the MPs talk more positively about immigrants. I find that the disenfranchised immigration leads to a fall in the valence scores by a similar magnitude.

In Table 1.2 Columns 3 and 6, I augment the baseline specification by including as control variables: vote shares of parties in the constituency, stock of immigrants, ethnic-minority identity of MPs and observable characteristics of the immigrants (age, gender, marital status, employment and educational levels).[22] If immigration impacts these variables, then some of the changes in the outcome variables might be mediated through them. Reassuringly, neither the economic nor the statistical significance of the coefficients are affected.[23] Additionally, I find that dropping the enfranchised immigrants who come from countries that are most ethnically close to natives (Ireland, Australia, Canada and New Zealand) does not affect the results (Appendix Table A.15).

Robustness Appendix Section 1.11 provides a detailed discussion of the robustness checks. I summarise them in this paragraph. The main results in Table 1.2 are robust to alternative versions of the estimation strategy, i.e., in levels, in decades, and using

[21] Table A.12 replicates Table 1.2 by replacing the missing valence scores with the last available score for each constituency. I find almost similar results suggesting that missing data is not a big concern.

[22] I use average values of these variables using individual data from the British Household Panel Survey (1991 − 2008) and UK Household Level Panel Survey (2009 − 2019).

[23] Table A.13 shows the results are robust to the inclusion of individual controls one at a time.

share of enfranchised immigration (Appendix Section 1.11). In Appendix Section 1.11, I construct the instrument without the leave-out version and with a leave-out version at the county level. Appendix Section 1.11 addresses any concerns that the 1981 immigrants' settlements and other constituency-specific characteristics are correlated and might have had a time-varying effect on economic and political conditions in later periods. Additionally, I observe a similar inference using the shock level transformation that has a numerical equivalence to the shift-share instrument as suggested by Borusyak et al. (2020).

In summary, I find robust evidence that politicians update their behaviour in the parliament in response to the changes in enfranchised and disenfranchised immigration. There are no electoral benefits from putting more effort into helping the disenfranchised immigrants. If the member of parliament is concerned about hostility from natives[24], they typically do not raise issues relating to immigrants and are more likely to talk about them less positively (Hypothesis 1). For the enfranchised group, the incumbents respond by increasing time spent in the parliament mentioning immigrants and address them with positive sentiment. The electoral benefits increase as the size of the enfranchised group increases. Next, I examine how the electoral costs change for incumbents.

1.6.3 Effect on Party Vote Shares

Recent evidence suggests immigration is linked to the rise of anti-immigrant populist parties, a strong indication of natives' displeasure with the existing political system (Halla et al., 2017; Dustmann et al., 2019; Guriev and Papaioannou, 2020). To understand a change in the electoral costs, in the Table 1.3, I analyse the link between immigration and changes in vote shares of parties in the constituencies. Vote shares of political parties are split into four groups: the Labour party (Column 1), the Conservative party (Column 2), regional parties Liberal Democrats[25] and Plaid Cymru (Column 3) and other parties (populist parties, the Green party and independent candidates in Column 4).[26]

I find that only an increase in the enfranchised immigration leads to a rise in vote share for the other parties (namely, the populist parties and the Green party). The results sug-

[24]Evidence from Blinder and Allen (2016) suggests that natives preference to reduce immigration are not new and go as far back as 1970s.

[25]The party is a federation of the English, Scottish and Welsh Liberal Democrats. The largest among them, the English Liberal Democrats is a federation of eleven regional parties in England.

[26]The House of Commons Library reports votes shares for the Green party and UKIP party separately from 2005 GE but combines votes shares for the UKIP party, the Green party and independent candidates as other votes before the 2005 GE. For consistency, I combine them across all years.

gest that as incumbents spoke positively about immigrants, natives in the constituency moved away from the Labour party (a left-leaning pro-immigration party) towards alternative options. On the other hand, in the constituencies with higher disenfranchised immigration, incumbents were already talking less positively about immigrants, and I find no impact on vote share for the other parties (Column 4). There is a drop in the Conservative vote share and an increase in the Labour vote share.[27]

I find that these changes in party vote shares did not happen against a background of natives moving in or moving out of the constituencies that observed these migration flows (Appendix Table A.16, Column 1). Nor did the turnout of voters change significantly in these constituencies. Enfranchised immigration led to a marginal decrease in turnout by 1.4%, i.e., a fall by 0.009 p.p. (Table A.16, Column 2).[28] Additionally, the party affiliation of the MP representing these constituencies did not change with the enfranchised immigration (Table A.16, Column 3 to 6). Conservative MPs lost their seats in the constituencies with higher disenfranchised immigration (after a significant fall in vote shares), and they were replaced by Labour and regional party MPs.

While party affiliation of the representatives in the constituency does not change, I analyse if there is a more descriptive representation of ethnic-minority MPs. Since the descriptive representation will take some time,[29] I test for this argument by slightly modifying equation (1.1). I look at changes in the outcome variable in the ten years following the changes in the share of foreign-born in the constituency in the previous ten years. I find evidence that the enfranchised immigration increased the probability that the local MP of a constituency will be someone from an ethnic-minority background in the following decade (Appendix Table A.17). A similar increase in the disenfranchised group does not affect the descriptive representation. Reassuringly, I find no impact on parliament speeches by those constituencies that had a descriptive representation of the ethnic-minority MPs (Table A.18).

Overall, as incumbents favour the enfranchised immigrants, natives respond by increasing vote shares for the other parties, but the party affiliation of MPs does not change. The electoral costs seem to be compensated by some other move, and incumbents hold on to their positions. It could be that incumbents focus on policies favoured by both

[27]This could be due to the Labour party increasing its efforts more in the constituencies with disenfranchised immigration than enfranchised immigration, as the incumbent is already talking positively about immigrants in the latter.

[28]While both enfranchised and disenfranchised immigrants could influence the local and the national politics, I focus on the members of parliaments' actions because the local elections have a meagre turnout of natives (around 25-30%). The European immigrants are enfranchised at the local elections, but their turnout is even lower than the enfranchised immigrants.

[29]The ethnic-minority MPs are mostly second- or third-generation immigrants who won seats.

natives and immigrants or find ways to reduce the anti-immigrant votes among natives, or do both. Feigenbaum and Hall (2015) also find that the US legislators take strategic positions on foreign-trade bills in response to the economic shocks from Chinese import competition, and these shocks did not affect the re-election of incumbents. To understand these effects, I analyse the voting on bills related to immigration.

1.6.4 Voting on Immigration Bills

This outcome variable is of particular interest because it relates to the action of voting, rather than just participating in debate about immigration. However, it could be subject to party controls. Slapin and Kirkland (2020) shows that within-party rebellion is limited in the UK. In Table 1.4, I analyse how immigration affects voting on amendments to bills in favour and against immigrants.

I find that a 1 SD increase in the enfranchised immigration makes MPs 9.3 p.p. significantly more likely to amend the bill to make future immigration tougher (Column 3). On the amendments in favour of immigrants, I find that the MPs with a 1 SD higher enfranchised immigration are 8.1 p.p more likely to vote against amendments in favour of immigrants and to keep the bill at status quo. Table 1.4 Columns 2 and 4 includes additional controls apart from region and year fixed effects, and the results look similar to the estimation without the controls.[30]

At the same time, a 1 SD higher disenfranchised immigration makes MPs 14.7 p.p. (28% effect) more likely to vote for amendments in favour of immigrants and 16.3 p.p less likely to vote against the immigrants (Column 3). An incumbent with rising disenfranchised immigration does not find any electoral benefits from these immigrants, and speaking less positively about the immigrants helps to contain electoral costs. These findings validate Hypothesis 2: incumbents favour existing enfranchised immigrants and, at the same time, restrict future immigration. Given the size of the mean dependent variable, the results suggest that the two types of immigration to the UK had large effects on the immigration policy. In addition, voting on bills to restrict future immigration helps the incumbent increase the support of natives in their constituency who have anti-immigration preferences. They are a majority in the constituency, and the incumbent accommodates their preferences. I find several pieces of evidence supporting this argument.

[30]In Appendix Table A.14, I provide evidence that my main results are robust to the exclusion of speeches with words related to visa and nationality and that involve discussion of immigration bills. These speeches may capture discussions about future immigrants, and incumbents may have a different sentiment in them. The point estimates remain almost similar here because only a small fraction of the speeches are dropped.

First, using data from the European Social Survey, in Appendix Table A.19, I confirm that as compared to natives, existing immigrants are more likely to be open towards prospective immigrants, and even immigrants with UK citizenship do not favour less future immigration.[31] Second, in constituencies with higher electoral competition (lower win margin), both immigrants' and natives' votes could be pivotal. I find that the incumbents take a cautious approach in this case. They do not talk favourably for the enfranchised immigrants if win margins are low and also refrain from voting to restrict future immigration (Appendix Table A.20). The incumbents are more open to both enfranchised immigrants' and natives' preferences when the win margins are high.

Third, the incumbent MPs are more likely to be favourable to the enfranchised immigrants in constituencies where the vote share of the Labour party is high. A large vote base supportive of immigration helps incumbents (Appendix Table A.21, Columns 2 and 4). This result supports Hypothesis 3. At the same time, as the Labour party lost some votes in the process, those constituencies were most likely to vote to restrict future immigration to appease the preference of the native majority (Column 6). A similar and opposite pattern is also visible for the constituencies with higher Conservative party vote shares (Appendix Table A.22).

In summary, as enfranchisement leads to immigrants' political inclusion, the incumbents respond to them favourably. However, immigrants are not a big voting bloc, and there is anti-immigrant sentiment among natives. Incumbents take this into account and only respond when it is not costly to do so and compensate by restricting future immigration. In the following sub-section, I investigate how these two immigrant groups are different and why politicians pay attention to the enfranchised immigrants.

1.6.5 Enfranchised vs Disenfranchised Immigrants

I begin by studying descriptively how enfranchised and disenfranchised immigrants differ in socio-demographic characteristics. I use the variables from the European Social Survey for the first-generation immigrants.[32] Table 1.5 provides balance statistics.

I regressed the outcome variable on an indicator variable for whether the foreign-born respondent is from an enfranchised country in a survey year. Columns 1 and 2 present the average values for respondents from the disenfranchised (DisEnf) and the enfranchised (Enf) groups, respectively. I obtain the p-values in Column 3 using an indicator variable

[31] I can not reject a null for a difference between enfranchised and disenfranchised immigrants.

[32] The academic literature has widely used this survey to study natives' political preferences on immigration (for example, Card et al. (2005); Luttmer and Singhal (2011); Alesina et al. (2019)).

for the enfranchised immigrants, i.e., the γ coefficient in equation (1.3). In Column 4, I compute the q-values following the False Discovery Rate method by Benjamini and Hochberg (1995) to handle multiple hypothesis testing. I use post-stratification weights and population weights on my estimates to account for sampling error and non-response bias.

Among the foreign-born respondents in the survey, about 53% were from the enfranchised group.[33] On average, the disenfranchised group has younger respondents and a lower probability of living with a partner than the enfranchised group. Apart from these variables, I observe a balance between the two groups' respondents on education, labour force participation, job satisfaction, and overall life satisfaction. The survey offers several education measures: respondent's years of full-time education completed and education measured by an international standard classification, respondent's partner's, father's, and mother's education levels. The respondents from both groups are equally likely to have completed 14 years of full-time education. Just more than half of the respondents and a third of their partners report having undertaken paid work in the last seven days.

The historical association of the enfranchised immigrants with the UK could also make immigrants more familiar with the UK institutions (the parliament, legal system, and first-past-the-post voting). These immigrants might have more interest in the political situation in the country. I use the political attitude questions from the European Social Survey to study this argument. Appendix Figure A.4 plots the coefficient of an indicator variable for the enfranchised group and the 95% confidence interval. The outcome variables presented on the y-axis are measured on a scale from $0 - 10$, except for TV and newspaper hours. All outcomes are standardised to make an easy comparison across variables.

I find that enfranchised immigrants do not display significantly higher interest in politics or spend more time learning about political news. At the same time, disenfranchised immigrants do not feel discriminated against due to a lack of voting rights. Both groups are equally likely to be satisfied with democracy and think the political system allows people to have a say or influence politics. There are insignificant differences between the immigrant groups regarding trust in UK parliament, UK legal system, political parties and politicians.[34] Enfranchised immigrants display higher confidence in their own ability to participate in politics, originating potentially from their political inclusion upon entry

[33] This proportion is similar to the distribution of foreign-born in the census data for this period.

[34] Disenfranchised immigrants show a stronger trust in the European Parliament; it could be because all European immigrants are disenfranchised and trust the European Parliament while the enfranchised immigrants have no prior connections to the European Parliament.

into the country.

The descriptive evidence from the European Social Survey suggests that immigrants from the two groups are balanced in many aspects. Next, I analyse why politicians respond to the enfranchised immigrants. One reason is that an immigrants' political inclusion makes the incumbent constitutionally responsible for their representation in the parliament. The incumbent may feel morally obliged to represent immigrants. Enfranchised immigrants might feel empowered and may get more involved in the local area. In addition, politicians can gain trust, and increase their vote base among the immigrant community by helping immigrant voters with their concerns (Butler et al., 2012; Bussell, 2019). To investigate this further, I analyse the political engagement of immigrants.

1.6.6 Political Engagement of Immigrants

The European Social Survey also collects information on the socio-political actions undertaken by respondents. The survey asks the question− "There are different ways of trying to improve things in the UK or help prevent things from going wrong. During the last 12 months, have you done any of the following?". The options and the average response rates are− contacted a politician or government official (15%); worked in a political party or action group, another organisation or association (10%); worn or displayed a campaign badge/sticker (8%); signed a petition (30%); taken part in a lawful public demonstration (5%); boycotted certain products (18%). Considering the low response rate for options other than signing petitions, I create a combined index (any action): an indicator variable that takes one if the respondent marked any of the options and zero otherwise.

I analyse the differences between respondents from the two groups to examine whether the enfranchised immigrants are different in their socio-political engagement. The first three columns of Table 1.6 present the results using the outcome variable signing a petition. Columns 4 to 6 present the results on the index variable− any action. In Columns 1 and 3, I study the level difference across the enfranchised and the disenfranchised immigrants. The enfranchised immigrants are 7.6 p.p. more likely to sign petitions (29% higher over a control mean of 0.260) and 5.5 p.p. more likely to have taken any action (13.6% more on a control mean of 0.404).[35]

Next, I analyse further what determines the socio-political actions of immigrants. The

[35]In Appendix Table A.23, I replicate the analysis for the remaining individual options. The lower response rate for these options leads to insignificant differences across the immigrant groups.

UK's immigrants come from a diverse set of countries, some from strong democracies and some from poor democracies. I use the democracy score for each respondent's country of origin published annually by Freedom House. I create a dummy variable for respondents from countries with an above-median democracy index. The enfranchised immigrants from poor democracies observe a sudden increase in their political and civil rights when they move to the UK.[36]

Suppose enfranchisement is empowering for immigrants. In that case, the most significant gains should come from immigrants from poor democracies relative to immigrants from strong democracies. Table 1.6, Columns 2 and 5 shows the result of a test for this argument, in which I analyse heterogeneity in the socio-political actions for the enfranchised immigrants. The largest difference in the socio-political actions between the enfranchised and the disenfranchised immigrants is when the respondents arrive in the UK from strong democracies (i.e., those with a high democracy score like the UK). The entire effect observed in Columns 1 and 3 is explained by respondents from strong democracies.

The results imply that enfranchisement and some experience with voting rights matter for the political engagement of the immigrants, and that enfranchisement per se is not empowering enfranchised immigrants. Next, I examine if the disenfranchised immigrants who have UK citizenship are also as politically engaged as the enfranchised immigrants. If immigrants' enfranchisement matters, it should be most important when they do not have UK citizenship.

I find that the enfranchised immigrants without UK citizenship are 10.8 p.p. (effect size 41.5% over a mean of 0.260) more likely to have signed a petition than the disenfranchised immigrants without UK citizenship (Table 1.6 Column 3). Taking up UK citizenship increases the probability of signing a petition for both groups by 13 p.p.. It is notable that there is no difference between enfranchised and disenfranchised immigrants in the likelihood of signing petitions when they both have UK citizenship. Column 6 tells a similar story: enfranchised immigrants without UK citizenship are 23.5% more likely to have taken any socio-political action in the last 12 months. These differences disappear once both groups have UK citizenship.

One may argue that a crucial requirement to undertake any socio-political action is English language skills, which might be a barrier for immigrants from the disenfranchised group. On the other hand, the enfranchised group may be more familiar with the English

[36]Freedom House provides a democracy index as the sum of political rights score and civil rights score on a scale of 1 to 14, where 14 is the highest. Within the Commonwealth member countries, the mean and SD of the score was 10.63 and 2.75, respectively. The UK is classified as the strongest democracy with a score of 14. Cameroon had the lowest score of 4.

language, given their historical association with the UK. Using the UK household panel survey, which records respondents' English language skills (speaking and reading level), I find that the enfranchised immigrants appear to be worse in their English language skills (Appendix Table A.26).

Beyond political engagement through socio-political actions, I find that the enfranchised immigrants say they actively participate in elections (Appendix Table A.24). The enfranchised immigrants with UK citizenship are as likely to vote in the elections as natives. In contrast, the disenfranchised immigrants with UK citizenship are 14.3 p.p. less likely to vote than natives. The probability of voting for enfranchised immigrants without UK citizenship is 50% (turnout for the natives in the survey is 74.6%). Thus, initial political inclusion of immigrants also translates into a long term higher electoral participation.[37] Ferwerda et al. (2020) and Bratsberg et al. (2021) find similar evidence from Norway, immigrants with early access to political institutions are more likely to participate in subsequent electoral contests.

1.6.7 From Political Inclusion to Parliament Discussions

While the survey respondents may have some social desirability bias, the descriptive evidence points to higher political engagement of the enfranchised immigrants due to their political inclusion. In this sub-section, I analyse if incumbents respond to the political engagement of immigrants with the debate titles of the parliament speeches using 2SLS estimation. I examine if incumbents respond to pressure from immigrants by spending more time in parliament introducing petitions and private member bills and asking questions to specific ministers. Any changes to time allocation on parliament days of this type will reflect a push explicitly coming from the political engagement.

Table 1.7 presents the findings. Columns 1 and 2 shows there are no changes in the parliament speeches on the extensive margin, i.e., the total speech words per parliament day (Column 1) or in the number of parliament days each year in which MPs participate in the parliament (Column 2).[38] Columns 3 to 5 address changes on the intensive margin. Column 3 shows how enfranchised immigration affected the outcome variable "Discussions", same as Table 1.2 Column 2. Table 1.7 Column 4 and 5 split up the changes in the parliament days spent in addressing immigrants (Column 3) into changes in time

[37] Appendix Figure A.5 suggests that the enfranchised immigrants are also more likely to take up UK citizenship than the disenfranchised immigrants and this gap has been growing over time.

[38] I also do not find any changes in the overall distribution of speeches about immigrants across the group of words suggesting there are no larger changes in the way MPs refer to immigrants (Figure A.6).

spent on petitions, direct questions and private member bills (Column 4) and addressing immigrants in the other remaining topics (other references− Column 5).

Column 4 confirms that incumbents respond to the push from the enfranchised immigrants' political engagement in their constituency (a significant 28% rise in the parliament debates). If the political engagement of immigrants drives incumbents' behaviour, then incumbents must also respond more if there is more political engagement. I find the main result on parliament "Discussions" is also driven by constituencies with immigration from stronger democracies (Appendix Table A.25, Columns 2 and 4). At the same time, there is no such effect on MPs' voting behaviour, which responds to the natives' preferences.

1.7 Conclusion

International migrants are a large and growing unenfranchised group across many developed countries. A growing literature on the political effects of immigration has documented a rise in support for populist parties and an increase in polarisation (Halla et al., 2017; Dustmann et al., 2019; Guriev and Papaioannou, 2020; Rozo and Vargas, 2021). The efforts to assimilate the immigrants have mainly concentrated on labour market policies (Lleras-Muney and Shertzer, 2015; Bandiera et al., 2019) and the importance of language skills (Dustmann and Fabbri, 2003; Bleakley and Chin, 2010; Fouka, 2020; Heller and Slungaard Mumma, 2020). The political inclusion of immigrants has received limited attention. Historically, the acquisition of voting rights has been an important tool for disempowered groups to overcome economic oppression.

In this paper, I exploit the unique setting of immigrants' enfranchisement in the UK to study how their political inclusion shapes politicians' response to immigration. I use cross-sectional and over-time variation in enfranchised immigration, and use a leave-out version of the shift-share instrument to overcome endogeneity in placement of immigrants across locations in the UK. I find that enfranchisement leads to a higher level of political engagement of immigrants (such as socio-political actions and voting).

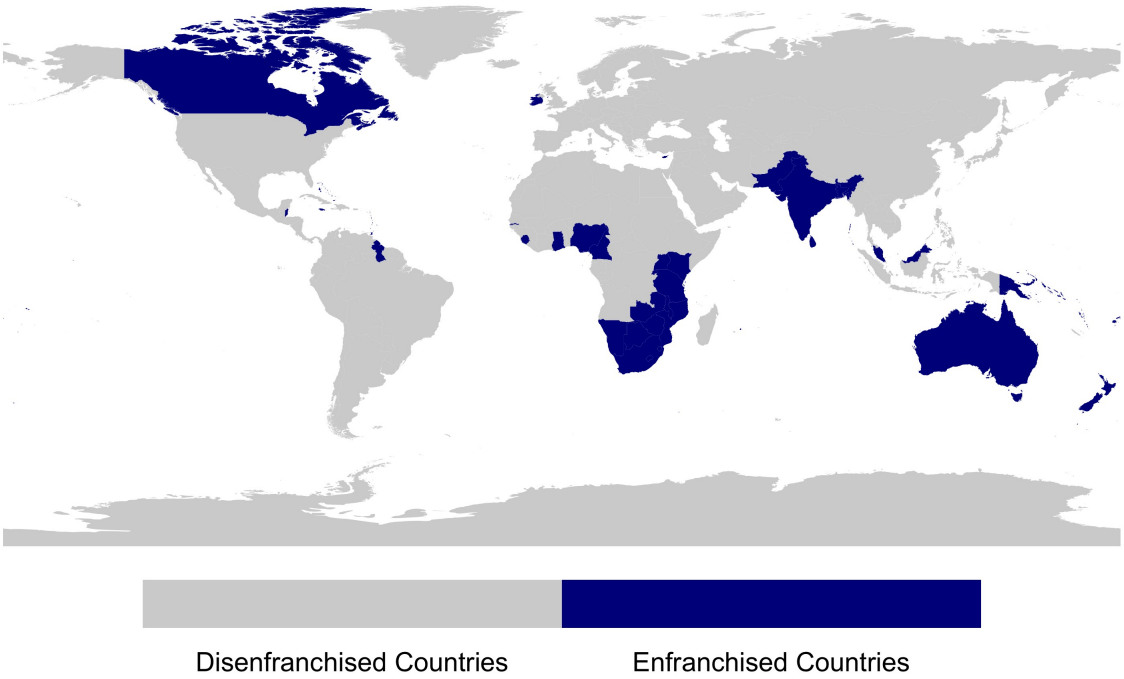
The incumbents respond to this political engagement by spending more time in the parliament talking about immigrants and addressing them positively. However, the immigrants are a minority voting bloc, and there is anti-immigrant sentiment among the native majority. Therefore, the incumbents only respond when it is not too costly for them, i.e., when the vote base is more open to immigration (higher Labour party vote share) or when the

electoral competition is not too fierce. The incumbents compensate for their actions by voting to restrict future immigration.

Findings in this article may be specific to the unique context of the UK. However, they may still be relevant for designing policies aimed at immigrants' integration and political inclusion. Sweden and Switzerland in recent years had referendums at the local level to enfranchise foreign-born non-citizens after a few years, much before naturalisation is possible. In the UK, while non-citizen voting enhanced the visibility and voice of immigrants and led to a representation of their concerns in the parliament in positive light, enfranchisement remains cheap talk.

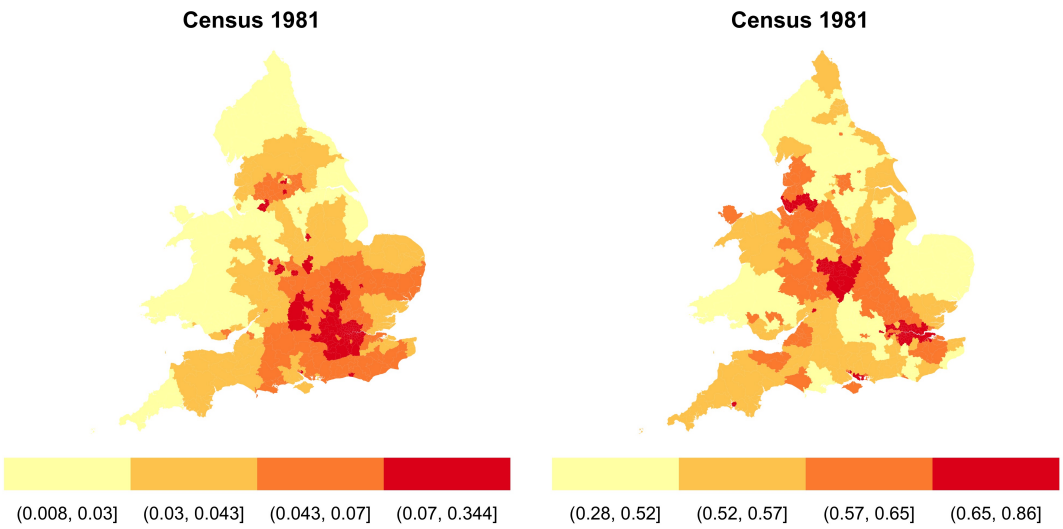
Figures

Figure 1.1—Enfranchised Countries



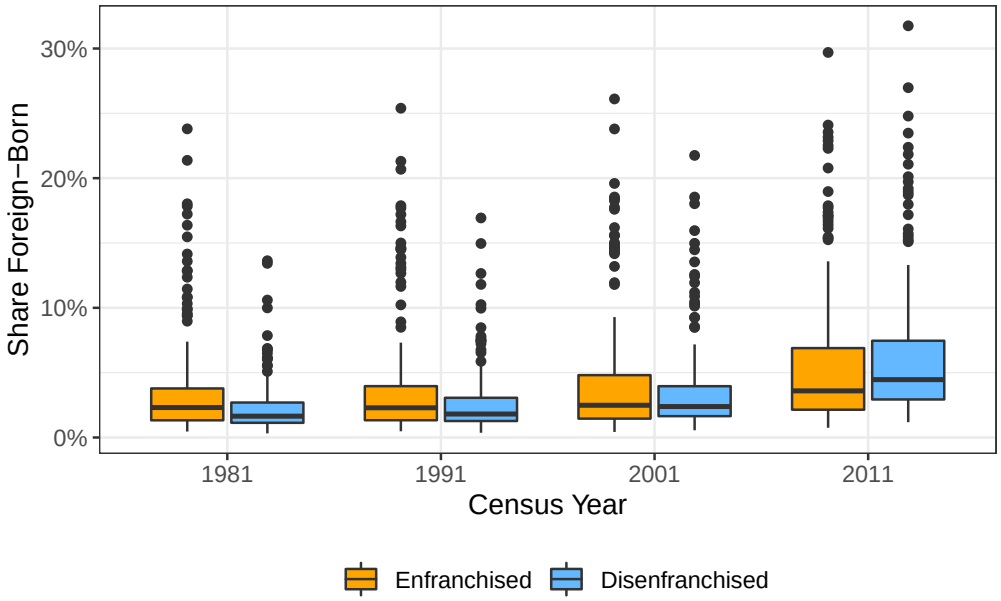
Notes: The map highlights countries whose citizens have a right-to-vote in the UK in my analysis period. The voting rights are conditional on membership to the Commonwealth of Nations. The membership has changed slightly over time, the details are provided in Section 1.3. A full list of countries is in Appendix Table A.1. The major immigrant sending countries by region are Pacific (Australia and New Zealand), Europe (Cyprus, Malta, Irish Republic), Caribbean and Americas (Canada, Bahamas, Dominica, Jamaica, Barbados), Asia (Bangladesh, India, Pakistan, Malaysia, Singapore, Sri Lanka) and Africa (Ghana, Kenya, Nigeria, Uganda, South Africa).
Data Source: https://www.gov.uk/register-to-vote and https://thecommonwealth.org/.

Figure 1.2—Distribution of Immigrants



(a) Share Foreign-Born

(b) Share Enfranchised Foreign-Born

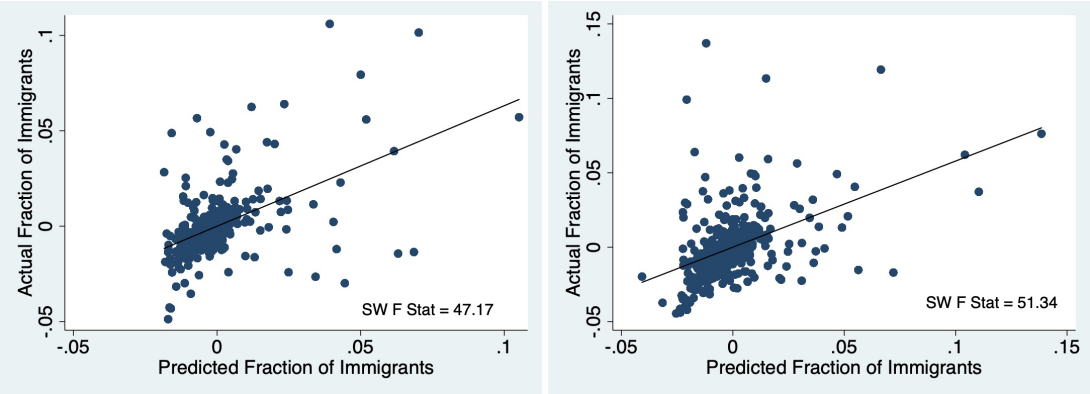


(c) Share Immigrants over time

Notes: Using the 1981 Census, Panel (a) and (b) show the spatial distribution in quartiles of immigrants across England and Wales. Panel (a) is the share of foreign-born population over the total population. Panel (b) is the share of enfranchised foreign-born population over total foreign-born population. Panel (c) uses a box plot to show changes in the share of foreign-born over the total population across Census 1981, 1991, 2001 and 2011 divided into the enfranchised and the disenfranchised groups.
Data Source: The Census, 1981 − 2011.

Figure 1.3—First Stage: Partial Correlations

(a) Enfranchised Immigration **(b)** Disenfranchised Immigration



Notes: The figure plots the relationship between the fraction of immigrants and the instrument, after partialling out region and year fixed effects for the enfranchised (Panel (a)) and the disenfranchised groups (Panel (b)). The F-statistic in the figure is the Sanderson-Windmeijer partial F-stat for the instruments' significance from two separate first-stage regressions.
Data Source: The Census, 1981 − 2011.

Tables

Table 1.1—Summary Statistics

	Mean	SD	Min	Max	Obs.
Total Population (in thousands)	274.32	241.43	52.71	1347.49	5760
Share of Foreign-Born	0.088	0.09	0.01	0.50	5760
Share of Enfranchised Foreign-Born	0.046	0.05	0.00	0.30	5760
Share of Disenfranchised Foreign-Born	0.042	0.04	0.00	0.32	5760
Total Parliament Days per year	154.50	13.95	125	178	5760
Share of Speech Days:					
... Total	0.53	0.30	0.00	1.00	5760
... Immigrants	0.078	0.08	0.00	0.66	5760
Speech Valence:					
... Immigrants	5.60	0.08	4.59	6.14	5406
Voting Pro-Immigration on Bills	0.52	0.40	0.00	1.00	5750
Voting Anti-Immigration on Bills	0.46	0.40	0.00	1.00	5630

Notes: The sample includes a balanced panel of 192 constituencies over 30 years. The constituencies have been aggregated to their parent units to account for boundary changes over the years. The valence scores and voting are conditional on politicians making a speech or being present during the voting in the parliament.

Table 1.2—Effect of Enfranchisement on Parliament Speeches

	Δ Discussions			Δ Valence		
	(1) OLS	(2) 2SLS	(3) 2SLS	(4) OLS	(5) 2SLS	(6) 2SLS
Enfranchised Immigration	0.004	0.013**	0.013**	0.038	0.233***	0.205***
	(0.003)	(0.006)	(0.006)	(0.033)	(0.077)	(0.073)
Disenfranchised Immigration	-0.002	-0.015**	-0.022***	-0.053	-0.230**	-0.219**
	(0.003)	(0.006)	(0.008)	(0.043)	(0.090)	(0.103)
Mean DV (in levels)	0.078	0.078	0.078			
KP F Stat		21.73	27.31		22.44	28.04
F Stat (Enf)		47.17	56.31		43.27	53.55
F Stat (DisEnf)		51.34	57.47		60.82	70.12
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls			Yes			Yes
Observations	5760	5760	5760	5091	5091	5091

Notes: This table presents the OLS (Columns 1 and 4) and the 2SLS (Columns 2, 3, 5 and 6) estimates of the effect of enfranchisement on the parliament speeches. The dependent variables are changes in the quantitative (Column 1 to 3) and qualitative (Columns 4 to 6) measures of the parliament speeches about immigrants. Discussions is the share of the parliament days where politicians talk about immigrants. Valence is the sentiment score associated with those speeches, a higher number indicates a positive emotion. Enfranchised and Disenfranchised immigration is the fraction of foreign-born population from the enfranchised and the disenfranchised countries over the baseline constituency population, and are instrumented using the shift-share instrument described in Section 1.5.1 of the main text. The control variables in Columns 3 and 6 include: vote shares of parties in the constituency, stock of immigrants, ethnic-minority identity of MPs and observable characteristics of the immigrants. The KP F stat is the Kleibergen-Paap F-stat for the joint significance of the two instruments in the first-stage regression. The F-stat (Enf) and F-stat (DisEnf) are the Sanderson-Windmeijer partial F-stat for the instruments' joint significance in the two separate first-stage regressions. Robust standard errors clustered at the constituency level are in parentheses. ***, **, and * indicate significance at the 1, 5, and 10 per cent level. Data Source: Text of Speech from the UK Parliament Hansard, 1972 − 2011.

Table 1.3—Effect on Party Vote Shares

	Δ Vote Share			
	Labour	Conservative	LibDem + Plaid Cymru	Populist + Green + Independent
	(1)	(2)	(3)	(4)
Enfranchised Immigration	-0.012**	0.006	0.002	0.005**
	(0.006)	(0.005)	(0.005)	(0.003)
Disenfranchised Immigration	0.018**	-0.022***	0.007	-0.003
	(0.009)	(0.006)	(0.006)	(0.003)
Mean DV (in levels)	0.366	0.378	0.229	0.027
KP F Stat	21.73	21.73	21.73	21.73
F Stat (Enf)	47.17	47.17	47.17	47.17
F Stat (DisEnf)	51.34	51.34	51.34	51.34
Region FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	5760	5760	5760	5760

Notes: This table reports the 2SLS estimates for a panel of 192 constituencies over 30 years. The dependent variables in Columns 1 to 4 are measures of vote shares for the Labour party (Column 1), the Conservative party (Column 2), the regional parties (Column 3) and the other parties (Column 4). Enfranchised and Disenfranchised immigration is the fraction of foreign-born population from enfranchised and disenfranchised countries over the baseline constituency population, and are instrumented using the shift-share instrument described in Section 1.5.1 of the main text. The KP F stat is the Kleibergen-Paap F-stat for the joint significance of the two instruments in the first-stage regression. The F-stat (Enf) and F-stat (DisEnf) are the Sanderson-Windmeijer partial F-stat for the instruments' joint significance in the two separate first-stage regressions. Robust standard errors clustered at the constituency level are in parentheses. ***, **, and * indicate significance at the 1, 5, and 10 per cent level.
Data Source: Text of Speech from the UK Parliament Hansard, 1972 − 2011 and House of Commons Library Report on General Elections 1970 − 2010.

Table 1.4—Effect on Voting on Immigration Bills

	Δ Voting on Immigration Bills			
	Amend Pro Immigration		Amend Anti Immigration	
	(1)	(2)	(3)	(4)
Enfranchised Immigration	-0.081**	-0.100***	0.093**	0.123***
	(0.040)	(0.037)	(0.047)	(0.042)
Disenfranchised Immigration	0.147**	0.135**	-0.163**	-0.120
	(0.059)	(0.062)	(0.073)	(0.081)
Mean DV	0.522	0.522	0.459	0.459
KP F Stat	21.74	27.28	21.47	26.94
F Stat (Enf)	47.18	56.29	47.09	56.48
F Stat (DisEnf)	51.38	57.41	50.29	56.98
Region FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls		Yes		Yes
Observations	5740	5740	5500	5500

Notes: This table reports the 2SLS estimates for a panel of 192 constituencies over 30 years. The dependent variables in the change in probability of voting on immigration bills tabled in the UK parliament. Columns 1 and 2 measure amendments in favour of immigrants or keeping the bill at status quo. Columns 3 and 4 measure amendments in against immigrants or keeping the bill at status quo. Enfranchised and Disenfranchised immigration is the fraction of foreign-born population from enfranchised and disenfranchised countries over the baseline constituency population, and are instrumented using the shift-share instrument described in Section 1.5.1 of the main text. The control variables in Columns 2 and 4 include: vote shares of parties in the constituency, stock of immigrants, ethnic-minority identity of MPs and observable characteristics of the immigrants. The KP F stat is the Kleibergen-Paap F-stat for the joint significance of the two instruments in the first-stage regression. The F-stat (Enf) and F-stat (DisEnf) are the Sanderson-Windmeijer partial F-stat for the instruments' joint significance in the two separate first-stage regressions. Robust standard errors clustered at the constituency level are in parentheses. ***, **, and * indicate significance at the 1, 5, and 10 per cent level.
Data Source: Voting on bills from the UK Parliament Hansard, 1972 − 2011.

Table 1.5—Balance Statistics: Immigrants in the UK

Variable	(1) Mean (DisEnf)	(2) Mean (Enf)	(3) p-value	(4) q-value
Age of Respondent	41.8	47.5	0.000	0.001
Gender: Female	0.46	0.44	0.70	0.91
Live with husband/wife/partner	0.54	0.59	0.020	0.12
Years of full-time education completed	14.6	14.1	0.23	0.59
Education Respondent $\leq$ ISCED 3	0.47	0.52	0.75	0.91
Education Partner $\leq$ ISCED 3	0.46	0.48	0.61	0.91
Education Father $\leq$ ISCED 3	0.66	0.68	0.90	0.95
Education Mother $\leq$ ISCED 3	0.74	0.79	0.084	0.34
Respondent: Paid Work in last 7 days	0.60	0.55	0.29	0.59
Partner: Paid Work in last 7 days	0.37	0.35	0.31	0.59
Job satisfaction [0-10]	7.46	7.50	0.95	0.95
Life satisfaction as a whole [0-10]	7.10	7.09	0.34	0.59
Number of observations		1853		
Share of Enfranchised Respondents		53.16%		

Notes: The table shows differences between immigrants from the enfranchised (Enf) and the disenfranchised (DisEnf) group on their observable characteristics. The ISCED stands for the International Standard Classification of Education. The p-values come from a t-test of the difference between outcome variable in the two groups and the q-value is the p-value of the same test accounting for multiple hypothesis testing following the False Discovery Rate method by Benjamini and Hochberg (1995). Post-stratification and population weights are applied.
Data Source: The European Social Survey, Waves 1 to 9.

Table 1.6—Political Engagement of Immigrants

	I(Signed a Petition)			I(Any Action)		
	(1)	(2)	(3)	(4)	(5)	(6)
1 I(Enfranchised Immigrant)	0.076***	0.044	0.108***	0.055**	0.017	0.094**
	(0.024)	(0.033)	(0.038)	(0.027)	(0.039)	(0.045)
2 I(Enfranchised Immigrant) × I(Democracy Index > Above Median)		0.125**			0.147***	
		(0.049)			(0.054)	
3 I(Democracy Index > Above Median)		0.018			0.019	
		(0.034)			(0.040)	
4 I(Enfranchised Immigrant) × I(UK Citizenship)			-0.092*			-0.097*
			(0.049)			(0.055)
5 I(UK Citizenship)			0.134***			0.123***
			(0.032)			(0.037)
Mean DV (Disenfranchised Immigrant)	0.260	0.260	0.260	0.404	0.404	0.404
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1853	1853	1853	1853	1853	1853
p-value: Coefficient 1 + 2 + 3 = Coefficient 3		0.000			0.000	
p-value: Coefficient 1 + 4 + 5 = Coefficient 5			0.627			0.934

Notes: This table presents differences in the political engagement between the enfranchised and the disenfranchised immigrants. Survey Question: "There are different ways of trying to improve things in UK or help prevent things from going wrong. During the last 12 months have you ... ?". Columns 1, 2 and 3 looks at the outcome variable signing petition. Columns 4, 5 and 6 use an indicator variable if the respondent marked any of the options: taken part in a lawful public demonstration; worn or displayed a campaign badge/sticker; worked in a political party, organisation or association; contacted a politician, government or local government official; boycotted certain products; signed a petition. Columns 1 and 4 show the level differences between the two types of immigrants. Columns 2 and 5 presents heterogeneity analysis by the democracy index of the country of origin of the immigrant. The democracy index is computed as a sum of political rights score and civil rights score available annually for each country from the Freedom House. Column 3 and 6 presents heterogeneity analysis by the respondent having UK citizenship. The individual controls include education, life satisfaction and employment status. Post-stratification and population weights are applied. Robust standard errors are included in the parentheses. ***, **, and * indicate significance at the 1, 5, and 10 percent level.
Data Source: The European Social Survey, Waves 1 to 9.

Table 1.7—Effect across Types of Parliament Speeches

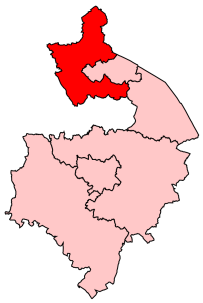
		Δ Share of Parliament Days			
	Δ Speech Words per day (1)	All Speeches (2)	Immigrant Speeches (3)	Petitions + Direct Questions + Private Member Bills (4)	Other References (5)
Enfranchised Immigration	-85.648	-0.013	0.013**	0.002***	0.011**
	(84.767)	(0.018)	(0.006)	(0.001)	(0.005)
Disenfranchised Immigration	190.426*	0.004	-0.015**	-0.002***	-0.013**
	(114.899)	(0.018)	(0.006)	(0.001)	(0.006)
Mean DV (in levels)	2207.292	0.527	0.078	0.007	0.071
KP F Stat	22.44	21.73	21.73	21.73	21.73
F Stat (Enf)	43.27	47.17	47.17	47.17	47.17
F Stat (DisEnf)	60.82	51.34	51.34	51.34	51.34
Region FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	5091	5760	5760	5760	5760

Notes: This table presents the 2SLS estimates of the enfranchised and the disenfranchised immigration on types of the parliament speeches. Column 1 measures changes in the total speech words per parliament day about immigrants. Column 2 takes changes in the share of parliament days when an MP speaks in the parliament on any topic. The dependent variable in Column 3 is change in the share of parliament days when an MP speaks about immigrants in the parliament. Columns 4 and 5 split up Column 3 into the parliament speeches about petitions, direct questions to ministers and private member bills (Column 4) and all other remaining references (Column 5). Enfranchised and Disenfranchised immigration is the fraction of foreign-born population from enfranchised and disenfranchised countries over the baseline constituency population, and are instrumented using the shift-share instrument described in Section 1.5.1 of the main text. The KP F stat is the Kleibergen-Paap F-stat for the joint significance of the two instruments in the first-stage regression. The F-stat (Enf) and F-stat (DisEnf) are the Sanderson-Windmeijer partial F-stat for the instruments' joint significance in the two separate first-stage regressions. Robust standard errors clustered at the constituency level are in parentheses. ***, **, and * indicate significance at the 1, 5, and 10 per cent level.
Data Source: Text of Speech from the UK Parliament Hansard, 1972 − 2011.

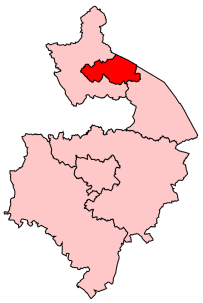
Appendix

1.8 Appendix: Tables and Figures

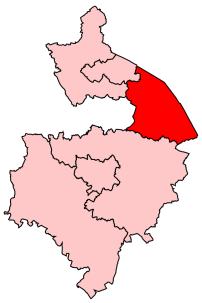
Figure A.1—Constituency Boundary Changes (Warwickshire County)



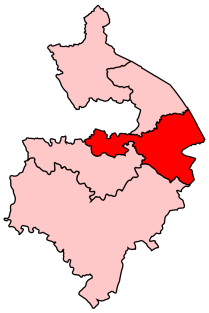
(a) North Wawickshire



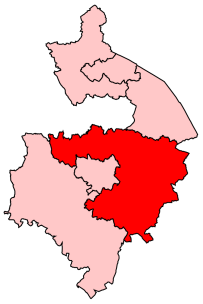
(b) Nuneaton



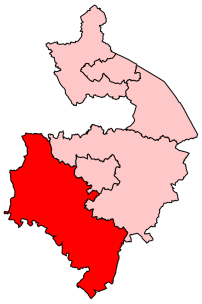
(c) Rugby



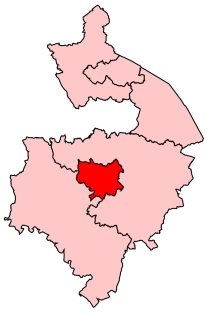
(d) Rugby and Kenilworth



(e) Kenilworth and Southam



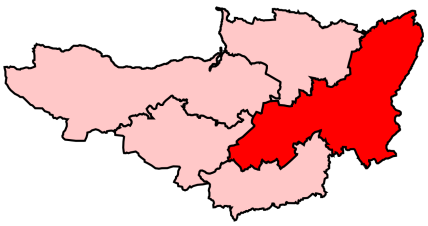
(f) Stratford-Upon-Avon



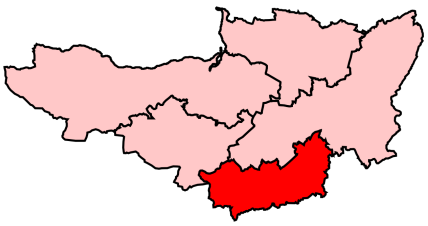
(g) Warwick and Leamington

Notes: The figure shows changes in the parliamentary constituency boundaries for the Warwickshire County by the Delimitation Commission in 1983 and 2010. As there were substantial changes to the boundaries, I combine all constituencies to create a parent unit that has consistent boundaries between the Census 1971 and 2011.
Data Source: Delimitation Commission Reports of 1974, 1983, 1997 and 2010.

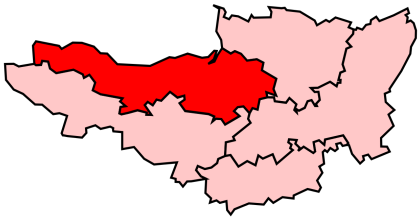
Figure A.2—Constituency Boundary Changes (Somerset County)



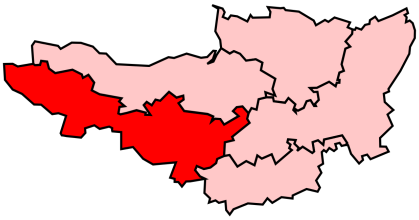
(a) Somerton and Frome



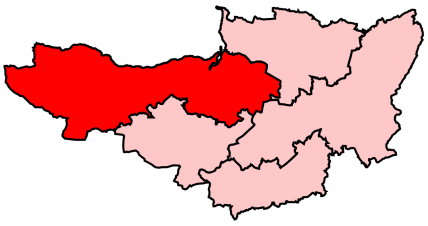
(b) Yeovil



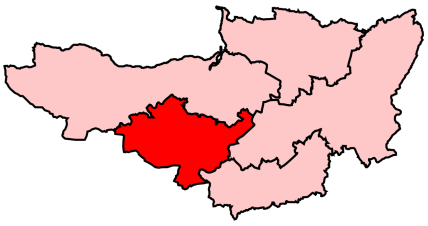
(c) Bridgwater



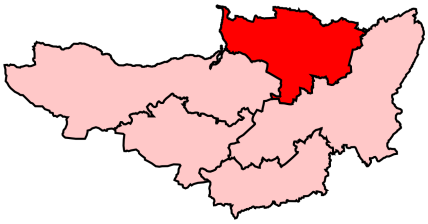
(d) Taunton



(e) Bridgwater and West Somerset



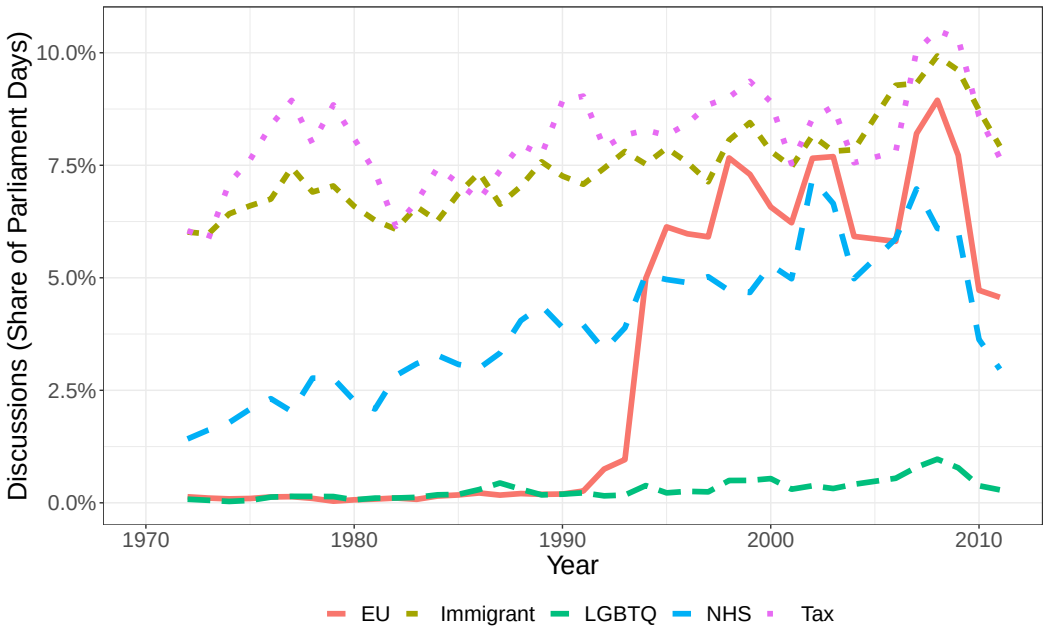
(f) Taunton Deane



(g) Wells

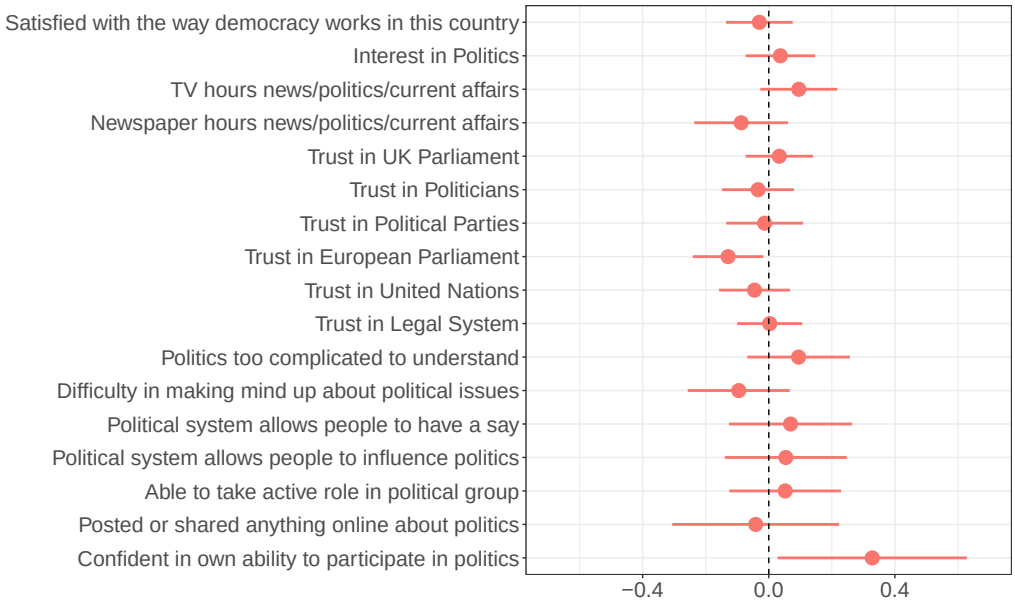
Notes: The figure shows changes in the parliamentary constituency boundaries for the Somerset County by the Delimitation Commission in 1983 and 2010. Somerton and Frome constituency (Figure [a]) was created in 1983 from Yeovil constituency (Figure [b]). I combine both to create a parent unit that is stable between Census 1971 and 2011. The 2010 Delimitation Commission altered the boundaries for Bridgwater constituency (Figure [c]) and Taunton constituency (Figure [d]) to create the Bridgwater and West Somerset constituency (Figure [e]) and Taunton Deane constituency (Figure [f]). I combine these four constituencies to create a parent unit that is stable between Census 1971 and 2011. The boundaries for Wells constituency remained most unchanged remains as a stable constituency unit.
Data Source: Delimitation Commission Reports of 1974, 1983, 1997 and 2010.

Figure A.3—Parliament debates over time



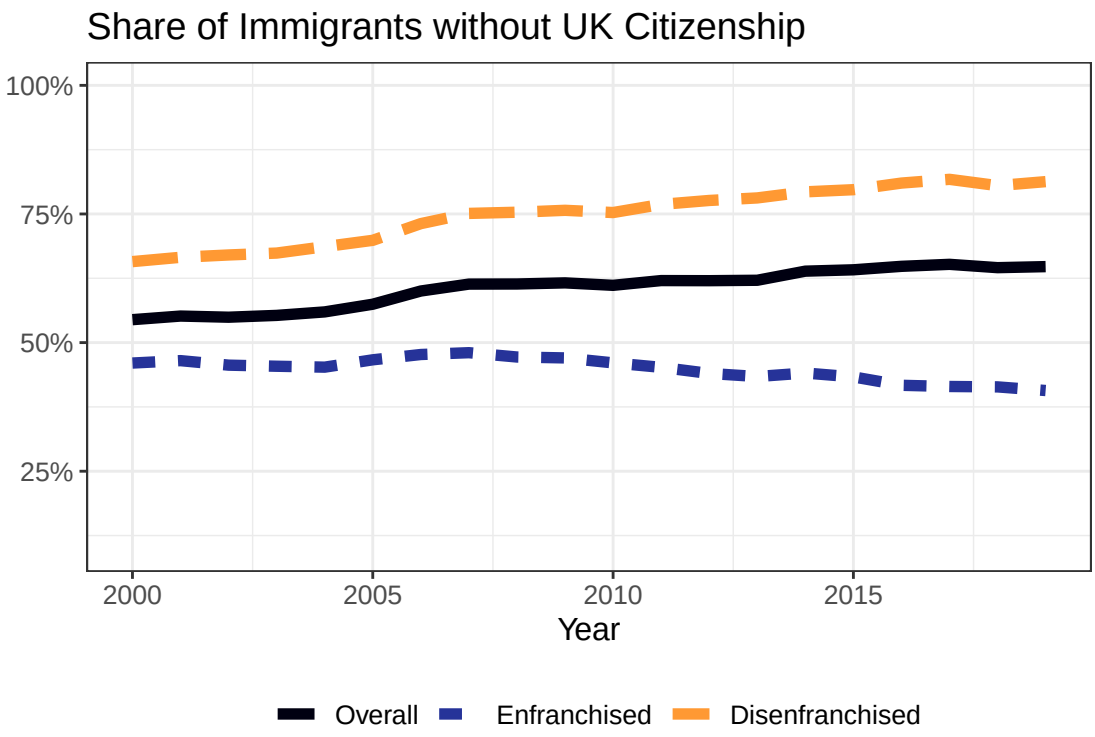
Notes: The figure plots the outcome variable "Discussions", i.e. the share of parliament days related to debates on EU, immigrants, LGBTQ, NHS and Tax.
Data Source: Text of Speech from the UK Parliament Hansard, 1972 − 2011.

Figure A.4—Political Attitudes across Immigrant groups



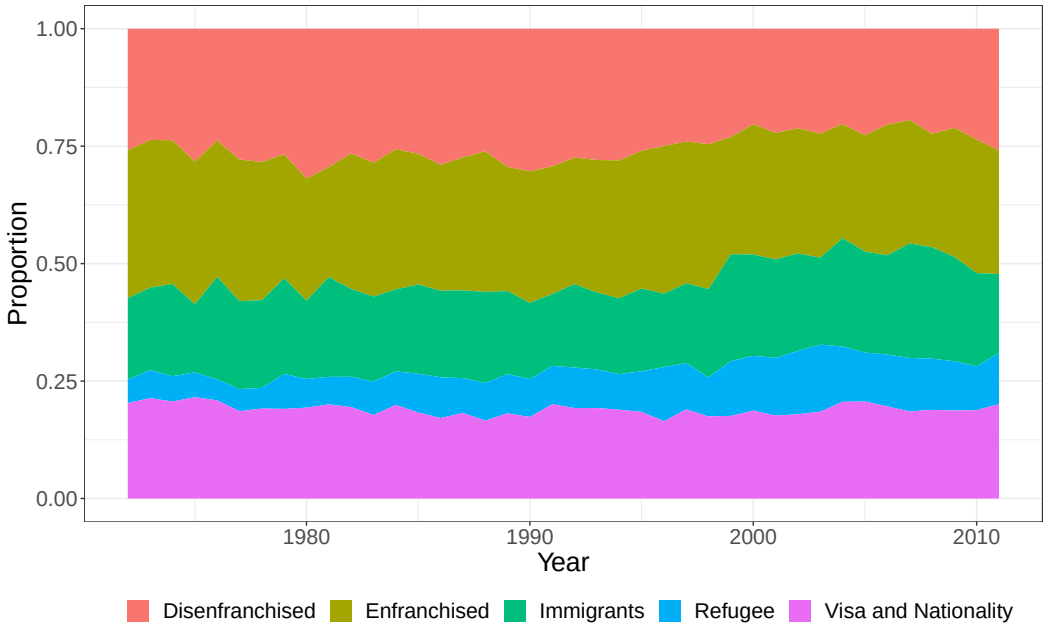
Notes: The figure plots the coefficient and 95% confidence interval on the indicator variable for an immigrant from the enfranchised group. The y-axis shows standardised outcome variables in the regression. Post-stratification and population weights are applied.
Data Source: The European Social Survey, Waves 1 to 9.

Figure A.5—Immigrant Citizenship Take-up across groups



Notes: The figure shows the share of foreign-born population who do not have UK citizenship between 2000 and 2019. The black line shows all respondents (enfranchised + disenfranchised). The blue line is for the foreign-born from the enfranchised countries and the orange line is for the disenfranchised foreign-born.
Data Source: Annual Population Survey, 2000 – 2019.

Figure A.6—Immigrant Speeches across Word Groups



Notes: The figure shows the distribution of speeches for immigrants across the word groups over the years.
Data Source: Text of Speech from the UK Parliament Hansard, 1972 − 2011.

Table A.1—Enfranchised Countries by Region

Africa	**Asia**	**Caribbean and Americas**	**Europe**	**Pacific**
Africa	Bangladesh	Antigua and Barbuda	Cyprus	Australia
Botswana	Brunei Darussalam	Bahamas, The	Malta	Fiji
Cameroon	India	Barbados	Irish Republic	Kiribati
Gambia, The	Malaysia	Belize		Nauru
Ghana	Maldives	Canada		New Zealand
Kenya	Pakistan	Dominica		Papua New Guinea
Kingdom of Eswatini	Singapore	Grenada		Samoa
Lesotho	Sri Lanka	Guyana		Solomon Islands
Malawi		Jamaica		Tonga
Mauritius		Saint Lucia		Tuvalu
Mozambique		St Kitts and Nevis		Vanuatu
Namibia		St Vincent and The Grenadines		
Nigeria		Trinidad and Tobago		
Rwanda				
Seychelles				
Sierra Leone				
South Africa				
Uganda				
United Republic of Tanzania				
Zambia				

Notes: The table provides the countries which have a right-to-vote in the UK in my analysis period. The voting rights are conditional on the membership to the Commonwealth of Nations; the membership has changed slightly over time, the details are provided in Section 1.3. Data Source: https://www.gov.uk/register-to-vote and https://thecommonwealth.org/.

Table A.2—Mapping of Census Groups across years

Census 1981	**Census 1991**	**Census 2001**	**Census 2011**
Old Commonwealth (Australia, New Zealand, Canada)	Old Commonwealth	Australia + New Zealand + Canada	Antarctica and Oceania (Australasia) + Americas and the Caribbean (Other North America)
East Africa and Africa Remainder	East Africa and Africa Remainder	Nigeria + Kenya + South Africa + Sierra Leone	Nigeria + Kenya + South Africa + Ghana
India	India	India	India
Pakistan	Pakistan	Pakistan	Pakistan
Bangladesh	Bangladesh	Bangladesh	Bangladesh
Caribbean	Caribbean	Jamaica + Other Caribbean and West Indies	Jamaica + Americas and the Caribbean (Other Caribbean)
New Other Commonwealth	New Other Commonwealth + South East Asia + Cyprus	Sri Lanka + Malaysia + Singapore + Other Far East + Cyprus	Sri Lanka + Other South East Asia + Other EU Accession Countries
Irish Republic	Irish Republic	Republic of Ireland	Europe (Ireland)
Europe	Other European Community + Other Europe	Other Western Europe + Eastern Europe - Turkey - Baltic States - USSR - Eastern Europe	France + Germany + Italy + Other EU member countries by March 2001 + Portugal + Spain +Lithuania + Poland + Romania
Rest of the World	Rest of the World	Total - UK - Commonwealth - Europe	Total - UK - Commonwealth - Europe

Notes: The table provides a mapping of the country groups in the Census 1981 with the corresponding parts in the Census 1991, 2001 and 2011.

Table A.3—Making a Stable Constituency Panel (Example: Warwickshire County)

County	Stable Constituency	Constituency	Created In	Created From	Abolished In	Replaced By
Warwickshire	Warwickshire	Aylesbury	1885		*ongoing*	
Warwickshire	Warwickshire	Warwick and Leamington	1885		*ongoing*	
Warwickshire	Warwickshire	Nuneaton	1885		*ongoing*	
Warwickshire	Warwickshire	Stratford-Upon-Avon	1950		*ongoing*	
Warwickshire	Warwickshire	Warwickshire North	1983	Nuneaton	*ongoing*	
Warwickshire	Warwickshire	Rugby and Kenilworth	1983	Rugby + Warwick and Leamington	2010	Rugby + Kenilworth and Southam
Warwickshire	Warwickshire	Rugby	2010	Rugby and Kenilworth	*ongoing*	
Warwickshire	Warwickshire	Kenilworth and Southam	2010	Rugby and Kenilworth + Warwick and Leamington Stratford-Upon-Avon	*ongoing*	

Notes: The table shows changes in the constituencies within the Warwickshire County between the Census 1971 and 2011.
Data Source: Delimitation Commission Reports: 1974, 1983, 1997 and 2010.

Table A.4—Making a Stable Constituency Panel (Example: Somerset County)

County	Stable Constituency	Constituency	Created In	Created From	Abolished In	Replaced By
Somerset	Wells	Wells	1885		*ongoing*	
Somerset	Somerset East	Yeovil	1918		*ongoing*	
Somerset	Somerset East	Somerton and Frome	1983	Yeovil	*ongoing*	
Somerset	Somerset West	Bridgwater	1885		2010	Bridgwater and West Somerset
Somerset	Somerset West	Taunton	1918		2010	Taunton Deane
Somerset	Somerset West	Taunton Deane	2010	Taunton	*ongoing*	
Somerset	Somerset West	Bridgwater and West Somerset	2010	Bridgwater + Taunton	*ongoing*	

Notes: The table shows changes in the constituencies within the Somerset County between the Census 1971 and 2011.
Data Source: Delimitation Commission Reports: 1974, 1983, 1997 and 2010.

Table A.5—Parliament Speech Mapping

Date: DD/MM/YYY				
Broad Topic	Sub Topic	Speaker	Speech	Unique Speech Identifier
ABC	abc	S1	blahblah1	S1_ABC_abc_date
ABC	abc	S2	blahblah2	S2_ABC_abc_date
ABC	abc	S3	blahblah3	S3_ABC_abc_date
ABC	abc	S1	blahblah4	S1_ABC_abc_date
ABC	abc	S2	blahblah5	S2_ABC_abc_date
XYZ	xyz	S1	blahblah6	S1_XYZ_xyz_date
XYZ	xyz	S4	blahblah7	S4_XYZ_xyz_date
XYZ	xyz	S1	blahblah8	S1_XYZ_xyz_date
XYZ	def	S2	blahblah9	S2_XYZ_def_date
XYZ	def	S5	blahblah10	S5_XYZ_def_date

Notes: This table takes a dummy example to illustrate how a single speech for each MP is identified using parliament deliberations. On a given day, MPs deliberate on various topics. The raw data provides information on Broad Topic and Sub Topic. Multiple speeches of a single MP under a broad topic and sub topic are collapsed into a single speech with a unique identifier.

Table A.6—Examples of Hansard Parliament Data

8th June 1976 > Standards of Literacy and Numeracy by Pupils
Mr Skeet (Conservative) −"*...In Bedford we have a very large immigrant population. I pay tribute to the work of the local education authority, which has done a remarkable job in ensuring that the children are ready to receive education. It does so by giving them special language courses...*"
28th June 1982 > Immigration Regulations
Mr Ivor Stanbrook (Conservative) − "*... we all know that the immigrant community is already so large and gives us so many problems of social friction and racial tension ... that is why we do not want to increase the number of immigrants coming in. That is why we all talk in terms of a strict control over immigration...*"
21st February 1996 > Asylum & Immigration Bill > Restrictions on Employment
Mr Jacques Arnold − "*...Is my hon. Friend aware that the clause is extremely welcome in my Sikh community in Gravesend? For far too many years, my law-abiding Sikh constituents who work in the construction trade and in market gardening have been fed up with their wage rates being undercut by illegal immigrants...*"
15th July 1996 > Asylum & Immigration Bill
Mr Peter Lilley − "*The procedures for claiming asylum were set up to help the small number of people who escape tyrannous regimes, but the rules have been exploited by more and more economic migrants using them to circumvent immigration controls ... The easy availability of social security benefits has been exploited by an ever-rising number of asylum seekers−more than 90 per cent of whom turn out not to be genuine.*"
7th December 2000 > Health and Social Security
Ms Harriet Harman − "*...the immigrants from the different African countries who come to Peckham believe in work. For them, it is a matter of principle − morality, almost − that they work in the community that they have joined .... The stereotype is that immigrants are scroungers, leeching off the welfare state, yet the truth is that much of our welfare state in south London would simply not function without the new African immigrants.*"
16th July 2001 > Punjabi Community
Ms Angela Eagle (Labour) − "*...The Government welcome the positive contributions made by the Hindu, Muslim and Sikh members of the Punjabi community in Britain, and we all share the vision of a society free from prejudice in which differences between religions and ethnic communities are not only respected and valued, but celebrated and promoted...*"
1st November 2010 > Home Department > Immigration System
Mr Mark Spencer (Conservative) − "*The Minister will be aware that companies such as Rolls-Royce, in my constituency, require highly skilled staff from outside the EU. What can be done to ensure that those companies have access to those highly skilled staff while also ensuring that the immigrants coming in have the right skills?*"

Notes: This table provides some snippets of the UK parliament speeches. Each speech contains a date, broad topic and/or the sub topic, and name of the speaker. The party affiliation of the speaker has been added in the brackets. The words capturing the speeches for immigrants and constituency are highlighted in grey colour.

Table A.7—Keywords used to extract Parliament Speeches

Grouping of Words					
Immigrants	Visa and Nationality	Enfranchised Countries	Disenfranchised Countries	Refugees	Constituency
immigrant*	ancestry	commonwealth	EU citizen*	asylum	constituen*
foreigner*	citizen*	windrush	polish*	refugee*	my electorate*
alien*	nationalit*	bangladesh*	bulgaria*	deport*	precint*
migra*	naturalis*	pakistan*	romania*	repatriat*	my county
legal entrant	freedom of movement	india*	france*	exile*	my voter*
illegal entrant	free movement of people	nigeria*	french*	detention*	my citizenry
minorit*	language test	kenya*	german*	extradit*	my district*
gypsy	points of entry	south africa*	ital*		my ward*
traveller	UK border	jamaica*	spain*		my resident*
ethnic*	work permit	uganda*	portugal*		local authorit*
race*	single entry	malta*	holland*		where i was born
racial*	multiple entry	cyprus*	netherland*		where i live
	visa	australia*	sweden*		where i grew up
		new zealand*	finland*		
		canada*	greece*		
		ireland*	turkish*		
		irish*	turkey*		
		hindu*	america*		
		sikh*	china		
		temple*	chinese		
		priest*			

Notes: This table provides a detailed glossary of all words used to extract immigrant speeches using words commonly used in the literature to extract parliament questions about immigrants (Saalfeld, 2011; Geese et al., 2015; Slapin and Kirkland, 2020). The words are grouped under broad headers such as Immigrants, Visa & Nationality, Enfranchised countries, Disenfranchised countries and Refugees. The words used to refer to individual constituency is in the last column.

Table A.8—Immigration Bills in the UK Parliament

Bill/Act	Summary	Specific Nationalities
Immigration Bill (Act 1971)	immigration control extended to all nationalities and right of abode retained for UK citizens and some Commonwealth citizens	Commonwealth countries, colonies and former colonies
Race Relations Act 1976	(a) improved definition of racial discrimination; (b) creation of the Commission for Racial Equality	N/A
British Nationality Act 1981	no automatic citizenship by birth on British soil anymore	N/A
British Nationality Act 1981	transition period for naturalisation of specific nationalities	Commonwealth countries, colonies and former colonies
Immigration (Carriers' Liability) Bill (Act 1987)	Carriers made responsible for checking documentation of traveller	N/A
Immigration Bill (Act 1988)	stricter requirements for family reunification of commonwealth citizens	Commonwealth countries, colonies and former colonies
Immigration Bill (Act 1988)	makes overstaying an offence and reintroduction of probationary year for relatives of UK citizens	N/A
Immigration Bill (Act 1988)	EU nationals need no leave to enter and remain anymore	EU Member states at that time
Asylum And Immigration Appeals Bill (Act 1993)	(a) UK asylum definition adjusted to Geneva Convention (b) reduction of benefit entitlements for asylum seekers; (c) fingerprinting of asylum applicants introduced; (d) fast track appeal procedures and time limits introduced; (e) detention of asylum seekers	N/A
Asylum And Immigration Bill (Act 1996)	(a) extension of penalties for illegal entry to those seeking leave to enter; (b) reduction of benefit entitlements for certain asylum seekers; (c) introduction of employer sanctions; (d) extended rights for searching and arresting immigration offenders	N/A

Table A.9—Immigration Bills in the UK Parliament (continued)

Bill/Act	Summary	Specific Nationalities
Immigration And Asylum Bill (Act 1999)	(a) new welfare support system for asylum seekers; (b) more detention powers and capacities; (c) carrier sanctions extended to private vehicles; (d) more staff abroad to curb number of forged travel IDs used; (e) immigration for marriage restricted	N/A
Nationality, Immigration And Asylum Bill (Act 2002)	(a) creation of induction, accommodation and removal centres for asylum seekers; (b) more technology and border control, especially towards France; (c) introduction of citizenship test and ceremony (implemented in 2005); (d) expulsion of rejected asylum seekers from safe countries possible; (e) detention of asylum seekers extended	N/A
Asylum And Immigration (Treatment Of Claimants, Etc) Bill (Act 2004)	(a) employer sanctions increased; (b) increased technology to trace asylum seekers; (c) sanctions for entering on invalid travel documents; (d) refugee support limited; (e) merger of appeal bodies and creation of asylum and immigration tribunal	N/A
Criminal Justice and Immigration Act 2008	(a) immigration officers given detention, search and seizure power; (b) compulsory biometric identity documents (implemented in 2008); (c) automatic deportation of certain foreign criminals; (d) higher residency conditions for immigrants with limited leave to remain	N/A
Borders, Citizenship and Immigration Act 2009	(a) new requirements for students to be sponsored; (b) fingerprinting of foreign criminals allowed; (c) introduction of probationary citizenship period before naturalisation; (d) access to benefits restricted during probationary citizenship	N/A

Notes: The table provides a list of all acts discussed in the UK parliament related to immigration during my time-period of study along with a short description of bills including a one line summary and target groups (including specific nationalities).

Table A.10—Mapping: Parliament Period, General Elections and Census Data

Date: From	Date: To	Parliament	General Election Year	Census Year
1972-01-01	1974-02-27	45th	1970	1981
1974-02-28	1974-10-09	46th	Feb 1974	1981
1974-10-10	1979-05-02	47th	Oct 1974	1981
1979-05-03	1981-12-31	48th	1979	1981
1982-01-01	1983-06-08	48th	1979	1991
1983-06-09	1987-06-10	49th	1983	1991
1987-06-11	1991-12-31	50th	1987	1991
1992-01-01	1992-04-08	50th	1987	2001
1992-04-09	1997-04-30	51st	1992	2001
1997-05-01	2001-06-06	52nd	1997	2001
2001-06-07	2001-12-31	53rd	2001	2001
2002-01-01	2005-05-04	53rd	2001	2011
2005-05-05	2010-05-05	54th	2005	2011
2010-05-06	2011-12-31	55th	2010	2011

Notes: The table provides a mapping of the parliament dates to the general election years and the census years.

Table A.11—First Stage Results

	Immigration	
	(1) Enfranchised	(2) Disenfranchised
Z Enfranchised Immigration	0.819***	0.638***
	(0.125)	(0.168)
Z Disenfranchised Immigration	-0.288***	0.338***
	(0.089)	(0.119)
Sanderson-Windmeijer F statistic	47.17	51.34
Kleibergen-Paap rk Wald F statistic	21.73	
Kleibergen-Paap rk LM statistic p-value	0.0017	
Stock-Yogo (2005) critical value at 10%	7.03	
Stock-Yogo (2005) critical value at 15%	4.58	
Region FE	Yes	Yes
Year FE	Yes	Yes
# Clusters	192	192
Observations	5760	5760

Notes: The table provides the relationship between the fraction of immigrants and the instrument, for enfranchised and disenfranchised groups from two separate first-stage regressions.

Table A.12—Robustness to missing valence scores

	Δ Discussions			Δ Valence		
	(1) OLS	(2) 2SLS	(3) 2SLS	(4) OLS	(5) 2SLS	(6) 2SLS
Enfranchised Immigration	0.004	0.013**	0.013**	0.072**	0.246***	0.198***
	(0.003)	(0.006)	(0.006)	(0.035)	(0.069)	(0.062)
Disenfranchised Immigration	-0.002	-0.015**	-0.022***	-0.077*	-0.235**	-0.215**
	(0.003)	(0.006)	(0.008)	(0.046)	(0.092)	(0.101)
Mean DV (in levels)	0.078	0.078	0.078			
KP F Stat		21.73	27.31		21.73	27.31
F Stat (Enf)		47.17	56.31		47.17	56.31
F Stat (DisEnf)		51.34	57.47		51.34	57.47
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls			Yes			Yes
Observations	5760	5760	5760	5760	5760	5760

Notes: This table presents the robustness of Table 1.2 Columns 4, 5 and 6 by imputing the valence scores from the last available speech. The valence scores are missing because not all MPs speak about immigrants every year.

Table A.13—Robustness to Individual Controls

	(1) Main Result	(2) Ethnic-Minority MP	(3) MP Party Ideology	(4) Party Vote Shares	(5) Immigrant Stocks	(6) Observable Characteristics
Panel A: Δ Discussions						
Enfranchised Immigration	0.013**	0.012**	0.013**	0.012**	0.013**	0.013**
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Disenfranchised Immigration	-0.015**	-0.015**	-0.015**	-0.015**	-0.020***	-0.016**
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)
Mean DV (in levels)	0.078	0.078	0.078	0.078	0.078	0.078
KP F Stat	21.73	22.01	23.65	24.19	20.48	23.23
F Stat (Enf)	47.17	49.58	50.18	50.34	47.1	50.46
F Stat (DisEnf)	51.34	51.97	57.98	66.61	46.43	49.8
Observations	5760	5760	5760	5760	5760	5760
Panel B: Δ Valence						
Enfranchised Immigration	0.233***	0.229***	0.218***	0.209***	0.237***	0.224***
	(0.077)	(0.075)	(0.072)	(0.074)	(0.077)	(0.077)
Disenfranchised Immigration	-0.230**	-0.235***	-0.229***	-0.229***	-0.252**	-0.202**
	(0.090)	(0.090)	(0.088)	(0.086)	(0.097)	(0.100)
KP F Stat	22.44	23	23.92	23	22.06	26.63
F Stat (Enf)	43.27	45.8	47.52	47.74	43.28	47.8
F Stat (DisEnf)	60.82	61.47	69.43	81.84	56.1	60.81
Observations	5091	5091	5091	5091	5091	5091
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table shows the robustness of the results in the Table 1.2 by introducing the control variables one at a time. Table 1.2 Column 3 is presented in Panel A and Column 6 is presented in Panel B.

Table A.14—Robustness to Selection of Parliament Speeches

	(1) Main Result	(2) (1) - Words of Ethnicity, Race and Refugees	(3) (1) - Words for Future Immigrants	(4) Words of Enfranchised Countries	(5) Words of Disenfranchised Countries
Panel A: Δ Discussions					
Enfranchised Immigration	0.013**	0.012**	0.012**	0.009**	0.003
	(0.006)	(0.006)	(0.005)	(0.004)	(0.002)
Disenfranchised Immigration	-0.015**	-0.013**	-0.013**	-0.011**	-0.002
	(0.006)	(0.006)	(0.006)	(0.005)	(0.002)
Mean DV (in levels)	0.078	0.072	0.068	0.033	0.034
KP F Stat	21.73	21.73	21.73	21.73	21.73
F Stat (Enf)	47.17	47.17	47.17	47.17	47.17
F Stat (DisEnf)	51.34	51.34	51.34	51.34	51.34
Observations	5760	5760	5760	5760	5760
Panel B: Δ Valence					
Enfranchised Immigration	0.233***	0.236***	0.213**	0.189***	0.147*
	(0.077)	(0.083)	(0.083)	(0.072)	(0.078)
Disenfranchised Immigration	-0.230**	-0.249**	-0.210**	-0.165*	-0.144**
	(0.090)	(0.097)	(0.088)	(0.089)	(0.069)
KP F Stat	22.44	22	20.65	18.89	18.17
F Stat (Enf)	43.27	42.09	38.96	34.45	33.83
F Stat (DisEnf)	60.82	63.1	67.83	116.34	86.92
Observations	5091	5019	4955	3772	4179
Year FE	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes

Notes: The table shows the robustness of the main results to the selection of speeches about immigrants in the Hansard.

Table A.15—Dropping Australia, New Zealand, Canada and Ireland

	Immigrants Speeches		Immigration Bills
	Δ Discussions	Δ Valence	Δ Amend Anti
	(1)	(2)	(3)
Enfranchised Immigration	0.013**	0.250***	0.089*
	(0.006)	(0.080)	(0.048)
Disenfranchised Immigration	-0.016**	-0.246***	-0.164**
	(0.007)	(0.091)	(0.074)
Mean DV	0.078		0.459
KP F Stat	19.08	19.83	18.69
F Stat (Enf)	41.31	38.51	40.74
F Stat (DisEnf)	45.3	52.39	44.23
Region FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	5760	5091	5500

Notes: This table shows the robustness of the main results to the exclusion of immigrants from Australia, New Zealand, Canada and Ireland from the enfranchised immigration.

Table A.16—Effect on Turnout and Party Affiliation of MP

	Δ Share Native Population	Δ Turnout	Δ MP from Party			
			Labour	Conservative	LibDem + Plaid Cymru	Populist + Green + Independent
	(1)	(2)	(3)	(4)	(5)	(6)
Enfranchised Immigration	-0.008	-0.009**	0.005	0.022	-0.028	0.002
	(0.005)	(0.004)	(0.023)	(0.020)	(0.020)	(0.004)
Disenfranchised Immigration	0.008	0.011**	0.023	-0.045**	0.025	-0.003
	(0.006)	(0.004)	(0.024)	(0.022)	(0.026)	(0.005)
Mean DV (in levels)	0.987	0.699	0.466	0.461	0.070	0.002
KP F Stat	21.73	21.73	21.73	21.73	21.73	21.73
F Stat (Enf)	47.17	47.17	47.17	47.17	47.17	47.17
F Stat (DisEnf)	51.34	51.34	51.34	51.34	51.34	51.34
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5760	5760	5760	5760	5760	5760

Notes: This table presents the 2SLS estimates of the enfranchised and the disenfranchised immigration on the changes in the share of native population (Column 1), overall turnout (Column 2) and measures of the member of parliament of the constituencies coming from the Labour party (Column 3), the Conservative party (Column 4), regional parties (Column 5) and other parties (Column 6). As constituencies have been aggregated to their parent units by a weighted average of the electorate size, the party affiliation in Columns 3 to 6 are not a dummy variable.

Table A.17—Effect on Descriptive Representation

	Δ Descriptive Representation		
	(1) Both	(2) Enfranchised	(3) Disenfranchised
Enfranchised Immigration	0.051***	0.045***	0.006
	(0.018)	(0.017)	(0.006)
Disenfranchised Immigration	0.015	0.024	-0.009
	(0.021)	(0.016)	(0.013)
Mean DV (in levels)	0.030	0.018	0.011
KP F Stat	21.74	21.74	21.74
F Stat (Enf)	48.29	48.29	48.29
F Stat (DisEnf)	51.98	51.98	51.98
Region FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	5376	5376	5376

Notes: This table presents the 2SLS estimates of the enfranchised and the disenfranchised immigration on the descriptive representation of ethnic-minority MPs in the parliament (Columns 1 to 3). Column 1 is split up between ethnic-minority MPs from the enfranchised group of countries (Column 2) and the disenfranchised group of countries (Column 3).

Table A.18—Heterogeneity by Ethnic-Minority MP

	Immigrants Speeches				Immigration Bills	
	Δ Discussions		Δ Valence		Δ Amend Anti	
	(1)	(2)	(3)	(4)	(5)	(6)
Enfranchised Immigration	0.013**	0.015***	0.233***	0.257***	0.093**	0.078
	(0.006)	(0.006)	(0.077)	(0.076)	(0.047)	(0.047)
Disenfranchised Immigration	-0.015**	-0.014**	-0.230**	-0.225**	-0.163**	-0.171**
	(0.006)	(0.006)	(0.090)	(0.090)	(0.073)	(0.073)
Enfranchised Immigration × Ethnic-Minority MP		-0.019**		-0.172		0.060
		(0.007)		(0.164)		(0.068)
Ethnic-Minority MP		0.019**		0.164		0.102
		(0.009)		(0.206)		(0.128)
Mean DV	0.078	0.078			0.459	0.459
KP F Stat	21.73	14.47	22.44	14.9	21.47	14.34
F Stat (Enf)	47.17	43.49	43.27	42.01	47.09	43.58
F Stat (DisEnf)	51.34	53.83	60.82	69.12	50.29	52.82
F Stat (... × Ethnic-Minority MP)		390.61		322.01		392.28
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5760	5760	5091	5091	5500	5500

Notes: This table shows heterogeneity of Enfranchised Immigration by presence of ethnic-minority MP in that constituency. As constituencies have been aggregated to their parent units by a weighted average of the electorate size, the ethnic-minority MP is not a dummy variable.

Table A.19—Attitude of Immigrants towards Immigration

	EU Unification should go further	Allow more immigrants in the UK from		
		Poor Countries outside Europe	Same Race Ethnicity as the majority	Different Race Ethnicity than the majority
	(1)	(2)	(3)	(4)
1 I(Enfranchised Immigrant)	0.289***	0.421***	0.364***	0.406***
	(0.091)	(0.069)	(0.066)	(0.071)
2 I(Enfranchised Immigrant) × I(UK Citizenship)	-0.074	-0.119	-0.171**	-0.121
	(0.102)	(0.080)	(0.076)	(0.080)
3 I(Disenfranchised Immigrant)	0.637***	0.384***	0.395***	0.387***
	(0.072)	(0.053)	(0.056)	(0.058)
4 I(Disenfranchised Immigrant) × I(UK Citizenship)	-0.347***	-0.106	-0.185**	-0.127*
	(0.099)	(0.076)	(0.079)	(0.077)
Region FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes
p-value: Coefficient 1 = 3	0.002	0.723	0.809	0.700
p-value: Coefficient 1 + 2 = 3 + 4	0.378	0.656	0.708	0.830
Observations	12193	17034	17034	17034

Notes: The table presents the attitude of immigrants in the UK towards future immigration using the full dataset to compare enfranchised and disenfranchised immigrants with the native responses. The number of observations in Column 1 is smaller because this question was not asked in the initial rounds of the European Social Survey.

Table A.20—Heterogeneity by Win Margin

	Immigrants Speeches				Immigration Bills	
	Δ Discussions		Δ Valence		Δ Amend Anti	
	(1)	(2)	(3)	(4)	(5)	(6)
Enfranchised Immigration	0.013**	0.003	0.233***	0.092	0.093**	-0.007
	(0.006)	(0.007)	(0.077)	(0.098)	(0.047)	(0.051)
Disenfranchised Immigration	-0.015**	-0.012*	-0.230**	-0.159**	-0.163**	-0.115**
	(0.006)	(0.006)	(0.090)	(0.070)	(0.073)	(0.057)
Enfranchised Immigration × Win Margin		0.038		0.439		0.345*
		(0.027)		(0.307)		(0.179)
Win Margin		0.034**		1.432***		0.714***
		(0.017)		(0.269)		(0.109)
Mean DV	0.078	0.078			0.459	0.459
KP F Stat	21.73	15.75	22.44	14.81	21.47	15.64
F Stat (Enf)	47.17	98.28	43.27	95.18	47.09	96.76
F Stat (DisEnf)	51.34	105.27	60.82	139.72	50.29	106.27
F Stat (... × Win Margin)		61.84		56.82		60.11
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5760	5760	5091	5091	5500	5500

Notes: This table shows heterogeneity of Enfranchised Immigration by the win margin in the constituency.

Table A.21—Differences across constituencies by Labour vote share

	Immigrants Speeches				Immigration Bills	
	Δ Discussions		Δ Valence		Δ Amend Anti	
	(1)	(2)	(3)	(4)	(5)	(6)
Enfranchised Immigration	0.013**	-0.016	0.233***	-0.283*	0.093**	-0.385***
	(0.006)	(0.013)	(0.077)	(0.170)	(0.047)	(0.106)
Disenfranchised Immigration	-0.015**	-0.013**	-0.230**	-0.202***	-0.163**	-0.126**
	(0.006)	(0.006)	(0.090)	(0.069)	(0.073)	(0.063)
Enfranchised Immigration × Vote Share Labour		0.054**		0.923***		0.977***
		(0.026)		(0.324)		(0.234)
Vote Share Labour		0.012		0.686***		-0.679***
		(0.015)		(0.224)		(0.140)
Mean DV	0.078	0.078			0.459	0.459
KP F Stat	21.73	25.01	22.44	24.84	21.47	25.31
F Stat (Enf)	47.17	115.79	43.27	106.81	47.09	113.49
F Stat (DisEnf)	51.34	91.47	60.82	93.98	50.29	91.40
F Stat (... × Vote Share Labour)		86.97		77.66		84.69
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5760	5760	5091	5091	5500	5500

Notes: This table shows heterogeneity of Enfranchised Immigration by vote share for labour party.

Table A.22—Differences across constituencies by Conservative vote share

	Immigrants Speeches				Immigration Bills	
	Δ Discussions		Δ Valence		Δ Amend Anti	
	(1)	(2)	(3)	(4)	(5)	(6)
Enfranchised Immigration	0.013**	0.025**	0.233***	0.464***	0.093**	0.585***
	(0.006)	(0.012)	(0.077)	(0.150)	(0.047)	(0.124)
Disenfranchised Immigration	-0.015**	-0.014**	-0.230**	-0.228***	-0.163**	-0.147**
	(0.006)	(0.006)	(0.090)	(0.080)	(0.073)	(0.062)
Enfranchised Immigration ×		-0.051		-0.970**		-1.891***
Vote Share Conservative		(0.034)		(0.403)		(0.326)
Vote Share Conservative		-0.003		-0.560*		0.507**
		(0.021)		(0.328)		(0.241)
Mean DV	0.078	0.078			0.459	0.459
KP F Stat	21.73	11.75	22.44	8.13	21.47	10.95
F Stat (Enf)	47.17	41.34	43.27	33.91	47.09	40.43
F Stat (DisEnf)	51.34	102.49	60.82	124.09	50.29	101.91
F Stat (... × Vote Share Conservative)		65.53		58.21		66.09
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5760	5760	5091	5091	5500	5500

Notes: This table shows heterogeneity of Enfranchised Immigration by vote share for conservative party.

Table A.23—Political Engagement of Immigrants (Individual Options)

	I(Public Protest) (1)	I(Campaign Badge) (2)	I(Worked in Organization) (3)	I(Contacted Politician) (4)	I(Boycotted Products) (5)
I(Enfranchised Immigrant)	0.000	0.014	0.018	0.021	0.004
	(0.012)	(0.014)	(0.016)	(0.018)	(0.020)
Mean DV	0.050	0.072	0.081	0.138	0.175
Region FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes	Yes
Observations	1850	1852	1853	1852	1848

Notes: This table presents differences in the political engagement between the enfranchised and disenfranchised group of immigrants for the individual options clubbed together in one index (Table 1.6, Columns 4).

Table A.24—Survey Evidence on Voting across Immigrants and Natives

	I(Vote)	I(Vote Party)			
		Labour	Conservative	Populist + Green + Independent	LibDem + Plaid Cymru
	(1)	(2)	(3)	(4)	(5)
1 I(Enfranchised Immigrant)	-0.229***	0.264***	-0.223***	-0.013	-0.027
	(0.041)	(0.049)	(0.034)	(0.015)	(0.038)
2 I(Enfranchised Immigrant) × I(UK Citizenship)	0.253***	-0.003	0.051	-0.008	-0.040
	(0.045)	(0.053)	(0.039)	(0.017)	(0.041)
3 I(Disenfranchised Immigrant)					
4 I(Disenfranchised Immigrant) × I(UK Citizenship)	-0.143***	0.115***	-0.055	-0.009	-0.050**
	(0.031)	(0.039)	(0.036)	(0.014)	(0.025)
Mean DV (UK Natives)	0.746	0.365	0.355	0.105	0.174
Region FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Individual Controls	Yes	Yes	Yes	Yes	Yes
Observations	16460	11352	11352	11352	11352
p-value: Coefficient 1 + 2 = 4	0.000	0.001	0.003	0.440	0.552

Notes: This table presents the survey evidence on respondents voting in the last general election comparing the enfranchised and disenfranchised immigrants with the natives. Among the respondents who voted, there is additional information on which party did the respondents voted: labour party (Column 2), conservative party (Column 3), regional parties (Column 4) and the other parties (Column 5).

Table A.25—Heterogeneity by Democracy Index of Immigration

	Immigrants Speeches				Immigration Bills	
	Δ Discussions		Δ Valence		Δ Amend Anti	
	(1)	(2)	(3)	(4)	(5)	(6)
Enfranchised Immigration	0.013**	0.007	0.233***	0.147*	0.093**	0.093*
	(0.006)	(0.005)	(0.077)	(0.078)	(0.047)	(0.047)
Disenfranchised Immigration	-0.015**	-0.016**	-0.230**	-0.245**	-0.163**	-0.174**
	(0.006)	(0.006)	(0.090)	(0.097)	(0.073)	(0.076)
Enfranchised Immigration ×		0.012**		0.159**		0.039
I(Democracy Index > Median)		(0.005)		(0.066)		(0.042)
I(Democracy Index > Median)		-0.002		-0.054		0.079**
		(0.004)		(0.061)		(0.039)
Mean DV	0.078	0.078			0.459	0.459
KP F Stat	21.73	10.27	22.44	8.99	21.47	10.24
F Stat (Enf)	47.17	54.87	43.27	61.66	47.09	55.1
F Stat (DisEnf)	51.34	46.49	60.82	55.6	50.29	48.03
F Stat (... × Democracy Index)		49.49		48.06		49.48
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5760	5760	5091	5091	5500	5500

Notes: This table shows heterogeneity of Enfranchised Immigration by the democracy index of the immigrants. The democracy index is computed as a sum of political rights score and civil rights score available annually for each country from Freedom House. The democracy index for the constituency is computed as a weighted average of the size of immigrants from each country group in the constituency.

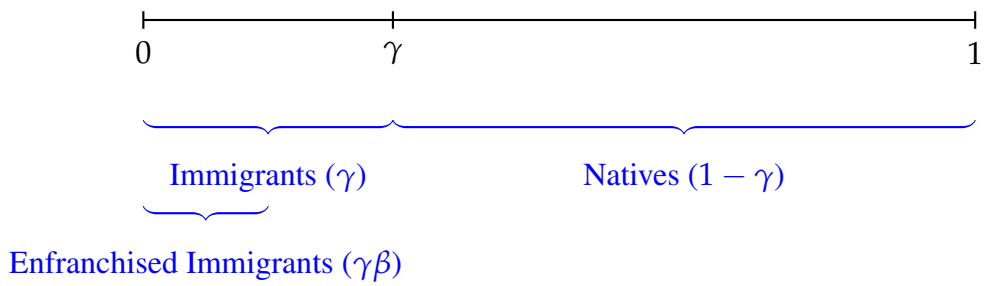
1.9 Appendix: Model

In this section, I present a model to theorize the incumbent's decision to help the enfranchised immigrants in their constituency. The model takes inspiration from the political agency models of Besley (2006), and in particular, Besley and Burgess (2002) and has been developed within the specific context of my study (UK Parliament, single-member plurality voting, and immigrant's enfranchisement). The aim is to understand underlying conditions in which the incumbent assists the minority group and the role played by electoral competition and party ideology.

Setup

Consider a continuum of people of size one and a two-period scenario. There are two types of people− natives and immigrants. The immigrants are a minority group, their share among the population is γ (assuming $\gamma < 1/2$), and a β fraction of immigrants are enfranchised. In this two-period scenario, I do not consider disenfranchised immigrants applying for host country citizenship and thus acquiring voting rights. An extension of the model with multiple periods will allow for this and has not been considered here.

Figure A.7—Model Setup



At the start of period 1, the voters have voted for an incumbent to the office. All types of people use socio-political actions to express their preferences to the politicians. I define the socio-political actions broadly as people's engagement with the state by signing petitions, contacting politicians, participating in protests, boycotting products, etc. Some examples of immigrants' preferences are increasing welfare spending on education, healthcare, unemployment insurance, descriptive representation etc. The natives may or may not have similar preferences to immigrants. Let $\phi \in [0, 1]$ be a measure of preference mis-alignment between immigrants and natives; where $\phi = 0$ measures full alignment and $\phi = 1$ measures complete mis-alignment. For example, the immigrants

may demand restricting future immigration and if the natives have similar preferences then $\phi = 1$.

Trade-offs

In my context, the first-past-the-post voting system implies that the incumbent always helps the natives (majority) with their demands. But a decision has to be made to help the minority immigrant voters or not. A fraction (α) of the native population dislike immigrants and consider them an economical and cultural threat. Let α be a convex function in γ, i.e. the electoral costs are only marginal when the enfranchised immigrant population is low and becomes very high beyond a threshold.

The incumbent has to decide to put effort ($e \in [0, E]$), measured in units of (dis)utility to help the enfranchised immigrants. Let $p(e)$ be the fraction of eligible voters who are informed about the incumbents effort, where $p(0) = 0$, $p_e(e) > 0$, and $p_{ee}(e) < 0$. Consequently, the likelihood that the voters learn about incumbents effort increases in the effort. I assume the information on effort [p(e)] is similar for both immigrants and natives as the incumbent makes public speeches in the parliament about immigrants. At the end of period 1, there is an election in which the incumbent faces a randomly selected challenger. Before the election, all voters know about the effort level of the incumbent.

Voting Environment

All enfranchised immigrants vote for the incumbent if they learn about the incumbent's effort; otherwise, they vote for the challenger. The vote share received by the incumbent from the enfranchised immigrants are $\gamma \times \beta \times p(e)$. Disenfranchised immigrants do not participate in the election. Let v be the fraction of natives who vote on ideological grounds independent of immigration. It is uniformly distributed on the interval $[a,\ 2b - a]$, where $1 > b > a \geq 2b - 1$. The parameter b is the expected level of support for the incumbent, and a measures the size of noise in voting $-$ the expected (ideological) votes for the incumbent increases with b.

The natives who dislike immigrants vote against the incumbent, given the effort level. The native's votes lost in the process of helping the enfranchised immigrants are $(1 - \gamma) \times \alpha \times \phi \times p(e)$. Suppose there is perfect alignment in preferences between immigrants and natives. In that case, there are no electoral costs of helping immigrants, and the incumbent only gains in helping the immigrants.

Decision on Effort

The incumbent wins the election if

$$(\gamma\beta - \alpha(1-\gamma)\phi)p(e) + (1-\gamma)v > \frac{1-\gamma+\gamma\beta}{2}$$

For a given b, the probability that the incumbent puts effort e can be computed as

$$P(e; b, \gamma, \beta, \alpha) = \tag{1.4}$$

$$\begin{cases} 1 & \text{if } (\gamma\beta - \alpha(1-\gamma)\phi)p(e) > \frac{1-\gamma+\gamma\beta}{2} - (1-\gamma)a \\ \dfrac{(2b - a - \frac{(1-\gamma+\gamma\beta)/2 - (\gamma\beta - \alpha(1-\gamma)\phi)p(e)}{1-\gamma})}{2(b-a)} & \text{if } (\gamma\beta - \alpha(1-\gamma)\phi)p(e) \in \\ & [\frac{1-\gamma+\gamma\beta}{2} - (1-\gamma)(2b-a), \frac{1-\gamma+\gamma\beta}{2} - (1-\gamma)a] \\ 0 & \text{if } (\gamma\beta - \alpha(1-\gamma)\phi)p(e) < \frac{1-\gamma+\gamma\beta}{2} - (1-\gamma)(2b-a) \end{cases}$$

The politicians care about re-election; let Ω be the utility from holding office. An incumbent chooses the effort level to solve

$$\max_e P(e; b, \gamma, \beta, \alpha)\Omega - e \tag{1.5}$$

The equation (1.4) suggests the incumbent will win for sure if a is large enough, and the incumbent will lose for sure if b is sufficiently small relative to a. Therefore, the noise in voting is a pre-condition for there being an interior solution for the effort level. The first-order condition for the optimal effort level, e^* (assuming an interior solution), is

$$\frac{(\gamma\beta - \alpha(1-\gamma)\phi)p^{'}(e^*)\Omega}{2(b-a)(1-\gamma)} = 1 \tag{1.6}$$

Proposition: The effort from an incumbent is higher if there:
(a) ... is a higher fraction of enfranchisement among immigrants (high β).
(b) ... is a lower dislike for immigrants among natives (low α).
(c) ... is a higher complementarity in preferences (low ϕ).

Proof: Substituting equation (1.4) into (1.5) and deriving the first-order condition yields

equation (1.6). The derivation of the comparative statistics follow from the definition of the function $(p^{'})^{-1}(.)$, i.e. $p_e(e) > 0$, and $p_{ee}(e) < 0$. QED

Discussion

This simple political agency model gives us micro-foundations for politicians' behaviour toward enfranchised immigrants. A simple trade-off suggests that if the benefits are higher than the costs, the incumbents should address immigrants concerns. When immigration is not the main election issue and immigrants are a tiny fraction of the electorate, the benefits can easily overcome the costs. Thus, there is unlikely to be a step function in the incumbents' response. The positive electoral benefits from even a tiny fraction of enfranchised immigrants help secure current and future votes; the electoral costs will be lower for a small fraction of immigrants.

Next, I discuss how an increase in share of immigrants would affect the response of the incumbent and what role is played by party ideology and electoral competition. If the increase in the population of immigrants is such that the share of enfranchised immigrants decreased (low β), then the effort of the incumbent would go down over time. The model predictions are only valid when $\beta \neq 0$, i.e. there should be some enfranchised immigrants for the incumbent to choose non-zero effort.

With a constant flow of immigrants, the γ and $\gamma\beta$ increases. This increases the electoral benefits, and since α is a convex function in γ, the electoral costs also increases. An incumbent would want to keep up with the existing vote base of both natives and enfranchised immigrants. Therefore, they can either focus on issues that are common to both immigrants and natives (reduce ϕ) or find ways to reduce the loss of native votes when they assist immigrants (lower α). One example of such a policy is restricting future immigration. While the immigrants may be favourable or unfavourable for this policy, it helps the incumbent reduce the electoral costs from natives hostility towards existing immigrants. The preference mis-alignment plays a key role here. The incumbent uses it as a lever to maintain the electoral support due to changes in the immigrant size, share of enfranchisement and native hostility. Hypothesis 1: Incumbents may favour existing migrants and at the same time be restrictive of future immigration.

If in the constituency the natives political ideology is supportive of immigration, i.e. there is low α. The incumbent will be even more likely to help the enfranchised immigrants in this case. The disenfranchised immigrants do not affect the position of the incumbent, thus, over time they should reduce their socio-political activities. Hypothesis 2: Incum-

bents from some political parties favourable to immigration may face lower electoral costs while helping enfranchised immigrants and should exert more efforts. Further, in a setting where winning the constituency election depends on a small vote share, immigrant voters could be pivotal, then a higher fraction of enfranchised immigrants should lead to higher effort. But at the same time, immigration is a politically sensitive issue, high electoral competition could lead to higher noise in the voting of natives (high a); thus, the model predictions for the optimal effort level becomes unclear in presence of electoral competition.

1.10 Appendix: Other Surveys

While the European Social Survey provides a representative sample of immigrants in the UK, I provide additional evidence on balance on observable characteristics using the UK Household Level Panel Survey (2009 − 2019) and British Household Panel Survey (1991 − 2008). I primarily use the European Social Survey because the foreign-born respondents in the these two surveys for about a third of the sample are grouped into “other country" leading to higher measurement errors. Table A.26 summarises the data. Again, I use the respondent’s country of birth to classify them between the two immigrant groups and focus only on respondents not born in the UK. The survey sample is larger but imprecise; in particular, there is a measurement error in the classification of immigrants across the two groups. Some questions are not consistently asked across survey waves. In particular, the respondent’s country of birth for 33.8% of the sample was coded as another country, which I classify as disenfranchised. I used the information on ethnicity within the respondents who answered "other country" of birth to reduce the classification error; still, there is some imprecision.

Nevertheless, I find enfranchised immigrants to be four years older than disenfranchised immigrants, almost equal in gender proportion and more likely to be married. Both immigrant groups are balanced on the highest educational qualification, the number of hours worked, probability of employment, possessing a driving licence and job satisfaction. The enfranchised immigrants, on average, arrived three years before the disenfranchised immigrants and are more likely to have difficulty speaking English.

Table A.26—Summary Statistics: UKHLS + BHPS Sample

Variable	(1) Mean (DisEnf)	(2) Mean (Enf)	(3) Standardized difference	(4) Observations
Gender: Female	0.56	0.51	0.096	14,165
Age of respondent	34.02	37.82	0.291	14,144
Marital Status: Married	0.41	0.57	0.291	14,165
Highest Education: Degree or University	0.44	0.44	0.009	8,844
Paid work last week	0.54	0.53	0.032	14,084
No. of hours worked per week	33.86	32.81	0.090	6,570
Job satisfaction	5.18	5.15	0.020	5,449
Respondent has driving licence	0.46	0.48	0.030	13,062
Prefer to move house	0.43	0.40	0.051	12,573
Difficulty speaking english	0.16	0.24	0.199	5,220
Difficulty reading english	0.23	0.28	0.087	5,222
Year arrival to the UK	1999	1996	0.360	14,165

Notes: The table shows the differences between the immigrants from the enfranchised (Enf) and the disenfranchised (DisEnf) group on their observable characteristics. The share of enfranchised immigrants in the overall sample is 52.31%. Column (3) reports the standardized differences between the two groups. The number of observations varies across variables because not all questions were asked in survey years. The non-response rate is only marginal ($< 0.1\%$).
Data Source: UK Household Level Panel Survey ($2009 - 2019$) and British Household Panel Survey ($1991 - 2008$).

1.11 Appendix: Robustness Checks

In this section, I present several robustness checks to test the strength of the results presented in the above paragraphs.

Alternative Estimation Strategy

In Table A.27, I re-do the main results by regressing the primary outcome variables in levels including constituency fixed effects (Columns 1 and 3) rather than in 10-year differences. In Columns 2 and 4, I analyze the main outcome variables in a levels specification that is a transformation of the main estimation equation with constituency fixed effects and regional time-trends. Next, since the explanatory variable changes at each Census while the outcome variable varies each year, in Columns 5 and 6, I show the robustness of the main estimation equation for just three time periods (3 Census years or analysis in decades).

Finally, in Columns 7 and 8, I show the robustness of results using predicted population shares rather than using the 1981 population shares. Further, to analyze the effect of the share of enfranchised immigration, I use an alternative specification that looks at changes in main outcome variables on immigration and the share of enfranchised immigration (Table A.28). A constituency with 50% enfranchised immigrants and 50% disenfranchised immigrants or when the share of enfranchised immigration is 0.5 still shows null results.

Alternative Instruments

I show the robustness of the instrumental variable strategy by constructing an alternative version of the instruments (Table A.29). Columns 1 and 2 use predicted immigrants using the traditional Bartik instrument without the leave-out strategy. In columns 3 and 4, I predict the share of immigrants using a leave-out version of the instrument with a larger geographical region to alleviate any concerns that pull factors are correlated across the constituency units. As my identification relies on exogenous shocks, I update the migrant networks as new information becomes available in each Census (Columns 5 and 6), i.e. I increase the number of country groups in the enfranchised and disenfranchised immigration and use new networks to predict immigration. This robustness alleviates any concerns that a smaller number of country groups might be problematic and that 1980s

immigrant networks might not be a strong predictor of the immigrant's settlement in the later periods.

Pre-period Characteristics

To address the concerns that 1981 immigrant's settlements and other constituency-specific characteristics are correlated and might have had a time-varying effect on economic and political conditions: (a) I show that there is no correlation between pre-period changes in the outcome of interest and the change in immigration predicted by the instrument (Table A.30); (b) I augment the baseline specification with the 1981 share of employment by different industries such as Agriculture, Manufacturing, Construction, Transport etc. interacted year dummies. The results in Table A.31 Column 1 and 2 suggests these controls do not have any effect on my results.

I test if specific immigrant groups that settled in particular constituencies impacted the economic and political conditions in the future periods, i.e. pre-shares of immigrants were not independent of cross-constituency pull factors systematically related to 1981 settler's country of origin (Goldsmith-Pinkham et al., 2020). I find inclusion of the 1981 population shares from each country group as a control variable does not affect my point estimates (Table A.31, Column 3 and 4). Following Borusyak et al. (2020), the Table A.32 show that the transformed IV regression at the estimated at the level of shocks has a numerical equivalence to the existing shift-share instrumental variable regression.

Table A.27—Alternative Estimation: in levels, by decades and with predicted population

	in levels				by decades		with predicted population	
	Discussions		Valence		Δ Discussions	Δ Valence	Δ Discussions	Δ Valence
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Enfranchised Immigration	0.013*	0.013*	0.398***	0.241**	0.013**	0.321***	0.012**	0.229***
	(0.007)	(0.007)	(0.129)	(0.094)	(0.006)	(0.121)	(0.006)	(0.075)
Disenfranchised Immigration	-0.019**	-0.022*	-0.455***	-0.351**	-0.015**	-0.266	-0.014**	-0.222**
	(0.008)	(0.013)	(0.145)	(0.168)	(0.006)	(0.187)	(0.006)	(0.090)
Mean DV (in levels)	0.078	0.078			0.078		0.078	
KP F Stat	22.3	9.38	24.11	10.86	21.39	12.1	20.91	21.74
F Stat (Enf)	52.22	27.25	53.78	34.63	46.43	38.97	46.04	42.62
F Stat (DisEnf)	54.48	19.52	64.44	22	50.53	25.67	51.31	61.8
Constituency FE	Yes	Yes	Yes	Yes				
Region Time trends		Yes		Yes				
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE					Yes	Yes	Yes	Yes
Observations	5760	5760	5328	5328	576	384	5760	5091

Notes: This table shows the robustness of the estimation strategy by regressing the outcome variables in levels rather than in 10-year differences (Columns 1 to 4). Columns 5 and 6 show the robustness of the main estimation equation for just three time periods (3 census years or analysis in decades). Column 7 and 8 show robustness using predicted population shares rather than 1981 baseline population shares.

Table A.28—Estimation by Share Enfranchised

	Δ Discussions		Δ Valence	
	(1)	(2)	(3)	(4)
Immigration	-0.009	-0.056**	-0.146**	-0.802***
	(0.007)	(0.023)	(0.068)	(0.235)
Immigration × Share Enfranchised		0.104**		1.504***
		(0.043)		(0.435)
Share Enfranchised		-0.012		0.295
		(0.017)		(0.314)
Mean DV (in levels)	0.078	0.078		
KP F Stat	37.95	15.65	33.43	14.91
F Stat (Imm)		32.01		31.18
F Stat (Imm × Share Enfranchised)		33.5		31.71
Region FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	5760	5760	5091	5091

Notes: This table presents the robustness of the estimation strategy by regressing the immigration interacted with the share of enfranchised immigration.

Table A.29—Estimation by Alternative Versions of Instrument

	Traditional		Leave Out County		Base Update	
	(1)	(2)	(3)	(4)	(5)	(6)
	Δ Discussions	Δ Valence	Δ Discussions	Δ Valence	Δ Discussions	Δ Valence
Enfranchised Immigration	0.011*	0.213***	0.014**	0.220***	0.010	0.170***
	(0.006)	(0.072)	(0.006)	(0.070)	(0.006)	(0.065)
Disenfranchised Immigration	-0.015**	-0.209**	-0.016**	-0.259***	-0.008	-0.170**
	(0.006)	(0.086)	(0.007)	(0.094)	(0.005)	(0.068)
Mean DV (in levels)	0.078		0.078		0.078	
KP F Stat	29.22	30.03	15.8	16.37	26.28	24.16
F Stat (Enf)	54.91	50.01	55.14	56.66	56.2	53.35
F Stat (DisEnf)	66.86	76.64	38.25	46.18	119.2	137.4
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5760	5091	5760	5091	5760	5091

Notes: This table shows robustness of the instrumental variable strategy by constructing an alternative version of the instruments. Columns 1 and 2 use predicted immigrants using the traditional Bartik instrument without the leave-out strategy. In columns 3 and 4, I predict the share of immigrants using a leave-out version of the instrument with a county (a larger geographical region). Columns 5 and 6 update the migrant networks as new information becomes available in each census.

Table A.30—Pre-Period Outcomes on Post-Period Immigration

	(1) Δ Discussions$_{t-10}$	(2) Δ Valence$_{t-10}$
Enfranchised Immigration$_{t+10}$	-0.004	0.072
	(0.004)	(0.066)
Disenfranchised Immigration$_{t+10}$	-0.009	-0.218***
	(0.007)	(0.080)
Mean DV (in levels)	0.073	
KP F Stat	12.4	15.95
F Stat (Enf)	60.8	60.8
F Stat (DisEnf)	68.65	68.65
Region FE	Yes	Yes
Year FE	Yes	Yes
Observations	3840	3395

Notes: This table shows how pre-period changes in the outcomes are linked to subsequent changes in immigration predicted by the instrument.

Table A.31—Robustness to 1981 Economic Characteristics, Population Shares and Political Conditions

	(1)	(2)	(3)	(4)	(5)	(6)
	Δ Discussions	Δ Valence	Δ Discussions	Δ Valence	Δ Discussions	Δ Valence
Enfranchised Immigration	0.012**	0.231***	0.020**	0.380***	0.013**	0.202***
	(0.006)	(0.076)	(0.008)	(0.101)	(0.006)	(0.074)
Disenfranchised Immigration	-0.015**	-0.236***	-0.023***	-0.375***	-0.015**	-0.215***
	(0.006)	(0.090)	(0.008)	(0.111)	(0.006)	(0.082)
Mean DV	0.078		0.078		0.078	
KP F Stat	21.49	22.01	21.65	25.54	24.5	23.67
F Stat (Enf)	45.68	41.64	55.96	62.25	52.69	49.36
F Stat (DisEnf)	51.11	60.44	40.38	45.51	62.11	73.28
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Economic Characteristics		Population Shares		Political Conditions	
Observations	5760	5091	5760	5091	5760	5091

Notes: This table shows the robustness of the main results to the inclusion of the 1981 economic characteristics measured as share of economically active population (Columns 1 and 2), 1981 population shares from each country group in the constituency (Columns 3 and 4), and 1981 vote shares for Labour party, Conservative party and the regional parties at the constituency (Columns 5 and 6).

Table A.32—SSIV Regression: Shock Level Transformation

	(1) Discussions	(2) Valence
Immigration	0.008***	0.147*
	(0.001)	(0.070)
Mean DV	0.141	
KP F Stat	17.84	17.84
Country Group FE	Yes	Yes
Observations	230	230

Notes: This table show that the transformed IV regression at the estimated at the level of shocks as suggested by Borusyak et al. (2020).

Chapter 2

The Salience of Political Messages: Evidence from Soldier Deaths in India

Joint with Yatish Arya[1]

[1]University of Warwick, UK

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2.1 Introduction

Across time and space, leaders often send political messages to try to influence voters. Political persuasion is ubiquitous phenomenon that shapes public opinions and plays a vital role in deciding what policies and law are enacted in the society. There is evidence that factors such as voters' economic interests (Lupu and Pontusson, 2011) or socio-economic background (e.g. religion, Wang (2021)) play a role. Another potentially important factor might be exposure to recent events. In this paper, we ask the question: what makes voters responsive to political messages?

Consider for instance, the 2021 US Capitol attack; the former US president spoke about voter fraud and asked his supporters to march to the Capitol building. There are two broad channels through which events might make political messages more resonant. First, they might serve as informative signals to voters; voters learn more about the issue and take an action. A second possibility is that they might increase the salience of political messages. Salience theory (Chetty et al., 2009; Bordalo et al., 2012, 2013) argues that due to limited attention, the aspects of choice that are highlighted in certain ways, over-account in individual decision making. This literature suggests that event exposure may increase the salience of political messages in voters' minds even without changing the information content of voters.[2]

It is challenging to causally establish whether events increase the power of political messaging since local confounders often correlate with event exposure. India provides an ideal context to answer this question. There are several reasons for it. First, one of the main discussions (political message) during the run-up to the 2019 national election in India was the incumbent prime minister Narendra Modi's aggressive response to attacks on Indian soldiers. Second, soldiers are hired from all over India and placed in different conflict-prone zones. Third, in Indian context, the detailed information on all soldier deaths in the last 15 years is publicly available, including their home address. We exploit the fact that there is greater exposure to the death of a soldier in their *home electoral constituency*. Fourth, the fatality rate for soldiers in our analysis period is 0.1%, thus a soldier death gives an exogenous shock to the constituency.

To estimate the impact of a soldier death on voting behaviour, we run a three-period difference-in-difference regression using national elections in India for the years 2009, 2014 and 2019. Given that the message from Modi about soldier deaths came between 2014-2019, we define the treatment group as an electoral constituency from where at

[2]We sketch a model based on Bordalo et al. (2020) in the appendix to ground this idea.

least one soldier died between June 2014 - April 2019. Consequently, the control group is an electoral constituency from where no soldier died within the same period. We find that the vote share of PM Modi's right of centre coalition parties increased by 4.6 p.p. for the treatment group in the 2019 election. We analyse pre-trends of vote shares of the treatment and the control group and find that the unconditional mean of the vote shares of both groups is almost the same in the 2014 and 2009 national elections. These results are robust to including constituency fixed effects and time-variant socio-economic variables like employment, income, caste, religion and education.

Exploring why soldier deaths affect voting behaviour, we find a set of results consistent with the explanation that exposure to soldier deaths increases the salience of Modi's message in the voters' minds. We posit that if soldier deaths increase the salience of Modi's messages, then only those soldier deaths should increase Modi's vote share, which he referenced in his speeches. His reference to soldier deaths is crucial because only when a politician highlights an event or an issue, the voter associates the event with the politician's agenda and consequently votes for him.

We do a text analysis of Modi's speeches to identify which soldier deaths change their content. Soldiers fatality in India occur in geographically distinct regions,[3] which allows them to be classified into (i) secessionist conflict and (ii) left-wing extremist (LWE) conflict. Text analysis of Modi's speeches reveals that their content changed only in response to soldier deaths in the secessionist conflict but not in response to the LWE conflict. Splitting soldier deaths into these two categories, we find that the vote share of Modi's coalition increased by 5.6 p.p. in the home constituencies of those soldiers who died in the secessionist conflict. LWE deaths do not, by contrast, significantly change voting behaviour, in line with our explanation. We also find that constituencies that received a death from the secessionist conflict are more likely to mention secessionist conflict as the most important election issue. Notably, people in constituencies that received a death from the secessionist conflict are likely to give more credit to Modi for his aggressive response to soldier deaths, even though they are equally informed about the response.

Since political messages reach people through the media, voters' media connectivity might play a role. Consistent with this idea, we find that TV viewership affects voter responsiveness to soldier deaths. Moreover, since literature related to salience argues that recent events should affect decision making more, we should find that deaths closer

[3]There are three distinct regions. (i) The state of Jammu and Kashmir impacted by secessionist struggle (ii) The northeast region comprising of seven small states which are also impacted by violent secessionist movements, and (iii) the central-eastern region that is impacted by left-wing extremism (LWE). See Section 2.3 for more detail.

to the election affect voting more.[4] We find that indeed deaths closer to the election affect voting behaviour more.

A concern is that the changes we find in voting behaviour might be driven by secessionist deaths alone and not speeches. To address this concern, we also look at the 2014 national election, where there was negligible messaging about secessionist deaths from the PM and the main challenger.[5] If events alone were driving the results, we would expect that secessionist deaths in 2014 would have a similar effect on voting behaviour as in 2019. Consistent with the idea that political messages played a role, we find that secessionist deaths did not affect voting behaviour in 2014. We also consider other possible explanations like whether the results are driven by differences in local media coverage about the issue, differences in the level of local election campaigning, rise of Hindu nationalism or political participation. However, the empirical findings are not consistent with these channels.[6]

2.1.1 Related literature

First and foremost, our paper contributes to the emerging literature on the role of *salience in political economy*. Fouka and Voth (2013) documents that contemporary events during the Greek sovereign debt crisis increased the salience of memories of world-war II atrocities to affect consumer choices. Colussi et al. (2021) provide empirical evidence that minority salience affects voting. While focusing on how salience affects individual decision making, our paper differs from these papers by studying how political messages interact with event exposure to affect voting behaviour. Our paper is one of the first to document evidence that political messages become more salient in voters' minds when exposed to events related to that message.

Our paper also contributes to the literature on *how persuasion impacts socio-economic outcomes* like inter-ethnic conflict Yanagizawa-Drott (2014), rise of Nazism Adena et al. (2015) and ethnic identity Blouin and Mukand (2019) and on the literautre studying the causes and consequences of conflict (Bazzi and Blattman, 2014; Limodio, 2019; Berman et al., 2017; Fetzer et al., 2021). Our paper focuses on how *persuasion affects voting behaviour* (Enikolopov et al., 2011; Spenkuch and Toniatti, 2018; Wang, 2021). These

[4]See Tversky and Kahneman (1973) and Thaler and Sunstein (2008) for discussion on why recent events are more readily available. The empirical literature on salience in the field of political economy also find this to be true, see Colussi et al. (2021).

[5]At that time, the incumbent PM was Dr Manmohan Singh. The primary challenger was Mr Narendra Modi, who also focused on other issues during the campaign, like corruption and inclusive development.

[6]See Section 2.5 for greater details.

papers use variation in media and campaign exposure to identify the effect of persuasive messages on public response. Our paper departs from them to study how changes in event exposure increase voters responsiveness to persuasive messages. Using soldiers deaths in India, we causally establish the relation between event exposure and responsiveness to persuasive political messages and voting behaviour. Thus, we show that political persuasion can lead to a differential impact among voters depending upon event exposure.

Finally, our paper also contributes to the literature on how *local events and experiences shape political opinions*; for instance, mass shootings in the US affecting voting behaviour Yousaf (2021), and weather shocks affecting perceptions about global warming Egan and Mullin (2017). Perhaps the closest paper to us in this regard is Gartner (2008). This paper builds a rational expectations theory to study the impact of Iraq war fatalities on American political opinion. It argues that soldier fatalities represent information on the cost of conflict, thus hurting the incumbent electorally and decreasing his vote share. Our paper provides an argument based on behavioural sciences that highlighting soldier deaths can sometimes help incumbent leaders. Incumbent leaders can highlight their response to these deaths, making them salient in the voters' minds. We find evidence in India that supports this argument. We find that the incumbent vote share increased more in constituencies with greater exposure to soldier deaths. Hence, our paper demonstrates that soldier deaths are not necessarily costly for the incumbent, as documented in this literature.[7]

The rest of the paper is structured as follows. In the next section, we present the conceptual framework. Section 2.3 discusses the background and the data sources. Section 2.4 provides the main empirical results, robustness checks and other results consistent with our framework. Section 2.5 discusses other possible mechanisms, and finally, Section 2.6 concludes.

2.2 Conceptual framework

This section discusses the different channels through which exposure to events related to a politicians' message affects voting behaviour. In particular, we discuss how the effect of two different yet plausible channels through which event exposure can affect voting behaviour can be disentangled, particularly in the case of soldier deaths in India.

One possible reason why soldier deaths affect voting behaviour is that soldier deaths

[7] Other papers also study the impact of soldier deaths on voting outcomes. Most of these studies, unlike our results, find a negative impact on the incumbent vote share (Karol and Miguel, 2007; Kibris, 2011).

serve as information regarding the conflict in which the soldier died (Gartner, 2008). Gartner (2008) argues that support for conflict is not a 'blank check' and soldier deaths provide information that the public use to decide their level of support for the conflict. Sometimes soldier deaths can be directly informative (for example, the trend of deaths over time partially reflects how problematic the issue is). They can also indirectly inform voters by providing a stimulus to gain information regarding the issue or by differential media coverage (Karol and Miguel, 2007).

In the case of India, total soldier deaths over time can provide information on how successful the state has been in dealing with the secessionist and LWE conflicts plaguing the country. They can also provide indirect stimulus to voters, and they can learn about how the current Government is dealing with the issue. An important aspect of this channel of information affecting voter choices is that it should start with voters being more informed about the issue.

In our context, Modi wants voters to give him credit for his aggressive response to soldier deaths. If information is the key, then voters exposed to soldier deaths should be, first and foremost, more informed about Modi's response to soldier deaths. The response does not come directly because of soldier deaths, as these deaths are uninformative in themselves about the Government's response. However, these deaths can make voters in the home constituencies more informed indirectly, for example, through their own initiative (learning through the internet), informative local media coverage, or social media platforms. We will compare how informed voters are about Modi's response to soldier deaths in home constituencies of dead soldiers to voters in constituencies from where the soldiers' did not die. We will also consider whether the results are explained by local media coverage, social media and internet usage.

The second channel through which soldier deaths can impact voting behaviour is by increasing the salience of the politicians' message in the voters' minds. In our context, Modi highlights soldier deaths because he wants voters to focus on the issue of national security and his aggressive response to soldier deaths while making voting decisions. It is critical to note that exposure to soldier deaths can increase the salience of Modi's message in voters' minds without any change in information. An increase in salience because of exposure to events can be due to many reasons. It could be the case that the effect of political campaigns increases because the politicians' campaign on national security is now 'personal' to voters exposed to soldier deaths.[8] It can also be the case that

[8]Personal means that voters now identify with the campaign as they were exposed to the issue highlighted in the politicians' campaign. This effect in the literature is called the campaign advertising effect. For theory on the campaign advertising effect (Bernhardt and Ghosh, 2019). An empirical paper measuring

soldiers dying in terrorist attacks often committed by self-proclaimed Islamic extremist organisations makes the Hindu Nationalistic identity of voters salient and hence they vote for Modi.[9] It can also be the case that exposure to soldier deaths forms a memory in voters' minds, which is recalled by political messages, which makes the issue salient.[10]

The voter associates the event with the politician's agenda and votes for him only when he refers to those events in his messages and campaign. Thus, if exposure to soldier deaths makes politicians' message salient in voters' minds, then it must be the case that only those soldier deaths that the politician highlights should affect voting behaviour. In our context, this implies that only soldier deaths related to the conflict that Modi focuses upon in his speeches should increase his vote share. Soldier deaths in conflicts not referenced by him should not affect voting behaviour. We test this in Section 2.4.2. We should also find that deaths that are closer to the election should affect voting behaviour more because literature related to salience theory argues that recent events/experiences change behaviour more (Tversky and Kahneman, 1973; Thaler and Sunstein, 2008; Colussi et al., 2021). Also, given that political messages reach people through media, voters' media connectivity should matter. We consider this in Section 2.4.4.

2.3 Background and data

This section discusses the Indian context and data sources used to study the effect of event exposure on voting behaviour. First, we discuss the political spectrum in the national election of 2019 and the decade that preceded it. We go on to discuss the armed forces involved in handling internal security in conflict-prone zones in India. Finally, we discuss the data sources used.

2.3.1 Background

Political spectrum and elections in India The Indian political spectrum is more complex than a simple two-party electoral range.[11] The most popular political force in the

the effect of campaign advertising is Spenkuch and Toniatti (2018).

[9]Hindu Nationalism is the ideological bedrock of Modi's political party, the BJP. If voters' Hindu Nationalistic becomes salient, then voting behaviour might change. There is a strand of economics literature starting from Akerlof and Kranton (2000) that demonstrates that identity affects individual decision making.

[10]We build a model based on Bordalo et al. (2020) in the appendix that grounds this idea.

[11]List of all parties registered with the election commission of India as of 23-09-2021 can be found here: https://eci.gov.in/files/file/13711-list-of-political-parties-symbol-main-notification-dated23092021/. An

country is the incumbent PM Narendra Modi's party, the Bhartiya Janta Party (BJP). The BJP is a Hindu nationalist party, and its political coalition is called the National Democratic Alliance (NDA).[12] It has been in power at the national level since 2014. The main opposition party in India is the Indian National Congress (INC), which was in power between 2004-2014. The INC had its origin in the freedom struggle against the British back in the 19th century. It can be characterised as a centre-left party, and its political coalition is called the United Progressive Alliance (UPA).[13] There are also regional parties who play an important role in national elections. For example, Samajwadi Party (SP) is significant in the most populous Indian state of Uttar Pradesh and thus becomes nationally relevant. The different communist parties of India have a regional presence in some parts of the country. These parties together are popularly called the Left Front.[14]

All the parties participate in different National and State level elections, which have a five-year cycle in India, conditional on a government enjoying the support of the parliament or state assembly respectively. India has a parliamentary system of democracy with a first-past-the-post system. In this paper, we focus on the National elections of 2009, 2014 and 2019 (also referred to as General Elections). The election results are publicly available only at the constituency level in India. Further, the map of electoral constituencies in India was redrawn in 2008. Hence we are restricted to comparing three election cycles starting from 2009.

Armed forces and conflict regions The Indian state maintains special units of armed forces to deal with matters concerning internal security.[15] These paramilitary forces are called 'The Central Police Armed Forces of India.' These forces comprise different organisations, including the Central Reserve Police Force (CRPF), Border Security Force (BSF), Assam Rifles (AR), Central Industrial Security Force (CISF), Indo Tibetan Border Police (ITBP), National Security Guard (NSG) and Seema Suraksha Bal (SSB).[16] The organisation that reports more than two-thirds of the number of deaths in our database is the CRPF. They state their responsibility as follows: "CRPF is deployed in aid of civil power in matters relating to maintenance of law and order, internal security and coun-

older list can be found here: urlhttps://eci.gov.in/files/category/149-list-of-political-parties/.

[12]We consider the coalition based on the following information: https://www.elections.in/parliamentary-constituencies/national-democratic-alliance.html

[13]We consider the coalition based on the following information: https://www.elections.in/parliamentary-constituencies/united-progressive-alliance.html

[14]https://www.britannica.com/topic/Left-Front

[15]Indian State has long maintained that the Kashmir issue along with other insurgencies in India are domestic issues. See the statement of the spokesperson for the Government of India in 2019: http://ddnews.gov.in/national/india-jammu-kashmir-issue-internal-matter-india

[16]The details of each of them can be found here: https://www.mha.gov.in/node/95690/

terinsurgency."[17] These forces are under the control of the Ministry of Home Affairs in India and are around 1 million in number.[18] Soldiers can be potentially hired from any political constituency in India. They are stationed at various conflict-prone zones across India. We discuss these conflict zones below.

In India, there are multiple regions of conflict. Broadly they can be classified into three based on geographic distinctness.[19] The first is the Kashmir region. It can be characterised as a secessionist movement and has an Islamic character to it (Bakaya and Bhatti, 2005). According to the South Asian Terrorist Portal (SATP), around 21,215 people lost their lives in this conflict between 2000 and September 2019. Another geographic region in India that is dealing with secessionist conflict is North-East India. This region comprises seven states, including Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Here there are multiple armed separatist factions like ULFA, NSCN (K) fighting the Indian state (Upadhyay, 2006). According to SATP, around 11,696 people have lost their lives between the year 2000 and September 2019 in this region.

The third geographic region that deals with violent extremism is India's central region, the so-called 'red corridor'. This region is the bastion of Left-Wing Extremism. This violent left-wing movement is distinct from the other two movements. Its goal is not to establish a separate state from India but to use guerrilla warfare to install a "people's government." (Anand, 2009) According to SATP, 10,432 people have died in this conflict from 2000 till 2019. Figure 2.1 shows the location of these conflict zones on India's map. Kashmir and the North-East region has been classified as a secessionist conflict on the map. The states of Chhattisgarh, Jharkhand and Orissa have been shaded as red for the LWE conflict.[20] In our data set, we find that, between 2009-2019, 723 soldiers lost their lives on duty. Thus the fatality rate is less than 0.1%. The variation in the home constituencies of dead soldiers is shown in Figure 2.2.

Violent attack in Pulwama, Kashmir and its aftermath Around two months before the start of the national elections in 2019, there was a suicide bombing in Pulwama located in the Indian state of Jammu and Kashmir. This attack, which came to be referred

[17] https://www.police.gov.in/poi-internal-pages/central-armed-police-forces-capfs

[18] As per MHA, the total sanctioned strength of these forces is 966914. (see, https://www.mha.gov.in/MHA1/Par2017/pdfs/par2016-pdf/ls-190716/315%20E.pdf

[19] For details on conflict and terrorism in India, see: https://satp.org/terrorism-assessment/india

[20] The LWE conflict often spills over to other surrounding states not shaded in the map. However, the soldier deaths in our data comprise all deaths in the LWE conflict across all states. For greater detail on regions affected by LWE conflict in India, see: https://www.mha.gov.in/division_of_mha/left-wing-extremism-division

to as *Pulwama attack* (see the image in Figure 2.3), was allegedly carried out by a radical Islamic outfit called *Jaish-e-Mohammed*. As a result, forty-four soldiers belonging to the Central Armed Police Forces lost their lives (Feyyaz, 2019).

This attack invoked an aggressive response from the Indian Prime Minister. It is alleged that *Jaish-e-Mohammed* runs its training camps in Pakistan, around the region called Balakot. On February 26, the Indian Air Force carried out airstrikes in Balakot, which came to be referred to as the *Balakot Airstrikes* in the Indian Media.[21] The location of Pulwama and Balakot on a map is provided in figure 2.4. Modi touted the 'success' of these strikes to garner political support for the election.[22]

Importantly, this was not the only incident where violent attacks on Indian soldiers invoked a strong response from Modi's Government. For example, in 2016, grenade attacks were carried out on security forces near the town of Uri in the state of Jammu and Kashmir, India.[23] In retaliation, India made a preemptive strike against terrorist teams crossing the Line of Control and struck at the terrorist shelter locations, allegedly killing approximately 150 terrorists.[24] Modi tried to garner political support for such aggressive responses to soldier deaths throughout his first term (2014-2019). Text analysis of Modi's speeches suggests a general trend of sending political messages after soldier deaths. We discuss this in greater detail in Section 2.4.2.

2.3.2 Data

The main dependent variable in our analysis is the vote share of PM Modi's party in India. We also use the vote share of different political parties in India as the dependant variable. The election commission of India reports vote shares and winning parties of all national and state in India. We use the data collated by Bhogale et al. (2019) for the years 2009, 2014 & 2019. The data also reports the winning party in a particular constituency.

We use the publicly available data on the CRPF website and other government websites

[21] https://www.armscontrol.org/act/2019-05/features/pulwama-crisis-flirting-war-nuclear-environment

[22] Neutral agencies suggest that these strikes did not cause any significant damage to their desired target. See, Martin Howell; Gerry Doyle; Simon Scarr (March 5 2019), Satellite images show buildings still standing at the Indian bombing site, Reuters Quote: "The images produced by Planet Labs Inc, a San Francisco-based private satellite operator, show at least six buildings on the madrasa site on March 4, six days after the airstrike. There are no discernible holes in the roofs of buildings, no signs of scorching, blown-out walls, displaced trees around the madrasa or other signs of an aerial attack.

[23] https://www.bbc.co.uk/news/world-asia-india-37399969

[24] The Line of control is the effective border between India and Pakistan in the disputed region of Kashmir. For details on the Indian response, see https://eprints.lancs.ac.uk/id/eprint/89171/1/Saloni_Kapur_with_author_details.pdf

for data on soldier deaths.[25] These websites contain a martyr list of soldiers. In addition, the lists contain information on the incident, region of conflict and home address of these dead soldiers. We use these home addresses to determine the home constituency of the dead soldier. For a summary of these deaths, see Table 2.1.[26]

For socio-economic variables, we use two data sets. One is the SHRUG data set Asher et al. (2021) which contains information on night lights, religion and share of Scheduled Castes (SC) and Scheduled Tribes (ST) population.[27] The other data set is the individual level voter survey from the Centre for the Study of Developing Societies (CSDS), Delhi. This organisation conducts pre-election and post-election surveys for national and state elections in India and is widely regarded as the most respected election survey in India.[28]. They ask responders about their employment status, income levels, occupation, education, asset holding, gender, age and whether they live in a rural or urban area. We also use this survey to get information on media consumption, election activity, level of political participation and awareness about electoral issues. Further, this survey confirms voting behaviour at the individual level, which is available at the constituency level from Bhogale et al. (2019).

To study the media coverage about soldier deaths and the government reaction to them, we use data from broadcastseva.gov.in, a government website monitoring the content of various TV channels, including news channels. We also use the GDELT data, which monitors conflict news from print, broadcast, and web news media in over 100 languages from across every country in the world. We use their data to study how different types of conflict (secessionist and LWE) were covered by all media sources in India between 2009-2019. We use GDELT data to calculate the number of articles published per week and the number of sources reporting on the issue per week about different types of conflict in India.

Finally, to study the political messages conveyed by Modi, we web scrapped his political speeches from narendramodi.in, a website containing all his speeches. Together with data on soldier deaths, this data constitutes a novel data set, which we use to predict the effect of deaths on speech content.

[25]These websites are: https://www.bharatkeveer.com and https://www.hamaripolice.com

[26]We use newspaper reports to verify a random sample of these deaths. Any remaining errors are likely to bias our estimates downwards because of the Identification strategy that we use. See Section 2.4.1 for greater details.

[27]The Indian constitution contains a schedule of certain castes and tribes, which were historically backward. For details, see Dushkin (1967).

[28]Many important papers on Indian Politics use this dataset. For example, see Banerjee et al. (2019)

2.4 Empirical results

We present the empirical results in four parts. Section 2.4.1 consists of our primary empirical specification and the baseline results that estimate the effect of a soldier death on voting behaviour. Section 2.4.2 discusses text analysis of Modi's speeches to identify which soldier deaths are referenced in his speeches. We discuss robustness checks in Section 2.4.3. Section 2.4.4 discusses further evidence in favour of the explanation that exposure to soldier deaths increases the salience of politicians' messages to increase his vote share. These results include the importance of media in translating events into votes and the impact of soldier deaths absent the political message.[29]

2.4.1 Baseline results

Given that Modi focused on soldier deaths in his speeches before the 2019 national election, we would expect that Modi's vote share is higher in constituencies with greater exposure to soldier deaths. The key observation that allows us to test this assertion is that exposure to soldier death is greater in the home constituency of the dead soldiers. We thus define our treatment and control group in the following way. The treatment group consists of the constituencies from where at least one soldier died between June 2014 and April 2019. The control group consists of those constituencies from where no soldier died between the same time period.[30]

We run a three-period difference-in-difference regression to deal with possible underlying differences between treated and untreated constituencies. The treatment period is the 2019 national election. Hence, 2014 and 2009 national elections form the pre-treatment periods. Thus, we can compare our treatment and control groups in 2009 and 2014 and test whether treated and untreated constituencies are similar. We do that by looking at pre-trends of vote shares for the two groups. Formally, we estimate the following regression equation.

$$Y_{c,s,t} = \gamma_1 \text{Death}_{c,s} \times \text{Post}_t + \omega_1 \text{Death}_{c,s} + \omega_2 \text{Post}_t + \beta' X_{c,s,t} + \alpha_c + \alpha_t + \epsilon_{c,s,t} \quad (2.1)$$

[29] We also consider alternative explanations in Section 2.5

[30] We use the total number of deaths as a robustness check. We discuss it in Section 2.4.3. It is worth noting that if some soldier deaths are omitted in our data set, but this omission is random, it leads to a downward bias in our estimated coefficients. This is because the treatment group is defined as 'at least one soldier death.' Thus, if soldier deaths are omitted, some constituencies that should have been counted as treated are now in the control group. However, no control group constituency is wrongly classified as treated. Hence, the coefficient can only be biased downwards.

The main dependent variable ($Y_{c,s,t}$) is the vote share of Modi's political coalition, the NDA. The subscript c denotes the constituency, s denotes the state, and t denotes the general election year.

The treatment group is a parliamentary constituency that received at least one soldier death between June 2014 and April 2019 ($Death_{c,s}$). Post_t takes the value 1 for general election year 2019 and 0 otherwise. We use time fixed effects (α_t). We also include a set of controls ($X_{c,s,t}$), some of which are time-invariant, including log(Distance to Kashmir Conflict), log(Distance to LWE Conflict), log(Distance to North-East Conflict), log(Mean Night Lights), but some are time-variant including log(electorate size) and lower caste (SC) population share and tribal (ST) population share.[31] Standard errors are clustered at the constituency level.[32] Other time-variant variables which can potentially affect voting behaviour, including the mean of log(Age) in a constituency, fraction of voters with education below class 10, fraction of voters with education at or above class 10, fraction employed, the fraction of voters who are Hindu, fraction living in rural locality and mean average monthly income in a constituency, are estimated using the CSDS individual-level voter survey. We check whether these socioeconomic variables are correlated with the treatment group in Table 2.3. Finally, we include constituency fixed effects α_c.

The main results are reported in Table 2.2. We have Modi's Hindu-right coalition (NDA) vote share as the dependent variable in all four columns. Table 2.2 reports coefficients on the treatment times post variable γ_1 (Death x Post). We start in column 1 by reporting coefficients with only state fixed effects. The coefficient is 4.4 p.p. and is significant at 1%. This effect is large, and given that the mean vote share of the coalition is around 37%, this constitutes a more than 10% change in vote share. We add time fixed effects in column 2 and time-variant and time-invariant controls in column 3. It is worth noting that the coefficient and the standard errors remain stable across columns. Column 4 includes constituency level fixed effects and time-variant controls and thus corresponds to the main specification discussed in Equation 2.1. Column 4 shows that the vote share of NDA increased by 4.6 p.p. in home constituencies of dead soldiers. This result is statistically significant at the 1% level.

To check the validity of our identification assumption, we plot the unconditional mean of the vote share of the NDA for the treatment and the control groups for the election years of 2009, 2014 and 2019 in Figure 2.5. The mean vote share of the two groups

[31] We present our results with a model on state fixed effects and show results controlling for both time-invariant and time-variant controls. When we introduce constituency fixed effects in the model, we exclude the time-invariant controls.

[32] We use Conley standard errors as a robustness check, see Section 2.4.3

is almost the same for the two groups in the 2014 and 2009 national elections before it diverges in the treatment period. So, not only is there a common trend in vote shares of the two groups before the 2019 election, the vote share is almost the same. This provides evidence that these constituencies voted very similarly before the treatment period.

Moreover, though we include constituency level fixed effects in our regression, there is a possibility that a time-variant socioeconomic control is biasing our coefficients. For example, migration can be changing the demographic characteristics of the electoral constituencies. To verify this is not the case, we regress socioeconomic variables like religion, caste, income, education, employment, age as the dependent variable on the same set of X variables discussed in Equation 2.1. The coefficient associated with the primary variable of interest (Death $\times$ Post) is provided in column 3 of Table 2.3 for the dependant variables, including the size of the electorate, mean of log(Age) in a constituency, fraction of voters with education below class 10, fraction with education at or above class 10, fraction employed, the fraction of voters belonging to different caste categories, the fraction of voters who are Hindu, fraction living in rural locality and mean average monthly income in a constituency. None of the socioeconomic variables is significantly correlated with our main dependant variable. We further verify using the individual-level voter survey in Section 2.4.3 that controlling for these variables does not change our main results.

In Table 2.4, we discuss the same specification as in Equation 2.1, but the dependant variable is the vote share of different political parties across the political spectrum. Column 1 is the vote share of the main Hindu-Right party, the BJP, which shows a similar increase in vote share as the whole coalition in column 2. The main opposition party (INC) and its political coalition (UPA) show a slight increase in vote share (columns 3 and 4 respectively), although with comparatively large standard errors. The increase in the vote share of the right is coming at the expense of the regional parties. This result is consistent with the interpretation that exposure to soldier deaths make voters think more about issues such as national security and less about regional election issues, as being conveyed by Modi's speeches. Therefore, regional parties suffer.

The number of observations in each of the columns in Table 2.4 differs because not all parties contest elections in every parliamentary constituency. This raises a possibility that parties might strategically choose to contest elections depending on the exposure to soldier deaths in a constituency. However, we do not find any evidence that parties are strategically contesting elections depending on soldier deaths. See Table B.1 in the appendix. In the following sub-section, we do a text analysis of Modi's speeches to identify soldier deaths from which conflict regions are highlighted by Modi.

2.4.2 Text analysis

In this sub-section, we ask the following question: which type of soldier deaths matter? If event exposure increases the salience of politicians' messages, then exposure to only those soldier deaths should affect voting behaviour that are referenced and highlighted in Modi's speeches. To explore this hypothesis, we perform a text analysis of Modi's speeches. To identify whether Modi references soldier deaths, we explore whether the content of Modi's speeches changes in response to these deaths. We particularly examine whether his speeches play up soldier deaths in all conflicts or only specific conflicts.

Soldiers die in two types of conflict in India, which occur in geographically distinct regions and thus can be classified as secessionist and Left-Wing Extremist (LWE). We have information on the exact dates these deaths took place. We combine this information with data on Modi's speeches. In the website 'narendramodi.in,' his team that maintains the website tags these speeches according to their main content. We say that a speech is militaristic if it contains one of several tags such as: "Defence," "National Security," "Soldiers," "Martyrs," "CRPF."[33] Our results are robust to variation in classification to the tags used. The regression equation that we estimate is given below:

$$Y_t = \beta_1 \text{Secessionist Death}_t + \beta_2 \text{LWE Death}_t + \alpha_{my} + \epsilon_t$$

Notice that the unit of observation is a speech. The dependent variable Y_t is a dummy variable that takes the value 1 if speech contains militaristic content. The x-variables of interest are (i) Border Death which is a dummy variable that takes the value 1 for the first two (or three) speeches after secessionist death and (ii) Maoist Death which again is a dummy for the first two (or three) speeches after Maoist death. We have month-year (or month and year) fixed effects which we denote by α_{my}. The results are reported in Table 2.5.

In Table 2.5, column 1 is a specification run with month and year fixed effects, and column 2 runs with quarter-year fixed effects. In both specifications, we can see that a soldier death in the secessionist region predicts the militaristic content of Modi's speech. Around 28% of all Modi's speeches contain militaristic content. This content goes up to

[33]The total list of words used are - "Defence," "Security," "National Security," "Terrorism," "Armed Forces," "Army," "Indian Army," "Indian Air Force," "Air Force," "Indian Navy," "Navy," "Soldiers," "Martyrs," "Sandesh2Soldiers," "National Cadet Corps," "NCC," "National War Memorial," "Police," "Central Reserve Police Force," "CRPF," "CISF," "National Police Memorial," "Pulwama," "Pakistan," "Surgical Strike." These words are those that are related to armed forces or soldiers in India. We discuss the reason for including each word in detail in the online Appendix B.

around 38% immediately after a soldiers' death in the secessionist region. The increase is statistically significant. However, for deaths in regions dealing with LWE, we do not find such a strong result. The coefficient, though positive, is smaller and statistically insignificant. These results strongly suggest that Modi's speeches highlight soldier deaths in secessionist conflict but not in LWE conflict.

We thus test whether vote share is affected by exposure to all deaths or only secessionist deaths. In order to do that, we split our treatment group into two. The first group is the home constituency of a soldier who died in secessionist conflict (Secessionist Deaths). The second group is the home constituency who died in the LWE conflict (LWE Deaths). Given the changing content of Modi's speeches after secessionist deaths and not LWE deaths, secessionist soldier deaths should affect his vote share, but exposure to LWE deaths should not. The exact regression equation that we estimate is given below.

$$\begin{aligned} Y_{c,s,t} = \gamma_1 \text{Secessionist Death}_{c,s} \times \text{Post}_t + \gamma_2 \text{LWE Death}_{c,s} \times \text{Post}_t \\ + \omega_1 \text{Secessionist Death}_{c,s} + \omega_2 \text{LWE Death}_{c,s} + \omega_3 \text{Post}_t + \beta' X_{c,s,t} + \alpha_c + \alpha_t + \epsilon_{c,s,t} \end{aligned} \tag{2.2}$$

All the variables are defined analogously as in Equation 2.1, and we also have the same set of controls and fixed effects. The results are reported in Table 2.6. It is clear from the table that the increase in vote share of Modi's coalition is coming from the home constituencies of soldiers that died in the secessionist conflict and not from the home constituencies of soldiers who died in the LWE conflict. Column 4 of Table 2.6 includes constituency fixed effects and reports a 5.6 p.p. increase in vote share of Modi's coalition. This result is significant at 1%. We will discuss several robustness checks of this result in the next sub-section.

Further, if Modi's speeches influence voters in the way salience theory suggests, we would expect voters exposed to secessionist deaths to say that secessionist conflicts were on their minds while deciding whom to vote for. We use a voter survey conducted by CSDS to examine this question. They ask voters about which election issues they consider to be the most important election issue. When asked if the voters chose topics such as "Terrorism," "National Security," "Pakistan related/surgical strike/cross-border terror/Pulwama attack," we grouped these issues as 'secessionist issues.'[34] On the other hand, if voters chose topics such as "Naxalism/Maoism," which is how Indians refer to the LWE conflict, we grouped the issues as 'LWE issues.'[35] We also combine the seces-

[34]Other issues included are "Nationalism/patriotism," "Article /Article A Kashmir issue." The reasons for our classification is discussed in greater detail in online Appendix B.

[35]All words that we include are "Naxalitte," "Naxalism," "Maoism," "Naxalism/Maoism."

sionist issues, the LWE issues, and issues such as “Mob lynchings" and “Law and Order," together to group them as “general extremist issues."[36] We test whether election issue variables created above are systematically associated with exposure to soldier deaths in various conflict regions. The regression equation that we estimate is given below:

$$\begin{aligned} Y_{i,c,s,t} = \gamma_1 \text{Secessionist Death}_{c,s} \times \text{Post}_t + \gamma_2 \text{LWE Death}_{c,s} \times \text{Post}_t \\ + \beta' X_{i,c,s,t} + \alpha_c + \alpha_t + \epsilon_{i,c,s,t} \end{aligned} \tag{2.3}$$

Here $Y_{i,c,s,t}$ is the election issue mentioned by the i_{th} individual in constituency c, state s and time t. The treatment groups are the same as before. We still have constituency and time fixed effects. We include individual-level socioeconomic controls such as log(Age), education level, employment dummy, caste categories dummies, gender, religion, urbanisation dummy and Income Band are now at the individual level. Standard errors are still clustered at the constituency level. The results are reported in Table 2.7.

The proportion of people who mention secessionist issues as the most important election issue is significantly higher in the home constituencies of soldiers who died in the secessionist conflict. The mention of general extremist issues does not go up in these regions. This result provides direct evidence that when political messages highlight soldier deaths, exposure to soldier deaths increases the issue’s salience in the voters’ minds. Moreover, mention of LWE issues does not go up in home constituencies of soldiers dying in LWE conflict, in line with the idea that event exposure without the politicians’ message does not become salient in the voters’ minds.

2.4.3 Robustness

In this sub-section, we discuss the robustness of the main result of the previous subsection: exposure to secessionist deaths increases the vote share of Modi’s coalition; however, exposure to LWE deaths does not.

First, we present the results using an individual-level survey with all time-varying controls. Though we presented the balance table with estimates of some vital time variable

[36] All issues included are “Terrorism," “Peace," “Law & Order," “Naxalitte," “Secularism/Communalism," “Naxalism, Maoism," “National Security," “Pakistan related/surgical strike/cross-border terror/Pulwama attack," “Religious identity/protection of my religion," “Religious conversion," “Religious Problems," “Nationalism/patriotism," “Article /Article A Kashmir issue," “Communalism, secularism," “Naxalism/Maoism," “Hindutva,” “Threat from China," “Appeasement of Muslims," “Cow protection/cow slaughter issue," “Mob lynchings."

controls in Table 2.3, it is worth checking how controlling for these and some more time-variant controls at the individual level affect voting behaviour. We use the CSDS data set in which voters report the party they voted for, which becomes the dependant variable. Our main right-hand side variables remain the same but with many new time-varying controls, including the respondent's religion, employment status, income band, education level, asset holding, caste category, gender, age and whether he/she lives in a rural or urban setting. The regression equation is the same as 2.3, except that now the Y variable is a dummy for the party the respondent voted for.

The results are reported in Table B.2. The direction and significance of the coefficients remain the same, although the individual-level survey reports larger effects on the treatment and larger standard errors. One explanation of the differing magnitude is the 'silent voter hypothesis,' which many political analysts believe to be true for India.[37] According to this hypothesis, voter surveys often overestimate the vote share of those parties supported by upper castes because upper castes are more vocal in their support. The lower castes are silent or even misreport their voting choices in surveys. Thus, if upper castes were more likely to vote for the right coalition in case of soldier death, the survey results would report a higher coefficient on the treatment times post variable. We find evidence for this hypothesis as parliamentary constituencies with a larger population of upper castes shows a larger effect on vote share because of soldier death even using the election commission data. See Table B.3.

We also check whether the home constituencies of dead soldiers voted differently than those from where soldiers did not die before the 2019 election. We check this by assigning our treatment, i.e. soldier deaths between 2014-2019 to the 2014 election. Table B.4 in the appendix reports the result. The results indicate that soldier deaths between 2014-2019 do not affect voting behaviour before they occur. This is evidence for the common trends assumption.

Carozzi, Pinchbeck and Repetto (2021) argue that soldier deaths can also affect long term behaviour. We test this by checking the effect of deaths between 2009-2014 in the 2019 election. Results are reported in Table B.5. We do not find any long term effects of soldier deaths. Given that papers based on salience theory Colussi et al. (2021) argue that recent events matter much more than earlier ones, we should find that older deaths do not affect voting behaviour. Thus, we find results in line with salience theory.

Our results can also be biased if home constituencies of dead soldiers send more soldiers

[37] https://www.livemint.com/elections/lok-sabha-elections/how-exit-polls-landed-on-a-modi-return-1558373860298.html

in the armed forces because they are 'more nationalistic.' Given the lack of publicly available data on constituency level recruitment, the total death count in a constituency can be considered as a proxy for recruitment in a constituency. We interact the total deaths in a constituency between 2004 and 2014 with our main treatment variable, home constituencies of secessionist soldier deaths between 2014 and 2019. Again, the interaction does not affect our result. See Table B.6. This result suggests that our results are robust to recruitment from a constituency.

We further perform a randomisation test to assess the statistical significance of our main results. We randomly assign placebo soldier deaths to different parliamentary constituencies in our data. We then estimate the same regression using 100 different sets of placebo soldier deaths. Using this procedure, we find that more than 99% of the placebo interaction coefficients exhibit smaller t-statistics than the actual assignment. We show the entire distribution of t-statistics from this randomisation test in Figure B.1 in the Appendix. This result confirms that our findings are unlikely to be a matter of coincidence.

Though we have controlled for many socioeconomic variables and checked that the pre-treatment vote share of the treatment and control groups is almost the same, the reader might still be concerned that these constituencies are not comparable. To address this concern, we check our results within a sub-sample of constituencies, where the treatment group remains the same as before. However, the control group now consists of only those constituencies that share a physical boundary with the treatment group. In these constituencies, the exposure to soldier deaths should be still lower than the treatment group. At the same time, they are much more likely to share other unobserved characteristics of our treatment group. We present the results in Table B.7. The coefficient associated with the home constituencies of soldiers that died in secessionist conflict is still positive and significant though lower in magnitude. This lower magnitude aligns with the idea that neighbours are less exposed to the soldier deaths than the treatment group but more exposed to them than the non-neighbours.

We have used a dummy variable specification as our main specification, where treatment is defined as a parliamentary constituency with at least one soldier death in a given period. We also check our results using ln(0.001 + no. of deaths in a constituency) as the dependent variable. Our results are robust to this specification as well. See Table B.8. The coefficient is similar to our dummy variable coefficient suggesting that the second death has minimal impact on voting.

Finally, if the home constituencies of the dead soldiers display spatial proximity, our main regression's standard errors are potentially wrongly estimated. We thus also run

our regressions using Conley standard errors Conley (1999). Taking different distance levels ranging from 150 km to 600 km, we find that standard errors remain remarkably stable. See Table B.9.

2.4.4 Further results

In this sub-section, we present results that provide further evidence supporting our interpretation of the main results. One might ask how vital the media connectivity of an individual voter is in translating the soldier death into a change in voting behaviour. Since political messages reach people through media, we should find that higher media consumption increases the likelihood of political messages reaching the voter and highlighting soldier deaths and national security issues. To test this, we use our individual-level voter survey. In this survey, respondents were asked about their consumption of various news media sources like TV news, newspapers, radio news and the internet.[38] We create two measures using this survey data. First, we create a standardised measure of media consumption using the responses of the survey.[39] Second, we create a dummy measure that takes the value 1 if an individual watches news on media daily, or 4-5 times a week. Using these measures, we estimate the following regression equation:

$$\begin{aligned} Y_{i,c,s,t} = \gamma \text{Secessionist Death}_{c,s} \text{x Post}_t \text{x Media}_{i,c,s,t} + \omega_1 \text{Secessionist Death}_{c,s} \text{x Post}_t \\ + \omega_2 \text{Secessionist Death}_{c,s} \text{x Media}_{i,c,s,t} + \omega_3 \text{Post}_t \text{x Media}_{i,c,s,t} \\ + \omega_6 \text{Media}_{i,c,s,t} + \beta' X_{i,c,s,t} + \alpha_c + \alpha_t + \epsilon_{i,c,s,t} \end{aligned}$$

where 'i' is an individual survey respondent, c is the parliamentary constituency, s is the state, and 't' is the general election year. $\text{Y}_{i,c,s,t}$ is a dummy that takes the value 1 if respondent voted for NDA. Secessionist $\text{Death}_{c,s}$ is a dummy for a constituency that received a soldier death in the secessionist region between June 2014 and April 2019. Post_t takes the value 1 for GE Year 2019 and 0 otherwise. $\text{Media}_{i,c,s,t}$ is the amount of media consumption by an individual i. We also have individual level controls, including religion, employment, income, education, caste, gender, age, and urbanisation. Standard errors are clustered at the parliamentary constituency level.

Table 2.8 presents the results for the standardised measure. Different columns present the coefficient of interest for each media source. We see that TV viewers are most affected

[38] The questions are of the following form- 'How regularly do watch news on television - daily, sometimes, rarely or never?'. The respondents have to choose one of the following options: "1: Daily", "2: At least 3-4 times in a week", "3: At least once a week", "4: Never" and "8: Can't say/Don't know".

[39] $z = \frac{x-\mu}{\sigma}$

within the constituencies that received soldier deaths from secessionist regions. We also present the results using the dummy measure in Table B.10 in the Appendix. The intuition behind these results is straightforward. Given Modi's very high presence on the medium of television,[40] those who have a higher TV consumption are more likely to receive his political messages that highlight soldier deaths.[41] And hence, they are more likely to vote for Modi in case of a soldiers' death.

Given that we argue that exposure to soldier deaths makes the political messages regarding them salient in the voters' minds, salient theory predicts that soldier deaths that occurred closer to the election date should affect voting behaviour more than earlier soldier deaths. Empirical papers based on salience theory demonstrate that recent events affect choices more Colussi et al. (2021).[42] To test this, we divide the deaths based on the year they took place. We find that deaths closer to the election have a higher coefficient, with the coefficient falling over time. We report the results in 2.10.

We argue that event exposure changes voting behaviour only when these events are highlighted in political messages, so soldier deaths should not affect voting behaviour much without political messages. We saw evidence for this in Table 2.6, with LWE deaths not changing voting behaviour in any significant way in the 2019 national election. However, it can be the case that secessionist deaths affect voting behaviour even when any politician or leader does not talk about them. To test this, we look at the 2014 national election where there was negligible political messaging regarding the secessionist conflict. For example, in 2014, Narendra Modi, the challenger, focused on issues like inflation and corruption under the previous government.[43] The incumbent PM, Dr Manmohan Singh, also did not draw any attention to the secessionist conflict. Hence, we check whether soldier deaths between 2009 and 2014 affected voting behaviour in the 2014 election. We find those home constituencies of soldiers that died in the secessionist conflict did not vote differently compared to other constituencies. The results are reported in Table 2.11.

Another concern that the reader might have is that our results might capture the effect of a charismatic speaker like Modi rather than a more general effect of any leader/politician

[40] https://theprint.in/opinion/telescope/pm-modi-has-become-indias-tv-god-while-cry-baby-opposition-blamed-for-too-muc 580724/

[41] This heterogeneity analysis provides suggestive evidence that individuals with higher TV usage are more likely to vote for Modi. Individuals might be endogenously choosing TV, radio or social media for their news consumption.

[42] Tversky and Kahneman (1973) and Thaler and Sunstein (2008) also argue that recent memories are stronger and thus affect our choices more.

[43] The election manifesto of the BJP talked about national security issues on page 37 of its 42-page manifesto. See: https://www.thehindu.com/multimedia/archive/01830/BJP_election_manif_1830927a.pdf

sending a political message. Given that some politicians with better oratory or leadership skills are more effective in highlighting events than others, the effect of political messages can differ depending upon which politician is sending the message. However, it is still worth checking whether similar results hold for some other politician at a different point in time. To do that, we study the impact of Prime Minister Manmohan Singh's message in the 2014 national election. His political message heavily focused on left-wing extremism, which he called "the greatest internal security threat to our country."[44] Though he is not as good an orator as Modi, having the "bully pulpit" of the PM's office should have led to some public response because of his message.[45] Moreover, he promoted significant military as well as development plans to deal with the issue of LWE.[46] The results of this exercise are presented in Table 2.12. We find that the vote share of Singh's incumbent party (INC) increased by 3.2 p.p. in the home constituencies of soldiers who died in the LWE violence. The larger political coalition of his party (UPA) shows a larger increase.[47]

2.5 Other potential mechanisms

We have argued that exposure to soldier deaths matters because they increase the salience of political messages in voters' minds. However, it can be the case that exposure matters because it makes voters more informed. We look at whether voters exposed to soldier deaths are more informed about the Indian state's response to them: the Balakot airstrikes. To test this, we run the following regression:

$$Y_c = \gamma_1.SecessionistDeath_{c,s} + \gamma_2.LWEDeath_{c,s} + \beta' X_{c,s} + \alpha_s + \epsilon_{c,s}$$

where Y_c is based on how the survey voters responded to the following question: have you

[44] https://www.thehindu.com/news/national/Manmohan-naxalism-the-greatest-internal-threat/article16886121.ece

[45] The following article notes the difference in the speech delivering styles of the two leaders. See https://www.livemint.com/Opinion/pL6lS5224P1ShKfeIIl78J/Narendra-Modi-vs-Manmohan-Singh-A-tale-of-two-speeches.html

[46] See Integrated Action Plan launched by him, https://oneworld.net.in/focus-area/knowledge-and-research/monitoring-information-system-for-integrated-action-plan-iapmis-for-selected-tribal-and-backward-c

[47] It is worth noting that results based on survey data are not as strong for LWE deaths in the 2014 election as they are in the election commission reports. This might be because the Congress party did not make the LWE conflict an important election issue despite their PM saying otherwise. The INC election manifesto of 2014 does not discuss national security issues until page 47 of its 50-page election manifesto. We quote their manifesto on the issue of LWE here: "We will continue to address the challenge of Left Wing Extremism with a firm hand. We will strengthen the numbers, equipment and infrastructure for our security forces posted in these areas, even as we continue to pursue a development agenda to empower the people in these areas (see, https://www.thehindu.com/multimedia/archive/01813/Congress_Manifesto_1813003a.pdf)

heard about the Balakot airstrikes? Table 2.13, column 1 reports that knowledge about the airstrikes does not correlate with exposure to soldier deaths. This result is in line with the fact that soldier deaths are uninformative about the airstrikes. However, columns 2-4 indicate that greater exposure to dead soldiers who died in secessionist conflict are more likely to give more credit to Modi for the airstrikes (rather than to Air-force or both Modi and Air-force). These results are consistent with our idea that event exposure makes voters more responsive to PM Modi's message that he deserves credit for the airstrikes.[48]

However, it can still be the case that voters in constituencies with soldier deaths might be more informed about other aspects of the secessionist conflict because of differential media coverage. To explore this, we look within a single media market. We already found that it is TV viewers who are particularly moved by soldier deaths in secessionist regions and vote for the NDA (see Table B.10). Thus, we look at the biggest single TV media market in India, Uttar Pradesh. It is important to note that TV news is not decentralised below the state level in India. This state which has a population of over 200 million, has a Hindi-speaking population primarily. According to the government regulatory authority responsible for regulating TV broadcasts in India, there are nine regional news channels and around 30 national news channels broadcast in the state of UP in the Hindi language.[49] The content in all these channels is the same across all of the state. Table B.11 presents the results for running our main specification of the individual-level survey data, i.e. Equation 2.3, just for the state of Uttar Pradesh. We can see that even within the state of UP, our results hold. Individuals are more likely to vote for PM Modi's party within a single media market in-home constituencies of a soldier who died in the secessionist conflict. [50]

Though we have discussed TV media coverage, according to studies done by Columbia Journal Review, social media has become a crucial campaigning tool in recent years in India.[51] Hence, messages can circulate on social media about soldier deaths and PM Modi's response to them. Thus, we interact social media consumption[52] with our treatment. However, we find that the interaction term is not significant (see Table B.13). Overall, the results above provide suggestive evidence that it is unlikely that the change

[48]Modi explicitly asked voters to vote for Balakot airstrikes in election rallies. See the quote in the introduction of the paper.

[49]http://broadcastseva.gov.in/

[50]To complete the local media coverage analysis, we also study coverage by print media and e-newspapers. We have acquired data on a leading daily Hindi newspaper. We are analysing how news coverage differs along with different electoral constituencies. We will add those results to our paper soon.

[51]https://www.cjr.org/tow_center/India-WhatsApp-analysis-election-security.php

[52]Social media consumption is measured with the survey data. The survey question is: How often do you use the following: Facebook, Twitter, Whatsapp, Instagram, Youtube? (many times a dya, once or twice a day, some days a week, some days a month, very rarely)

in voting behaviour that we document due to exposure to soldier deaths is entirely driven by differences in informativeness amongst the voters.

Another possible reason for an increase in the vote share of Modi's party is that events such as soldier deaths and the associated speeches by the leader can make the local party cadre more active in campaigning. Previous literature in political economy notes that local campaigning does affect voting behaviour (Madestam et al., 2013). This local campaigning can indirectly affect voting rather than a direct effect that follows from a salience theory. However, results are not explained by local campaigning differences. Analysing the voter survey data illustrates that visits of party workers did not increase the effect of soldier deaths on the vote share in the 2019 election. See Table B.14 in the appendix.

It can also be the case that soldiers' deaths increased political participation in their home constituency by increasing voter turnout or other election activities like campaign contributions, election meetings, door-to-door canvassing, distributing election leaflets and processions. We report the results on election turnout in Table B.15 for the 2019 election year. We find that the home constituencies of dead soldiers did not experience differential turnout. Similarly, Table B.16 indicates that participation of voters in campaign contribution, door-to-door canvassing, distributing election leaflets did not increase in home constituencies of dead soldiers in the 2019 election. We also find that people attended fewer election meetings and processions in constituencies that received soldier deaths in secessionist regions. This result could be observed in these constituencies if people had already decided how they would vote before the local election campaign because of the soldier deaths and Modi's speeches. We find results suggesting that this can be the case (see Table B.17).

Another explanation for the 2019 election results is that Islamic fundamentalism in Kashmir is increasing the support for far-right parties in India (Abbas, 2017). As discussed in the background section, the secessionist conflict in Kashmir is linked to Islamic fundamentalism. Thus soldier deaths in Kashmir might fuel anger against Islamic fundamentalism in voters, and they might vote for the Hindu right parties. We might have wrongly classified deaths as 'secessionist' by clubbing together deaths in the Kashmir and North-East regions. However, only deaths in the Kashmir region affect voting behaviour since the secessionist conflict in the North-East region does not have an Islamic character.

To check this, we split our soldier deaths into three groups: deaths in Kashmir, in the North-East, and the LWE region. If it were just Islamic fundamentalism increasing the vote share of the BJP in India, only soldier deaths from Kashmir would matter and soldier deaths from the North-East region would not. However, we find that soldier deaths from

both Kashmir and North-East increased the vote share of the BJP and NDA in the home constituencies of dead soldiers in the 2019 general elections (See, Table B.18).

It is possible that militaristic reporting by media makes event exposure salient in voters' minds rather than the politician's message. However, in the case of India, we think it is reasonable to argue that media is passive, i.e. it follows the political message of the leader. To verify this claim, we study media coverage of different types of conflict using the GDELT data. We study the number of articles and the number of news sources covering secessionist and LWE conflict between 2009 and 2019. The purpose of this exercise is to check whether different political messages about the types of conflict affect the media coverage, controlling for the severity of the issue. Between the 2009 and 2014 period, PM Manmohan Singh focused on the LWE conflict. Thus if the media was passive, it should focus on LWE conflict more. On the other hand, between 2014 and 2019, PM Modi focused on secessionist conflict. Thus media should focus on secessionist conflict more. To check this, we run the following regression:

$$\begin{aligned} Y_{c,w} = {} & \text{Secessionist}_c + \text{Year(14-19)} + \text{Secessionist}_c \times \text{Year(14-19)} \\ & + \text{Number of Soldier Deaths}_{c,w} + \text{Goldstein Scale}_{c,w} + \alpha_w \end{aligned}$$

where $Y_{c,w}$ is the standardised measure of the number of articles or the number of sources coming from a conflict region c in a week w. The articles and sources included only report on the Secessionist conflict and LWE conflict in India. $Secessionist_c$ is a dummy that takes the value 1 if the article is about secessionist conflict region. This makes LWE conflict the base category. $Year(14-19)$ is also a dummy that takes the value 1 if the article came out between June 2014 and April 2019. Controls include the number of soldier deaths and the Goldstein scale (a measure of the severity of the conflict). We also include week fixed effects α_w.

Table 2.14 reports the result. Columns 1 and 2 report results with LWE conflict as the base category and Secessionist conflict as the dummy. In Columns 3 and 4, the base and dummy are reversed.[53] We find that controlling for the number of deaths and the Goldstein scale, there was more media coverage of LWE conflict between 2009 and 2014 compared to secessionist conflict and more media coverage of the secessionist conflict between 2014 and 2019 compared to the LWE conflict. This is evidence indicating that political messages about the types of conflict affect the media coverage controlling for the severity of the issue.

[53] Obviously, both regressions give the same result. We report both for ease of interpretation.

Finally, we discuss the case that local incumbent leaders can take advantage of soldier deaths in their respective constituencies by helping the martyr's family and increasing their media presence. This local initiative can increase their vote share, which is reflected in the party's vote share. If this was the case, then the way we interpret our results would be misleading as people are not being responsive to the message of the central leadership but instead responding to the initiatives of the local leadership. To test this, we interact our main variable of interest, soldier deaths in secessionist region times post, with a dummy that takes the value 1 if the incumbent belonged to the same party as the central leadership. The results are presented in Table B.19. We find that the local incumbent of the party in power (BJP or NDA) does not significantly increase the effect of soldier death on vote share.

2.6 Conclusion

Political persuasion matters. Leaders have used speeches and messages to persuade citizens and voters in many parts of the world at different points in time.[54] However, we only have a limited understanding of what makes voters responsive to these messages. This paper found that event exposure can make political messages more salient in the voters' minds and consequently change their voting decisions.

Using the 2019 national elections in India, we found that voters more exposed to soldier deaths in the secessionist conflict were more responsive to Modi's militaristic speeches that followed these deaths. This led to an increase in the vote share of his party in constituencies with higher exposure. We also find that soldier deaths affect voting behaviour only if there is political messaging regarding the conflict region in which they die. Thus, soldier deaths in LWE regions did not cause an increase in vote share.

Importantly, these results are valid not only for the 2019 elections. We find similar results for the 2014 national election in India. At that time, there was no political messaging regarding secessionist conflict; however, PM Singh focused on the LWE threat and took steps to deal with it. Thus, in line with our conceptual framework, we found that secessionist deaths did not affect vote share. However, the vote share of PM Singh's political coalition increased in the home constituencies of soldiers who died in the LWE. We also find that are soldier deaths close to the election have a higher impact on voting behaviour. Also, media connectivity of voters matters in translating the deaths of soldiers into votes.

[54] See many examples in this article, http://projects.leadr.msu.edu/makingmodernus/exhibits/show/the-first-modern-president/pulpit

Many times political messages and events are informative (Arceneaux, 2006). However, persuasion often works for reasons which are beyond updating of beliefs (Druckman, 2004). In this paper, we document evidence that when political messages highlight specific events, they make voters responsive to those events. However, without the political messages, the same events do not affect voting behaviour much. We think that this reference to events is vital because voters associate the event with the politician's agenda and vote for him only when a politician highlights an event. Our work contributes to enhancing the understanding of political persuasion. It also helps us understand how politicians can influence election agendas and voting behaviour, given the events and experiences of the electorate. We hope this paper motivates further research that helps us understand the behavioural underpinnings of voting behaviour.

Figure 2.1—Conflict zones in India

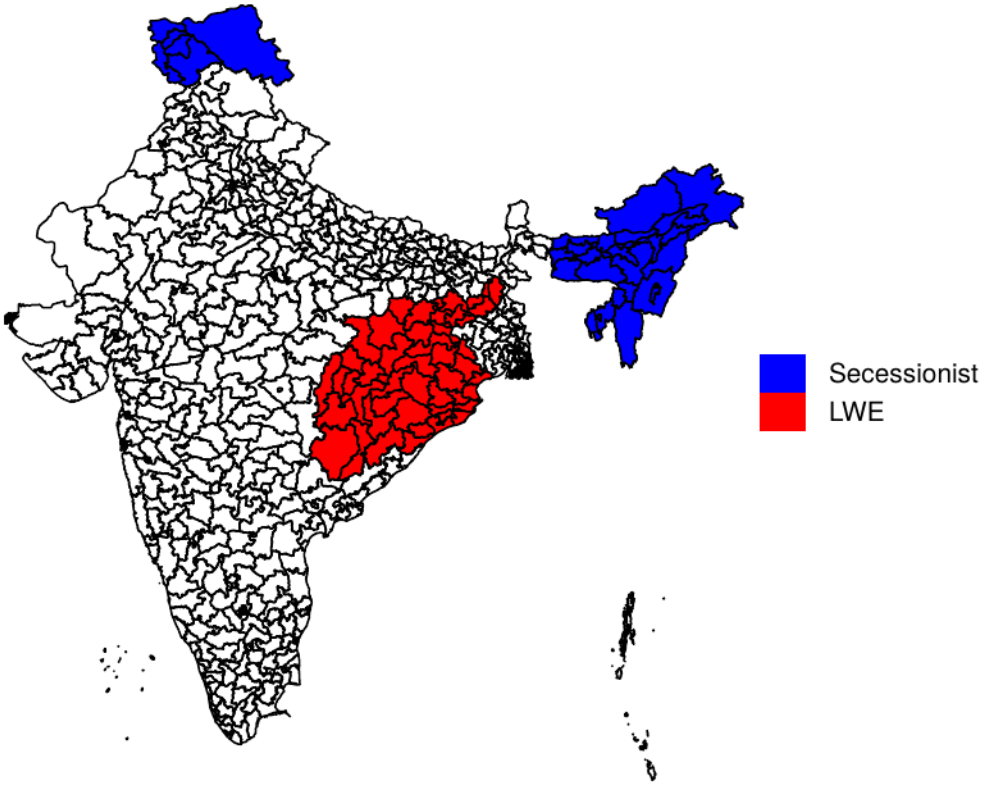

Figure 2.2—Home constituencies of dead soldiers between 2014-2019

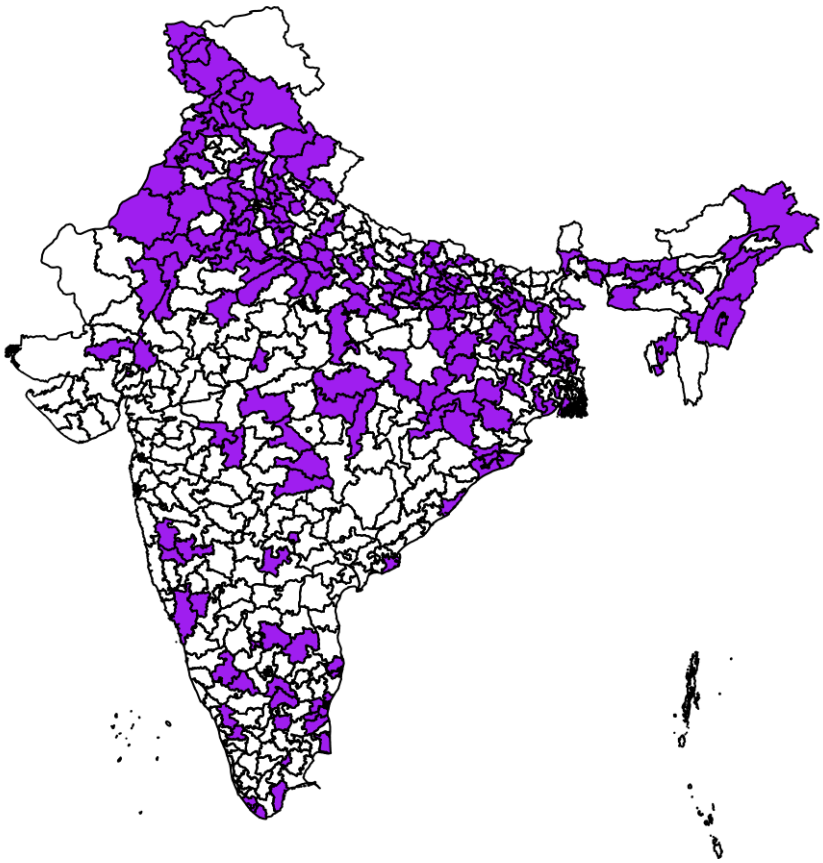

Figure 2.3—A newspaper clipping of the Pulwama attack

livemint

Army soldiers near the site of suicide bomb attack at Awantipora in Pulwama district of Jammu and Kashmir on Thursday. (S. Irfan/PTI)

44 CRPF jawans killed, 70 injured in Pulwama terror attack in J&K

3 min read . Updated: 18 Feb 2019, 11:41 PM IST

Shaswati Das

- Jaish-e-Mohammed suicide bomber rams explosives-laden SUV into CRPF convoy in Awantipora, Pulwama
- The Pulwama terror attack was the most audacious in Jammu and Kashmir in over a decade

Figure 2.4—The location of Pulwama and Balakot in South Asia

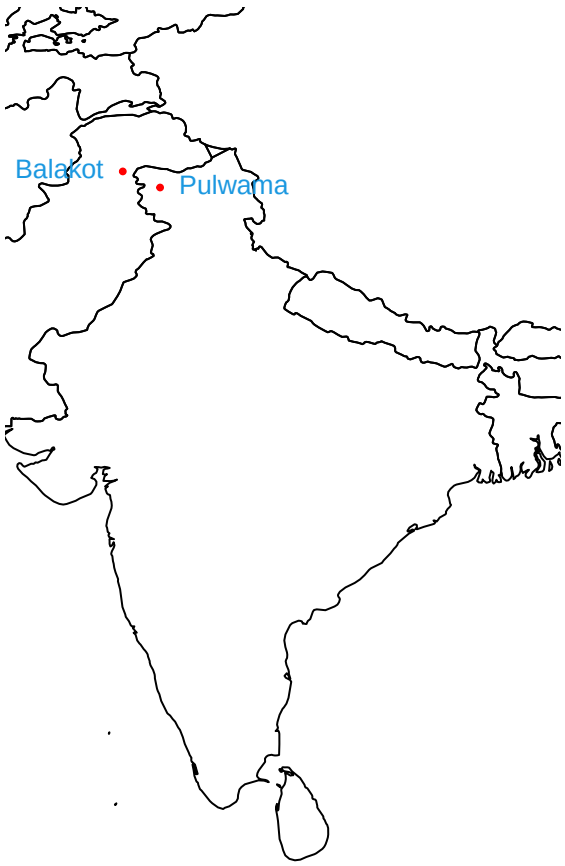

Figure 2.5—Mean vote share of NDA

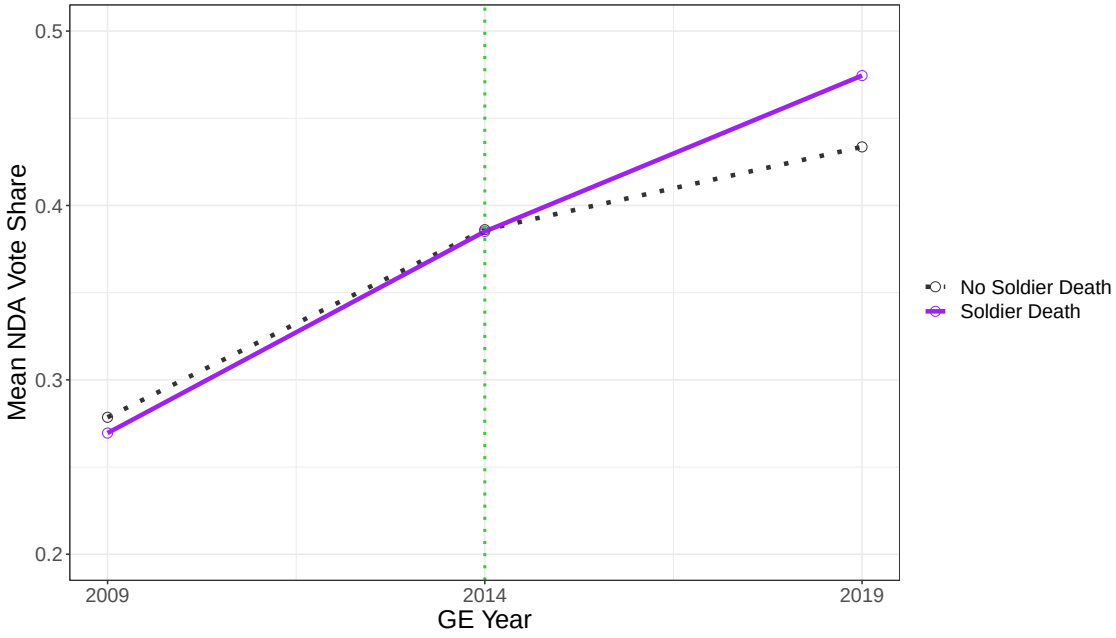

Table 2.1—Soldier deaths from 2009 - 2019

Region	National Election Time Period		Total
	2009-14	2014-19	
Secessionist	80	170	250
LWE	318	139	457
Miscellaneous	12	4	16
Total	410	313	723

Notes: The Secessionist region includes deaths of Kashmir and North-East region. LWE stands for Left Wing Extremism. The Miscellaneous region includes deaths during helicopter crashes in rescue operations, administrative duty, road accidents and rescue operations.

Table 2.2—Main result: NDA vote share

	Right Coalition Vote Share			
	(1)	(2)	(3)	(4)
Death × Post	0.044***	0.044***	0.045***	0.046***
	(0.012)	(0.012)	(0.012)	(0.011)
Death	−0.005	−0.005	−0.007	-
	(0.009)	(0.009)	(0.009)	
Post	0.102***	-	-	-
	(0.008)			
State FE	Y	Y	Y	
National election year FE		Y	Y	Y
Controls			Y	Y
Constituency FE				Y
Mean of dependent variable	0.371	0.371	0.371	0.371
Observations	1,614	1,614	1,614	1,614
R^2	0.580	0.642	0.654	0.781

Notes: Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 2.3—Balance table: Time variant socio-economic variables

	Unconditional Mean		Death × Post
	Death >= 1	Death = 0	
	(1)	(2)	(3)
Size of electorate (in millions)	1.524	1.500	−0.0143*
Mean age	41.269	41.766	0.0064
Fraction with education below class 10	0.335	0.345	0.011
Fraction with education at or above class 10	0.402	0.398	−0.0119
Fraction employed	0.601	0.618	0.0061
Fraction SC caste	0.181	0.173	0.011
Fraction ST caste	0.128	0.117	0.0008
Fraction OBC caste	0.362	0.409	−0.0096
Fraction Hindu religion	0.736	0.787	−0.012
Fraction living in rural locality	0.788	0.690	−0.0035
Mean average monthly income	9143.941	9176.494	−130.3546

Notes: The column 3 presents regression coefficient for soldier deaths. The regression includes State PC and national election year fixed effects. Standard errors are clustered at the parliamentary constituency level. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 2.4—Main result: Political spectrum

	Vote Share					
	BJP	NDA	INC	UPA	Left	Other
Death × Post	0.046***	0.046***	0.024*	0.018	−0.007	−0.061***
	(0.010)	(0.011)	(0.012)	(0.014)	(0.025)	(0.017)
National election year FE	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y
Constituency FE	Y	Y	Y	Y	Y	Y
Mean of dependent variable	0.368	0.371	0.278	0.295	0.106	0.334
Observations	1,297	1,614	1,325	1,597	699	1,582
R^2	0.888	0.781	0.784	0.626	0.820	0.740

Notes: Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 2.5—Effect of soldier deaths on Modi's speeches

	Militaristic Content Speeches	
	(1)	(2)
Secessionist Death	0.098**	0.092**
	(0.041)	(0.045)
LWE Death	0.038	0.045
	(0.046)	(0.050)
Month FE	Y	
Year FE	Y	
Month × Year FE		Y
P-value of test of treatment equality	0.351	0.511
Mean of dependent variable	0.278	0.278
Observations	790	790
R^2	0.116	0.164

Notes: LWE stands for Left Wing Extremism. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death and LWE Death. Robust standard errors are in parentheses. The fixed effects are for each month and year when the speech was delivered. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 2.6—DID - By conflict region

	Right Coalition Vote Share			
	(1)	(2)	(3)	(4)
Secessionist Death × Post	0.052***	0.051***	0.053***	0.056***
	(0.013)	(0.013)	(0.013)	(0.012)
LWE Death × Post	0.016	0.017	0.016	0.017
	(0.014)	(0.013)	(0.013)	(0.013)
Secessionist Death	−0.014	−0.013	−0.014	-
	(0.012)	(0.011)	(0.011)	
LWE Death	0.0002	−0.0005	−0.002	-
	(0.010)	(0.010)	(0.009)	
Post	0.103***	-	-	-
	(0.007)			
State FE	Y	Y	Y	
National election year FE		Y	Y	Y
Controls			Y	Y
Constituency FE				Y
P-value of test of treatment equality	0.073*	0.082*	0.067*	0.046**
Mean of dependent variable	0.371	0.371	0.371	0.371
Observations	1,614	1,614	1,614	1,614
R^2	0.580	0.642	0.655	0.781

Notes: LWE stands for Left Wing Extremism. Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death × Post and LWE Death × Post. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 2.7—Election issues: Soldier deaths: 2014 - 2019

	Secessionist	General Extremist	LWE	Don't Know
Secessionist Death × Post	0.021**	0.010	−0.001	−0.053
	(0.009)	(0.012)	(0.001)	(0.035)
LWE Death × Post	0.006	0.011	0.002	0.009
	(0.008)	(0.009)	(0.002)	(0.030)
National election year FE	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Constituency FE	Y	Y	Y	Y
P-value of test of treatment equality	0.093*	0.988	0.187	0.263
Observations	48,248	48,248	48,248	48,248
R^2	0.066	0.080	0.019	0.141

Notes: LWE stands for Left Wing Extremism. Controls: Gender, log(Age), Education level, Employment, Caste categories dummies, Religion, Urbanisation level, Income Band. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death × Post and LWE Death × Post. Standard errors are clustered at the parliamentary constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 2.8—Media results: 2014 - 2019

	Right Coalition Vote Share				
	(1)	(2)	(3)	(4)	(5)
Secessionist Death × Post	0.104***	0.101***	0.106***	0.108***	0.104***
	(0.038)	(0.038)	(0.038)	(0.038)	(0.039)
Secessionist Death × Post × TV	-	0.051***	-	-	-
		(0.017)			
Secessionist Death × Post × Newspaper	-	-	0.011	-	-
			(0.016)		
Secessionist Death × Post × Radio	-	-	-	0.010	-
				(0.020)	
Secessionist Death × Post × Internet	-	-	-	-	0.010
					(0.012)
National election year FE	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y
Constituency FE	Y	Y	Y	Y	Y
Observations	74,836	74,082	73,593	73,340	72,235
R^2	0.218	0.219	0.218	0.217	0.220

Notes: Controls: Gender, log(Age), Education level, Employment, Caste categories dummies, Religion, Urbanisation level, Income Band. Standard errors are clustered at the parliamentary constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 2.10—Timing of soldier death: Splitting by year

	Right Coalition Vote Share			
	(1)	(2)	(3)	(4)
Secessionist Death 1 Year Before Election × Post	0.084***	-	-	-
	(0.018)			
Secessionist Death More Than 1 Year × Post	0.035**	-	-	-
	(0.017)			
Secessionist Death 2 Year Before Election × Post	-	0.059***	-	-
		(0.015)		
Secessionist Death More Than 2 Year × Post	-	0.052**	-	-
		(0.023)		
Secessionist Death 3 Year Before Election × Post	-	-	0.057***	-
			(0.013)	
Secessionist Death More Than 3 Year × Post	-	-	0.054	-
			(0.045)	
Secessionist Death 4 Year Before Election × Post	-	-	-	0.057***
				(0.012)
Secessionist Death More Than 4 Year × Post	-	-	-	−0.006
				(0.067)
National election year FE	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Constituency FE	Y	Y	Y	Y
Mean of dependent variable	0.371	0.371	0.371	0.371
Observations	1,614	1,614	1,614	1,614
R^2	0.782	0.781	0.781	0.782

Notes: Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 2.11—Effect of secessionist deaths in 2014 election

	Vote Share					
	BJP	NDA	INC	UPA	Left	Other
Secessionist Death × Post	−0.026	−0.014	0.011	0.024	−0.002	−0.009
	(0.016)	(0.021)	(0.022)	(0.024)	(0.019)	(0.025)
National election year FE	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y
Constituency FE	Y	Y	Y	Y	Y	Y
Mean of dependent variable	0.368	0.371	0.278	0.295	0.106	0.334
Observations	861	1,072	904	1,063	519	1,049
R^2	0.926	0.830	0.831	0.717	0.929	0.826

Notes: Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 2.12—Diff-in-diff (Treatment period - 2014): Political spectrum

	Vote Share					
	BJP	NDA	INC	UPA	Left	Other
LWE Death × Post	0.003	0.012	0.032**	0.062***	0.006	−0.073***
	(0.011)	(0.013)	(0.015)	(0.015)	(0.016)	(0.017)
Secessionist Death × Post	−0.026	−0.016	0.006	0.013	−0.002	0.004
	(0.016)	(0.021)	(0.022)	(0.024)	(0.019)	(0.025)
National election year FE	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y
Constituency FE	Y	Y	Y	Y	Y	Y
P-value of test of treatment equality	0.159	0.28	0.36	0.108	0.767	0.447
Mean of dependent variable	0.323	0.331	0.29	0.301	0.115	0.367
Observations	861	1,072	904	1,063	519	1,049
R^2	0.926	0.830	0.833	0.726	0.929	0.832

Notes: LWE stands for Left Wing Extremism. Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death × Post and LWE Death × Post. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 2.13—Credit for air strikes: Soldier deaths: 2014 - 2019

	Heard about Strikes	Credit-Modi	Credit-AF	Credit-Both
Secessionist Death	-0.008	0.060^{**}	-0.033	-0.016
	(0.021)	(0.027)	(0.027)	(0.026)
LWE Death	0.003	-0.035^{**}	0.019	0.054^{**}
	(0.018)	(0.017)	(0.023)	(0.024)
State FE	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Observations	21,035	15,992	15,992	15,992
R^2	0.147	0.038	0.079	0.061

Notes: LWE stands for Left Wing Extremism. Controls: Gender, log(Age), Education level, Employment, Caste categories dummies, Religion, Urbanisation level, Income Band. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death and LWE Death. Standard errors are clustered at the parliamentary constituency level. The fixed effects are for each state. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 2.14—Media coverage of conflict

	STD(# Articles)	STD(# Sources)	STD(# Articles)	STD(# Sources)
Secessionist Conflict	-0.060^{***}	-0.210^{***}	-	-
	(0.015)	(0.008)		
LWE Conflict	-	-	0.060^{***}	0.210^{***}
			(0.015)	(0.008)
Secessionist Conflict $\times$ Year (14-19)	0.134^{***}	0.191^{***}	-	-
	(0.008)	(0.006)		
LWE Conflict $\times$ Year (14-19)	-	-	-0.134^{***}	-0.191^{***}
			(0.008)	(0.006)
Week-year FE	Y	Y	Y	Y
Conflict region FE	Y	Y	Y	Y
Mean of dependent variable	9.933	1.613	9.933	1.613
Observations	1,969	1,969	1,969	1,969

Notes: Number of Articles is the total number of source documents containing one or more mentions of this event. Number of Sources is the total number of information sources containing one or more mentions of this event. LWE stands for Left Wing Extremism. Standard errors are clustered at the conflict region level. The fixed effects are for each conflict region and week. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Appendix

2.7 Appendix: Model

In this section, we build a model based on Bordalo et al. (2020) to help us understand how political messages and events might interact with each other to shape public opinion. Bordalo et al. (2020) consider a consumer-choice setting where choice contexts cues agents to recall memories associated with that context. These memories, in turn, affect the agent's consumer choices.

We adapt this model to a political-economy setting. Events that voters are exposed to enter their memory bank in our model. The messages from the politician cues recall of only those events that are associated with the message. For example, in our context, Modi talking about extremist conflict in the country, and his response to attacks on soldiers cues recall of memories associated with soldier deaths. Consequently, these memories that are cued by the messages affect voters' opinions and behaviour. The model, though simple, gives testable predictions. We present the formal model below.

There are a total of J voters (1, 2...., J), and each must decide whether to vote for a politician or not ($V = 0$ or 1). In our model, an individual's decision about whom to vote for depends on the types of events they are thinking about while making this decision. There are three types of events that may take place in our economy. The first type is the soldier deaths (e_1). Without loss of generality, we assume that if voters think about soldier deaths, it casts a favourable light on the politician and his policies. In our context this is because Modi touted his aggressive response to soldier deaths. The second type of event is an event that also casts the politician in a favourable light (e_2); for example, launching welfare schemes for the poor. And, the third type of event casts the politician in an unfavourable light (e_3); for example, negative economic shocks in the country. The voter supports the politician if he spends more time thinking about positive than negative events, weighted by the importance of each type of events. Mathematically, voters supports the politician ($V = 1$) *iff* $\sum \alpha_i W_i > 0$, where W_i denotes fraction of time spent thinking about event i, $i \in \{1,2,3\}$ and $1 > \alpha_1 > 0$, $1 > \alpha_2 > 0$ and $-1 < \alpha_3 < 0$. $\frac{\alpha_2}{\alpha_1}$ represents the relative importance of other events that help the politician vis-a-vis soldier deaths.

The politician chooses which type of event to speak about, $S \in \{1,2,3\}$, to maximise

his vote share. The politician is constrained to speak on only one type of event.[55] The messages that he sends or the speeches that he makes influence what voters think about. An individual voter's W_i are influenced by the politician's speech as follows:

$$W_i = \frac{b_i}{b_1 + b_2 + b_3}$$

where each $b_i = e_i \times s_i \times m + \varepsilon_i$. e_i denotes whether the voter is exposed to the event that took place. In the simplest form, this exposure can be represented as a dummy variable, taking the value 1 if there is exposure. s_i is a dummy variable taking the value 1 only if the politician spoke about event i. m denotes the amount of media coverage of the speech. We define m to be a continuous variable distributed between 0 and 1. In our model, media is passive i.e. it always covers what the politician speaks about. We give evidence of this claim in the Indian context later.[56] For each voter j, $\varepsilon_i \sim U[0,1]$ is an idiosyncratic shock, where U is a uniform distribution. At an individual level, this can represent heterogeneity at the individual level preferences.

Notice that each voter j can differ across three dimensions in our model. She might be exposed to a particular event or not ($e_{i,j}$), she might be exposed to the media more or less (m_j), and there might be intrinsic differences in what each one thinks about ($\varepsilon_{i,j}$). Given these differences, the politician maximises his vote share by choosing a particular type of event he highlights in his speeches. We now present the first result of our model as the following lemma.

Lemma 1: The politician speaks about soldier deaths if $\alpha_1 E_1 > \alpha_2 E_2$ and event 2 otherwise, where E_i denotes the fraction of voters who experience event i.

The formal proof is given below. The intuition of the result is straightforward. The politician will never talk about the type 3 event as that will hurt his vote share. Furthermore, given that $\frac{\alpha_2}{\alpha_1}$ represents the relative importance of the other event that helps the politician vis-a-vis soldier deaths, the politician's choice depends on the relative number of people exposed to soldier deaths as opposed to the ones exposed to an event of type 2. If the relative number of people exposed to soldier deaths is high, then talking about soldier deaths makes relatively more voters think about an issue that maximises his vote share.

Proof: Lemma 1

[55] This model trivially extends to n types of events and politician constrained to speak about m events, such that m < n. All the results that follow will still hold.

[56] See section 2.5 for details.

The politician wants to maximise his vote share i.e.

$$\sum [\sum \alpha_i W_i > 0]$$

under the constraint that he can speak about only one kind of event $S \in \{1, 2, 3\}$.

Let E_i be the fraction of voters who received event e_i.

His vote share if speaks about e_1 i.e. $s_1 = 1$, s_2 and $s_3 = 0$

$$= E_1 \left[\alpha_1 \frac{m \times e_1 \times s_1 + \varepsilon_1}{D} + \alpha_2 \frac{\varepsilon_2}{D} + \alpha_3 \frac{\varepsilon_3}{D} > 0 \right] + (1 - E_1) \left[\alpha_1 \frac{\varepsilon_1}{D} + \alpha_2 \frac{\varepsilon_2}{D} + \alpha_3 \frac{\varepsilon_3}{D} > 0 \right]$$

where $D = m + \varepsilon_1 + \varepsilon_2 + \varepsilon_3$.

His vote share if speaks about e_2 i.e. $s_2 = 1$, s_1 and $s_3 = 0$

$$= E_2 \left[\alpha_1 \frac{\varepsilon_1}{D} + \alpha_2 \frac{m \times e_2 \times s_2 + \varepsilon_2}{D} + \alpha_3 \frac{\varepsilon_3}{D} > 0 \right] + (1 - E_2) \left[\alpha_1 \frac{\varepsilon_1}{D} + \alpha_2 \frac{\varepsilon_2}{D} + \alpha_3 \frac{\varepsilon_3}{D} > 0 \right]$$

where $D = m + \varepsilon_1 + \varepsilon_2 + \varepsilon_3$.

Given $\varepsilon_i \sim U[0, 1]$, and given the politician wants to maximise his vote share, he speaks about soldier deaths (e_1) if and only *iff* $\alpha_1 E_1 > \alpha_2 E_2$.

Q.E.D.

The next proposition is the main result of the model.

Proposition 1: If a politician discusses soldier deaths $(S = 1)$,
(1) Voters exposed to soldier deaths ($e_1 = 1$) are more likely to support the politician than voters not exposed ($e_1 = 0$).

(2) The likelihood a voter supports the politician does not depend upon exposure to events 2 and 3 (e_2, e_3).[57]

[57]The result above follows because of the particular functional form. This assumes that a voter only

(3) Voters exposed to soldier deaths ($e_1 = 1$) are more likely to support the politician if they consume more media (m is greater).

The proof is given below. Here we discuss the intuition of the results. To understand part 1 of the proposition, notice that the politician is discussing soldier deaths in his speeches, and hence memories of soldier deaths are recalled in the voters' minds. It is this memory that makes a voter more likely to vote for the politician. However, only voters exposed to the soldier deaths have the required event in their memory bank; thus, they are more likely to vote for the politician.

Part 2 of the proposition sheds light on a crucial aspect of the model. Given that we have a single politician in the model and that politician is speaking, in the case we consider, about soldier deaths, the memories of other events (e_2 and e_3) are not recalled in the voters' minds. Given that this memory is not recalled, the exposure to these events becomes insignificant because even exposed voters are not more likely to think about them when making voting decisions.

Part 3 of the proposition follows because the politicians' messages reach the voters through some form of media in our model. Hence, if voters consume more media, they are likely to be reminded of soldier deaths. Since they change voting behaviour only if the memory of soldier death is recalled, the likelihood of supporting the politician increases if they consume more media.

Proof: Part (i) of proposition 1

Suppose voter x is exposed to soldier death ($e_1 = 1$) and voter y is not ($e_1 = 0$).

To prove : $P_x(V = 1) = P_x(\sum \alpha_i W_i > 0) > P_y(\sum \alpha_i W_i > 0) = P_y(V = 1)$

Take LHS, given $S = 1$ and $e_1 = 1$, we get

$$P_x(\sum \alpha_i W_i > 0) = P(\alpha_1 \frac{m + \varepsilon_1}{D_x} + \alpha_2 \frac{\varepsilon_2}{D_x} + \alpha_3 \frac{\varepsilon_3}{D_x} > 0)$$

where $D_x = m + \varepsilon_1 + \varepsilon_2 + \varepsilon_3$

cues own experience (event exposure) only when reminded by the politician. In general, voter can cue his own personal experience without the political messages as well. But the general argument of our paper is that because of vast experiences of each individual, memories of particular events are *more likely* to be cued if there are political messages about them. This particular functional form is just for simplicity.

Take RHS, given $S = 1$ and e_1 = 0, we get

$$P_y(\sum \alpha_i W_i > 0) = P(\alpha_1 \frac{\varepsilon_1}{D_y} + \alpha_2 \frac{\varepsilon_2}{D_y} + \alpha_3 \frac{\varepsilon_3}{D_y} > 0)$$

where $D_y = m + \varepsilon_1 + \varepsilon_2 + \varepsilon_3$

Given $m > 0$ and $-1 < \alpha_i < 1 \; \forall i$, $P_x > P_y$.

Q.E.D.

Proof: Part (ii) of proposition 1

Suppose voter x is exposed to the event e_2 and voter y is not.

Also, $S = 1$

To prove: $P_x(V = 1) = P_x(\sum \alpha_i W_i > 0) = P_y(\sum \alpha_i W_i > 0) = P_y(V = 1)$

Take LHS, we know $e_2 = 1$, but given $S = 1$, we have $s_2 = 0$

Thus,

$$P_x(\sum \alpha_i W_i > 0) = P(\alpha_1 \frac{\varepsilon_1}{D} + \alpha_2 \frac{\varepsilon_2}{D} + \alpha_3 \frac{\varepsilon_3}{D} > 0)$$

where $D = \varepsilon_1 + \varepsilon_2 + \varepsilon_3$

Take RHS, we know $e_2 = 0$

Thus,

$$P_y(\sum \alpha_i W_i > 0) = P(\alpha_1 \frac{\varepsilon_1}{D} + \alpha_2 \frac{\varepsilon_2}{D} + \alpha_3 \frac{\varepsilon_3}{D} > 0)$$

where $D = \varepsilon_1 + \varepsilon_2 + \varepsilon_3$

Hence, LHS = RHS.

Proof: Part (iii) of proposition 1

Suppose both voter x and y are exposed to soldier death ($e_1 = 1$).

W.L.O.G., let $m_x > m_y$.

To prove: $P_x(V=1) = P_x(\sum \alpha_i W_i > 0) > P_y(\sum \alpha_i W_i > 0) = P_y(V=1)$

Take LHS, given $S = 1$ and e_1 = 1, we get

$$P_x(\sum \alpha_i W_i > 0) = P(\alpha_1 \frac{m_x + \varepsilon_1}{D_x} + \alpha_2 \frac{\varepsilon_2}{D_x} + \alpha_3 \frac{\varepsilon_3}{D_x} > 0)$$

where $D_x = m_x + \varepsilon_1 + \varepsilon_2 + \varepsilon_3$

Take RHS, given $S = 1$ and e_1 = 1, we get

$$P_y(\alpha_1 \frac{m_y + \varepsilon_1}{D_y} + \alpha_2 \frac{\varepsilon_2}{D_y} + \alpha_3 \frac{\varepsilon_3}{D_y} > 0)$$

where $D_y = m_y + \varepsilon_1 + \varepsilon_2 + \varepsilon_3$

Given $m_x > m_y$ and $-1 < \alpha_i < 1 \; \forall i$, $P_x > P_y$.

Q.E.D.

Now we present a result that is a corollary of proposition 1. It discusses how much soldier deaths matter in our model when the politician does not discuss them.

Corollary 1: If a politician does not discuss soldier deaths ($S = 2$), the likelihood a voter supports the politician does not depend upon exposure to soldier deaths (e_1).

The intuition behind Corollary 1 is the same as the intuition behind part 2 of proposition 1. If the politician does not discuss soldier deaths, then even the voters exposed to soldier deaths do not recall the memory of these soldier deaths when making voting decisions and hence do not change their voting behaviour. The formal proof is in appendix 2.7.

Proof: Corollary 1

Suppose voter x was exposed to soldier death ($e_1 = 1$) and voter y did not ($e_1 = 0$).

Also, S = 2.

To prove : $P_x(V=1) = P_x(\sum \alpha_i W_i > 0) = P_y(\sum \alpha_i W_i > 0) = P_y(V=1)$

Take LHS, we know $e_1 = 1$, but given $S = 2$, $s_1 = 0$ and $s_3 = 0$.

Thus we get,

$$P_x(\sum \alpha_i W_i > 0) = P(\alpha_1 \frac{\varepsilon_1}{D} + \alpha_2 \frac{e_2 \text{ x } m + \varepsilon_2}{D} + \alpha_3 \frac{\varepsilon_3}{D} > 0)$$

where $D = \varepsilon_1 + \varepsilon_2 + e_2 \text{ x } m + \varepsilon_3$

Take RHS, we know $e_1 = 0$, and given $S = 2$, $s_3 = 0$.

Thus we get,

$$P_y(\sum \alpha_i W_i > 0) = P(\alpha_1 \frac{\varepsilon_1}{D} + \alpha_2 \frac{e_2 \text{ x } m + \varepsilon_2}{D} + \alpha_3 \frac{\varepsilon_3}{D} > 0)$$

where $D = \varepsilon_1 + \varepsilon_2 + e_2 \text{ x } m + \varepsilon_3$.

Hence, LHS = RHS.

2.8 Appendix: Tables and Figures

Figure B.1—Simulation of random assignment of treatment

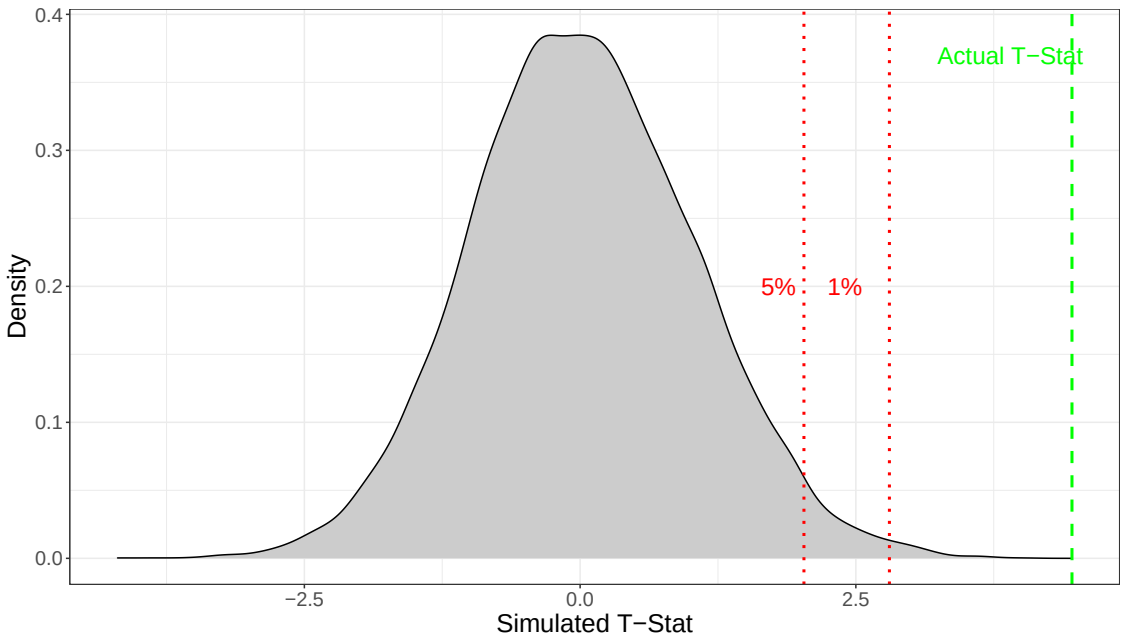

Figure B.2—UPA vote share pre-trend

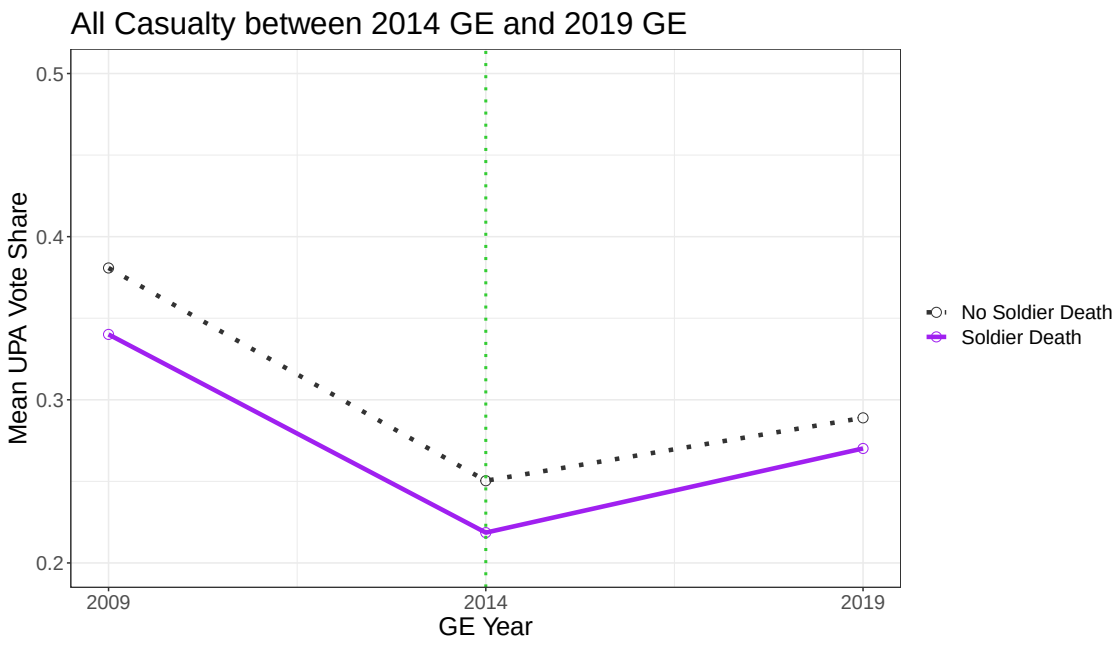

Table B.1—Parties decision to contest

	Contesting Seats		
	BJP	INC	Left
Death × Post	0.034	0.029	0.056
	(0.025)	(0.032)	(0.040)
National election year FE	Y	Y	Y
Controls	Y	Y	Y
Constituency FE	Y	Y	Y
Mean of dependent variable	0.8	0.81	0.43
Observations	1,629	1,629	1,629
R^2	0.716	0.598	0.631

Notes: Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.2—Individual level survey (Treatment: Soldier deaths between 2014 - 2019)

	Right Vote Share			
	BJP		NDA	
	(1)	(2)	(3)	(4)
Secessionist Death × Post	0.093**	0.079**	0.117***	0.104***
	(0.040)	(0.040)	(0.038)	(0.038)
LWE Death × Post	0.011	0.013	0.009	0.010
	(0.035)	(0.034)	(0.037)	(0.036)
National election year FE	Y	Y	Y	Y
Controls		Y		Y
Constituency FE	Y	Y	Y	Y
P-value of test of treatment equality	0.143	0.246	0.056*	0.099*
Observations	78,161	74,836	78,161	74,836
R^2	0.244	0.277	0.182	0.218

Notes: LWE stands for Left Wing Extremism. Controls: Gender, log(Age), Education level, Employment, Caste categories dummies, Religion, Urbanisation level, Income Band. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death × Post and LWE Death × Post. Standard errors are clustered at the parliamentary constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.3—Heterogeneity by share of SC caste category
Soldier death period: 2014 - 2019

	Vote Share	
	Right (BJP)	Right to Centre - Right (NDA)
Secessionist Casualty × Post	0.092***	0.089**
	(0.030)	(0.035)
LWE Casualty × Post	−0.015	−0.011
	(0.026)	(0.034)
Secessionist Casualty × Post × Share SC Population	−0.273*	−0.241
	(0.162)	(0.194)
LWE Casualty × Post × Share SC Population	0.146	0.141
	(0.143)	(0.191)
National election year FE	Y	Y
Controls	Y	Y
Constituency FE	Y	Y
P-value of test of treatment equality	0.023**	0.076*
Mean of dependent variable	0.368	0.371
Observations	1,297	1,614
R^2	0.897	0.787

Notes: LWE stands for Left Wing Extremism. Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death × Post and LWE Death × Post. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.4—Backward treatment placebo regression: Assignment of deaths to the past general election

	Right Wing Vote Share	
	(1)	(2)
Death	−0.002	-
	(0.008)	
Secessionist Death	-	−0.006
		(0.008)
LWE Death	-	0.0001
		(0.008)
National election year FE	Y	Y
Controls	Y	Y
Constituency FE	Y	Y
Mean of dependent variable	0.371	0.371
Observations	1,614	1,614
R^2	0.777	0.777

Notes: LWE stands for Left Wing Extremism. Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.5—Forward placebo
Assignment of treatment to next election

	Vote Share			
	BJP	NDA	INC	UPA
Secessionist Death Placebo × Post	0.016	0.020	0.012	−0.002
	(0.017)	(0.019)	(0.017)	(0.019)
LWE Death Placebo × Post	0.012	0.015	0.014	0.012
	(0.011)	(0.012)	(0.011)	(0.013)
National election year FE	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Constituency FE	Y	Y	Y	Y
P-value of test of treatment equality	0.83	0.843	0.953	0.546
Mean of dependent variable	0.37	0.37	0.28	0.3
Observations	1,297	1,614	1,325	1,597
R^2	0.885	0.778	0.783	0.626

Notes: LWE stands for Left Wing Extremism. Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death Placebo × Post and LWE Death Placebo × Post. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.6—Interaction: Total deaths in the constituency between 2004-2014

	Vote Share	
	Right BJP	Right to Centre - Right NDA
Secessionist Casualty × Post	0.053***	0.047***
	(0.016)	(0.017)
LWE Casualty × Post	0.026	0.033*
	(0.018)	(0.019)
Secessionist Casualty × Post × Total Casualty	0.002	0.002
	(0.005)	(0.005)
LWE Casualty × Post × Total Casualty	−0.007*	−0.009*
	(0.004)	(0.005)
National election year FE	Y	Y
Controls	Y	Y
Constituency FE	Y	Y
P-value of test of treatment equality	0.306	0.616
Mean of dependent variable	0.37	0.37
Observations	1,297	1,614
R^2	0.889	0.782

Notes: LWE stands for Left Wing Extremism. Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death × Post and LWE Death × Post. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.7—Sub-sample of only neighbouring constituencies as controls

	Right Coalition Vote Share			
	(1)	(2)	(3)	(4)
Secessionist Death × Post	0.031**	0.031**	0.033**	0.035***
	(0.013)	(0.013)	(0.013)	(0.013)
LWE Death × Post	−0.004	−0.003	−0.003	−0.003
	(0.014)	(0.014)	(0.014)	(0.013)
State FE	Y	Y	Y	
National election year FE		Y	Y	Y
Controls			Y	Y
Constituency FE				Y
P-value of test of treatment equality	0.078*	0.087*	0.073*	0.052*
Mean of dependent variable	0.369	0.369	0.369	0.369
Observations	1,264	1,264	1,264	1,264
R^2	0.568	0.627	0.644	0.786

Notes: LWE stands for Left Wing Extremism. Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death × Post and LWE Death × Post. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.8—Dependent variable: ln(0.001 + number of deaths)

	Vote Share			
	Right (BJP)	Right to Centre - Right (NDA)	Centre - Left (INC)	(UPA)
ln(# Secessionist Casualty)	−0.0002	0.0001	−0.0016*	−0.0024**
	(0.0009)	(0.0011)	(0.0010)	(0.0011)
ln(# LWE Casualty)	0.0006	0.0005	0.0003	0.0004
	(0.0007)	(0.0008)	(0.0009)	(0.0010)
ln(# Secessionist Casualty) × Post	0.0056***	0.0051***	0.0008	0.0011
	(0.0013)	(0.0015)	(0.0015)	(0.0017)
ln(# LWE Casualty) × Post	0.0004	0.0011	0.0020	0.0017
	(0.0012)	(0.0014)	(0.0016)	(0.0017)
National election year FE	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Constituency FE	Y	Y	Y	Y
P-value of test of treatment equality	0.013**	0.86*	0.648	0.832
Mean dependent variable	0.368	0.371	0.278	0.295
Observations	1,297	1,614	1,325	1,597
R^2	0.8888	0.7816	0.7843	0.6279

Notes: LWE stands for Left Wing Extremism. Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of ln(# Secessionist Casualty) × Post and ln(# LWE Casualty) × Post. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.9—Conley standard errors

	Right Coalition Vote Share				
	Clustered Standard Errors	Conley Standard Errors			
		150 kms	250 kms	400 kms	600 kms
Secessionist Death × Post	0.056***	0.056***	0.056***	0.056***	0.056***
	(0.012)	(0.014)	(0.017)	(0.020)	(0.020)
LWE Death × Post	0.017	0.017	0.017	0.017	0.017
	(0.013)	(0.010)	(0.012)	(0.014)	(0.014)
National election year FE	Y	Y	Y	Y	Y
Constituency FE	Y	Y	Y	Y	Y
Mean of dependent variable	0.37	0.37	0.37	0.37	0.37
Observations	1,614	1,614	1,614	1,614	1,614

Notes: LWE stands for Left Wing Extremism. Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.10—Media results (Dummy variable): Soldier deaths (2014 - 2019)

	Right Coalition Vote Share				
	(1)	(2)	(3)	(4)	(5)
Secessionist Death × Post	0.104***	0.042	0.097**	0.105***	0.102***
	(0.038)	(0.042)	(0.041)	(0.039)	(0.038)
Secessionist Death × Post × TV Dummy	-	0.096***	-	-	-
		(0.031)			
Secessionist Death × Post × Newspaper Dummy	-	-	0.023	-	-
			(0.029)		
Secessionist Death × Post × Radio Dummy	-	-	-	0.002	-
				(0.045)	
Secessionist Death × Post × Internet Dummy	-	-	-	-	0.033
					(0.037)
National election year FE	Y	Y	Y	Y	Y
Constituency FE	Y	Y	Y	Y	Y
Observations	74,836	74,082	73,593	73,340	72,235
R^2	0.218	0.219	0.218	0.217	0.220

Notes: LWE stands for Left Wing Extremism. Controls: Gender, log(Age), Education level, Employment, Caste categories dummies, Religion, Urbanisation level, Income Band. Standard errors are clustered at the parliamentary constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.11—DID for Uttar Pradesh: Soldier death (2014 - 2019)

	BJP Vote Share	
	(1)	(2)
Secessionist Death × Post	0.196**	0.168**
	(0.077)	(0.070)
LWE Death × Post	−0.118	−0.116*
	(0.072)	(0.063)
National election year FE	Y	Y
Controls		Y
Constituency FE	Y	Y
P-value of test of treatment equality	0.000***	0.000***
Observations	7,606	7,252
R^2	0.143	0.285

Notes: LWE stands for Left Wing Extremism. Controls: Gender, log(Age), Education level, Employment, Caste categories dummies, Religion, Urbanisation level, Income Band. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death × Post and LWE Death × Post. Standard errors are clustered at the parliamentary constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.12—Robustness: Dropping Uttar Pradesh

	NDA Vote Share	
	(1)	(2)
Secessionist Death × Post	0.105***	0.094**
	(0.041)	(0.041)
LWE Death × Post	0.025	0.028
	(0.040)	(0.039)
National election year FE	Y	Y
Controls		Y
Constituency FE	Y	Y
P-value of test of treatment equality	0.19	0.292
Observations	70,555	67,584
R^2	0.189	0.217

Notes: LWE stands for Left Wing Extremism. Controls: Gender, log(Age), Education level, Employment, Caste categories dummies, Religion, Urbanisation level, Income Band. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death × Post and LWE Death × Post. Standard errors are clustered at the parliamentary constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.13—Social media: Soldier deaths (2014 - 2019)

	Right Coalition Vote Share			
	(1)	(2)	(3)	(4)
Secessionist Death	0.138***	0.125***	0.129***	0.131***
	(0.035)	(0.040)	(0.039)	(0.037)
Secessionist Death × WhatsApp	-	0.012	-	-
		(0.010)		
Secessionist Death × Facebook	-	-	0.009	-
			(0.010)	
Secessionist Death × Twitter	-	-	-	0.021
				(0.019)
Controls	Y	Y	Y	Y
Observations	19,248	18,232	18,285	18,090
R^2	0.100	0.100	0.100	0.101

Notes: Controls: Gender, log(Age), Education level, Employment, Caste categories dummies, Religion, Urbanisation level, Income Band. Standard errors are clustered at the parliamentary constituency level. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.14—Visit party worker: Soldier deaths: 2014 - 2019

	Right Coalition Vote Share (2019)	
	(1)	(2)
Secessionist Death × Post	0.104***	0.114**
	(0.038)	(0.047)
LWE Death × Post	0.010	0.017
	(0.036)	(0.045)
Secessionist Death × Post × Visit Party Worker	-	−0.030
		(0.039)
LWE Death × Post × Visit Party Worker	-	−0.016
		(0.039)
National election year FE	Y	Y
Constituency FE	Y	Y
P-value of test of treatment equality	0.099*	0.147
Observations	74,836	74,836
R^2	0.218	0.218

Notes: LWE stands for Left Wing Extremism. Controls: Gender, log(Age), Education level, Employment, Caste categories dummies, Religion, Urbanisation level, Income Band. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death × Post and LWE Death × Post. Standard errors are clustered at the parliamentary constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.15—Turnout (Voter survey): Soldier deaths (2014 and 2019 election)

	Did You Vote Dummy	
	(1)	(2)
Secessionist Death 2019 × Post	0.003	-
	(0.018)	
LWE Death 2019 × Post	0.007	-
	(0.016)	
Secessionist Death 2014 × Post	-	−0.024
		(0.017)
LWE Death 2014 × Post	-	0.024
		(0.015)
National election year FE	Y	Y
Controls	Y	Y
Constituency FE	Y	Y
P-value of test of treatment equality	0.872	0.058*
Observations	78,499	57,464
R^2	0.083	0.086

Notes: LWE stands for Left Wing Extremism. Controls: Gender, log(Age), Education level, Employment, Caste categories dummies, Religion, Urbanisation level, Income Band. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death × Post and LWE Death × Post for the first regression and Secessionist Death 2014 × Post and LWE Death 2014 × Post for the second regression. Standard errors are clustered at the parliamentary constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.16—Election activity: Soldier deaths: 2014 - 2019

	Attend Meeting	Contribute/ Collect Money	Door-to-Door Canvassing	Distribute Leaflet	Join Procession
Secessionist Death × Post	−0.057**	−0.013	−0.040*	−0.021	−0.054**
	(0.026)	(0.012)	(0.022)	(0.021)	(0.022)
LWE Death × Post	0.008	−0.012	−0.005	−0.023	0.024
	(0.032)	(0.015)	(0.023)	(0.022)	(0.023)
Controls	Y	Y	Y	Y	Y
Constituency FE	Y	Y	Y	Y	Y
Observations	78,229	42,310	42,381	42,314	78,162
R^2	0.137	0.089	0.127	0.119	0.102

Notes: LWE stands for Left Wing Extremism. Controls: Gender, log(Age), Education level, Employment, Caste categories dummies, Religion, Urbanisation level, Income Band. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death × Post and LWE Death × Post. Standard errors are clustered at the parliamentary constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.17—When decided vote: Soldier deaths: 2014 - 2019

	Polling Day	Few Days Before Polling	During Campaign	Before Campaign
Secessionist Death × Post	−0.004	0.019	−0.065**	−0.069*
	(0.020)	(0.019)	(0.032)	(0.037)
LWE Death × Post	0.016	0.025	−0.032	−0.003
	(0.025)	(0.019)	(0.035)	(0.038)
National election year FE	Y	Y	Y	Y
Controls	Y	Y	Y	Y
Constituency FE	Y	Y	Y	Y
P-value of test of treatment equality	0.184	0.571	0.851	0.508
Observations	68,857	68,857	68,857	68,857
R^2	0.100	0.087	0.112	0.134

Notes: LWE stands for Left Wing Extremism. Controls: Gender, log(Age), Education level, Employment, Caste categories dummies, Religion, Urbanisation level, Income Band. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death × Post and LWE Death × Post. Standard errors are clustered at the parliamentary constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.18—Splitting secessionist conflict: Soldier death period (2014 - 2019)

	Vote Share				
	Right	Right to Centre - Right	Centre - Left		Left
	BJP	NDA	INC	UPA	
Kashmir Death × Post	0.047***	0.049***	−0.003	−0.001	0.003
	(0.011)	(0.012)	(0.014)	(0.016)	(0.025)
North East Death × Post	0.057***	0.054**	−0.020	−0.030	−0.060
	(0.020)	(0.024)	(0.022)	(0.024)	(0.043)
LWE Death × Post	0.005	0.013	0.027*	0.026	0.037
	(0.012)	(0.014)	(0.016)	(0.017)	(0.031)
National election year FE	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y
Constituency FE	Y	Y	Y	Y	Y
Mean of dependent variable	0.368	0.371	0.278	0.295	0.106
Observations	1,297	1,614	1,325	1,597	699
R^2	0.889	0.782	0.784	0.627	0.823

Notes: LWE stands for Left Wing Extremism. Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.19—Heterogeneity by local incumbent: Soldier death (2014 - 2019)

	Vote Share	
	Right BJP	Right to Centre - Right NDA
Secessionist Casualty × Post	0.057**	0.084***
	(0.027)	(0.028)
LWE Casualty × Post	0.049*	0.040
	(0.025)	(0.032)
Secessionist Casualty × Post × NDA Incumbent 2014	0.008	−0.042
	(0.029)	(0.031)
LWE Casualty × Post × NDA Incumbent 2014	−0.053*	−0.034
	(0.028)	(0.034)
National election year FE	Y	Y
Controls	Y	Y
Constituency FE	Y	Y
P-value of test of treatment equality	0.847	0.34
Mean of dependent variable	0.368	0.371
Observations	1,297	1,614
R^2	0.891	0.782

Notes: LWE stands for Left Wing Extremism. Controls: log(Mean Night Lights), log(Electorate Size), log(Distance to Kashmir Conflict), log(Distance to Maoist Conflict), log(Distance to North-East Conflict), Share of SC Population and Share of ST Population. P-value of test of treatment equality is the Wald test to check the equality between the coefficients of Secessionist Death × Post and LWE Death × Post. Standard errors are clustered at the constituency level. The fixed effects are for each parliamentary constituency and national election year. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.20—Media coverage of conflict

	IHS(# Articles)	IHS(# Sources)	IHS(# Articles)	IHS(# Sources)
Secessionist Conflict	−0.047***	−0.093***	-	-
	(0.004)	(0.006)		
LWE Conflict	-	-	0.047***	0.093***
			(0.004)	(0.006)
Secessionist Conflict × Year (14-19)	0.229***	0.147***		
	(0.0003)	(0.003)	-	-
LWE Conflict × Year (14-19)	-	-	−0.229***	−0.147***
			(0.0003)	(0.003)
Week-year FE	Y	Y	Y	Y
Conflict region FE	Y	Y	Y	Y
Mean of dependent variable	9.933	1.613	9.933	1.613
Observations	1,969	1,969	1,969	1,969

Notes: Number of Articles is the total number of source documents containing one or more mentions of this event. Number of Sources is the total number of information sources containing one or more mentions of this event. LWE stands for Left Wing Extremism. Standard errors are clustered at the conflict region level. The fixed effects are for each conflict region and week. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table B.21—Soldier deaths from 2009 - 2019

Region	National Election Time Period		Total
	2009-14	2014-19	
Kashmir	43	130	173
North-East	37	40	77
LWE	318	139	457
Miscellaneous	12	4	16
Total	410	313	723

Notes: The Secessionist region includes deaths of Kashmir and North-East region. LWE stands for Left Wing Extremism. The Miscellaneous region includes deaths during helicopter crashes in rescue operations, administrative duty, road accidents and rescue operations.

Chapter 3

Behavioral Voters in a Decentralized Democracy

Joint with Vimal Balasubramaniam[1] and Sabyasachi Das[2]

[1]Queen Mary University of London, UK
[2]Ashoka University, India

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3.1 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; Granzier, Pons, and Tricaud, 2019), suffer from self-control problems (Bisin, Lizzeri, and Yariv, 2015), are overconfident (Ortoleva and Snowberg, 2015) and inattentive to information (Matějka and Tabellini, 2021), among other shortcomings. The presence of such "behavioral" voters can lead to outcomes that depart from the predictions of the canonical rational voter models.[3] 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. Almost all democracies today, however, are decentralized, i.e., they have multiple elections for different tiers of governments. 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. Voters have to follow separate decision-making processes for each election, focussing on the relevant information for each tier. Additionally, the volume of information to be acquired is also higher in presence of multiple elections, increasing the cognitive cost. 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 its economic foundations (Lockwood, 2002; Tiebout, 1956) and its impact on improving 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 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.

In this paper, we attempt to empirically establish the importance of cognitive costs during voting across elections by demonstrating its implications for voter behavior and electoral

[3]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).

outcomes. We use the *timing* of elections for different tiers, i.e., whether held simultaneously or sequentially, to detect the presence of such cognitive costs and estimate its effects.[4] Several papers (e.g. Cantoni et al., 2021) document the consequence of holding elections concurrently for electoral outcomes in the US and Europe. In all such contexts, elections, when held simultaneously, experience large changes in turnout compared to when these elections are held at different times. For example, during Presidential elections in the US, turnout is about 15-20 percentage points higher than in midterm elections. The context that we examine, on the other hand, involve marginal changes in turnout (or voter composition) during simultaneous elections, enabling us to focus on voter behavior and its consequences.[5] Additionally, the simultaneity of elections in our context increases the number of voting choices from one to two. This is unlike other contexts such as the US, where voters typically vote for several electoral and judicial positions and individual ballot items such as increasing the minimum wage, which can lead to "choice fatigue" (Augenblick and Nicholson, 2016). In our context, such concerns are unlikely, allowing us to isolate our mechanism.

Implementation of our proposed empirical strategy has several challenges. First, there is a need for variation in electoral cycles that generate simultaneous and sequential elections. Western democracies have a more regular cycle preventing variation in the synchronization status of elections for a given region. Second, where such variation is available, the nature of elections that are synchronized have clear hierarchies of importance where arguably local (say, mayoral) elections do not hold as much importance as presidential elections, leading to large coattail effects. Third, in many contexts, voters make decisions on a long list of ballot items making the possibility of choice fatigue real.

We examine our question in the context of Indian national and state elections by comparing them when the elections are held simultaneously and when they are held sequentially. The Indian context and data provide us with an ideal setting to study these phenomena. 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. Moreover, both national and state elections in India are high stakes and, hence, have similar levels of turnout when held separately as well as simultaneously. Both of these elections have been shown to have a large welfare impact on the voters (Kjelsrud et al., 2020; Clots-Figueras, 2011; Keefer and Khemani, 2009). Voters

[4] Voting behavior in simultaneous elections can change for rational reasons as well. For example, if the preferences regarding candidates are non-separable across elections (or tiers), then the simultaneity of elections would affect optimal voting strategy (Ahn and Oliveros, 2012). We do not find these considerations to be the main drivers of the results in our context.

[5] We show that voter turnout and composition changes during simultaneous elections in our context are muted and they do not drive our main results.

are also heavily invested in the electoral outcomes of state assembly elections (Zimmermann, 2020), along with the national elections. Finally, as pointed out above, choice fatigue is unlikely to be a concern in the Indian context.

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. A PC contains several ACs, and a single PC subsumes any AC.[6] 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 get closer to a causal interpretation of our findings.

We compile a 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. The post-poll surveys are high-quality sources of information that academics and policymakers use to understand voting patterns in Indian context (Banerjee, Gethin, and Piketty, 2019; Varshney, 2019). We first 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. This indicates that voters change the way they make decisions during simultaneous elections, suggesting importance of cognitive costs. Consistent with party becoming more salient, 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.

Examining implication for aggregate outcome, 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.[7] 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, perform-

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

[7]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.

ing randomized inference and other robustness checks. Finally, state and regional parties, rather than national parties drive the synchronization effect.[8] 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 the national government incumbents do not. Synchronized elections can therefore counter anti-incumbency at the state level.

Finally, we establish that voters' heightened cognitive cost during simultaneous elections drives these results. We consider two possible channels; first, simultaneous elections can lead to information overload. Moreover, it can also increase the cost of processing the same level of information as voters make two decisions simultaneously. Both mechanisms can lead to voters choosing a salient feature of candidates, such as their party identities, to simplify their decision-making across both elections. We show that 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. This shows that voters are more confused about the election issues during synchronized elections. Both information overload and costly information processing are consistent with this finding. We then show that voters significantly *less likely* to participate in campaign activities during simultaneous elections (compared to a single national or state election). This result is consistent with the costly information processing hypothesis, as voters would optimally reduce their information acquisition in presence of such costs. Additionally, voters are more likely to make up their mind early and are less likely to decide on the election day during synchronized elections. This is additional evidence in favor of the costly information processing mechanism. We do not find evidence in favor of choice fatigue as an explanation by showing that coattail effects are not the primary driver of our results. Voters facing choice fatigue may use a simple heuristic, such as party identity of candidates, to vote for the less prominent elections. This will result in the same party winning both elections, but it will be stronger in constituencies having prominent candidates. To test for coattail effects, we therefore identify constituencies with prominent candidates as those having a win margin larger than the 75th (or 90th) percentile. We however do not find that our results are driven by constituencies with large win margins, either in national or state elections.

We then consider several 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. Specifically, we consider six different mechanisms: dif-

[8] 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.

ferential selection of candidates, changes in the level and composition of turnout, voters choosing different voting strategies, (lack of) across-tier anti-incumbency, prospects of better economic outcomes with synchronized representation and differential campaigning by political parties. However, we find weak evidence in favor of these mechanisms.

Our paper contributes to the literature 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 can lead to sub-optimal information acquisition and conflation of voting decisions across elections. Our work, therefore, highlights the importance of election design in shaping the degree of effective decentralization. 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). The European Union is also debating whether to synchronize the European Parliamentary election with the national elections of its member countries. An understanding of the cognitive costs in this setting can potentially have design implications across most functioning democracies in the world. Consequently, our paper also speaks to the literature on decentralization that explores how various political economy factors shape the nature of decentralization (Mookherjee, 2015; Boffa, Piolatto, and Ponzetto, 2016; Gadenne, 2017; Ventura, 2019; Kresch, 2020). We highlight the importance of voter behavior affecting decentralization outcomes in this context.

Our paper also relates to the literature on choice experiments that show (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). In contrast, we show that in an electoral context, 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 simultaneously.

We also 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 features 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 is related to the literature on concurrent elections. This literature has

examined the effects of concurrent elections on turnout (Fauvelle-Aymar and François, 2015; Garmann, 2016; Cantoni, Gazzè, and Schafer, 2021; 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 show that synchronization of two equally high stakes elections involve significant consequences for voter behavior—an important yet less explored consequence of synchronization—with first-order effects on electoral outcomes.

3.2 Background and Data

3.2.1 Institutional Details

India follows a parliamentary form of governance with the 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[9]. The number of PCs and ACs 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. Appendix Section 3.9 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 between simultaneous and sequential elections.

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

3.2.2 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. By augmenting Jensenius (2015), we map each AC to its PC for all elections conducted between 1977 and 2018. During the Emergency (1975-1977), the 42nd Amendment froze the total parliamentary and assembly seats in each state till 2001 Census. Aftert the 2001 census, there was only one instance of boundary redistricing during our study period without any changes to the total number of state assembly and parliamentary constituencies. [10]

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.[11] 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 voting 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. The Lokniti surveys are conducted in two forms: following the national elections

[10] This was mainly done as states which had implemented family planning widely like Kerela, Tamil Nadu, and Punjab would stand to loose many parliamentary seats and states with poor family planning programs and higher fertility rates would adversely gain many of those seats.

[11] 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.

(the National Election Studies or NES), and the state assembly elections (the State Election Studies or SES). When elections are held simultaneously, only NES is conducted. The responses to the survey during simultaneous elections can therefore be treated as the average response to the two elections that happened simultaneously. We were able to access the relevant sections of the NES as well as the SES data for all the rounds since the survey began in 1996 till 2018. The data is perhaps the most trusted representative individual-level survey of voters in India and has been used in other studies such as Banerjee, Gethin, and Piketty (2019) and Varshney (2019). A detailed description of this dataset is available in Appendix Section 3.10. 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.

3.2.3 Summary Statistics

Far from being a marginal occurrence, simultaneous elections form a considerable part of our observed data in India (Appendix Table C.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.[12] Simultaneous elections are not monotonically less frequent or more frequent over time, during our sample period. Additionally, the probability of elections being synchronized in the next cycle, conditional on being synchronized in the current cycle is low at 0.29. The conditional probability of the second cycle being synchronized is also low at 0.33 (Appendix Table C.2). Therefore, the synchronization status of elections is not highly serially correlated.

Table 3.1 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). 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). Of the average of 10 (13) candidates, five are political party candidates in state (national) elections. The average turnout in state and national elections is about 68% and 63%, and a win margin of 9% and 10% respectively.[13] The effective number of parties

[12]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.

[13]It is a unique feature of the Indian elections that turnout is higher inthe local elections than in national elections. Existing research by Jensenius and Verniers (2017) and Chibber et al. (2022) suggests three main reasons. First, personal and family networks are more salient in local elections. Second, local elite and panchayat leaders make decisions that have a direct and immediate impact well being of voters, and it is in

(ENOP), defined as the inverse of the sum of squares of vote shares for each party, in each contest is about three. The electorate size in a PC is about 1 million. Each AC on average has about one-tenth of the PC's electorate. Appendix Table C.3 presents the summary statistics for when we only consider those national-state election pairs with a time difference of less than 180 days – a sub-sample of relevance to our empirical strategy discussed in the next section. The average turnout in state and national elections are very similar. Therefore, apart from their sizes, the ACs and PC are quite similar on average in their electoral environments, in terms of turnout, number of political party candidates, win margin and ENOP. In our data we observe 318 PCs and 2,509 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 3.1 shows that 48% of the survey respondents are women, and the average respondent age is 41 (with the range between 18 and 99). 35% of the survey respondents have high school or above qualification, and 33% belong to socially marginalized (Scheduled Castes / Scheduled Tribes) communities. Finally, 80% of the respondents are religiously Hindu, and 76% 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, 81 PCs, and 449 ACs where we have at least one simultaneous and one sequential election.

3.3 Empirical Strategy

3.3.1 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

the economic interest of the voters to be politically engaged. Decisions made by members of parliament are directed to the entire country and have indirect effects on voters. Third, in a PC, there are a large number of voters that candidates have to reach out to and it is difficult to mobilize voters.

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. Such changes give us within-state variation in synchronization over time. Naturally, 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.

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. In the remainder of the Indian states, elections were always non-synchronized in our sample period. As an example, Figure 3.1 shows the general and assembly election years for the state of Uttar Pradesh. The first GE and AE for this state occurred in the same year. 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) and later show the robustness of our results to higher and lower cut-off days. By doing this comparison, we argue that for a given constituency, within the pool 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.

3.3.2 Estimation Specification

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

$$y_{i,p,s,t} = \gamma I(\text{Sync} = 1)_{s,t} + \beta' X_{i,p,s,t} + \mu_p + \mu_t + \epsilon_{i,p,s,t} \tag{3.1}$$

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 (urban 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.[14] The coefficient γ identifies the difference in the outcome variable $y_{i,p,s,t}$ between simultaneous and sequential elections.

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 (3.1), and is as follows:

$$y_{a,p,s,t} = \gamma I(\text{Sync} = 1)_{s,t} + \beta' X_{a,p,s,t} + \mu_p + \mu_t + \epsilon_{a,p,s,t} \tag{3.2}$$

where y is the outcome variable at an AC (a) and PC (p), in state s at a national election year t. One of our main outcome variables is $I(\text{Same Party} = 1)$, a dummy variable that takes value one if the party elected in an AC a (in a state election) is same as the

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

one that won the national election in the PC p paired to a. Our dataset therefore comprises election-pairs at the AC level. $X_{a,p,s,t}$ includes a vector of controls that consist of dummies for reservation status[15] 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., 2021) 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 (3.1), 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 we compare ACs over time, weighing allows equivalent comparison of an AC under simultaneous and sequential elections. We note here that the size of the electorate grew by 182% from 1977 to 2019 and document that the results are robust to not using the weights.

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 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.[16] These 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.

[15]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 whose recommendations are constitutionally binding on any government.

[16]There was only one instance (in May 2008) of re-districting constituency boundaries in our study period (1977-2018) for a fraction of the constituencies allowing us to introduce constituency level time-trends.

3.4 Results

3.4.1 Graphical Analysis

We begin by presenting a descriptive characterization of our main results using graphs of unconditional distributions of the main outcome variables of interest. Figure 3.2, 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 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. Figure C.1 presents these observations for the full sample, i.e., comparing synchronized elections with all non-synchronized ones, and the patterns are similar. 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.

3.4.2 Salience of Parties in Voter Preferences

We begin by testing whether simultaneity of elections shapes an important aspect of voter decision making process – namely, salience of parties. 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", "other" 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 3.2 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 (or 18% of sample mean) 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.[17] Moreover, the fraction of voters who mention "candidate", "caste", and "not sure" in response to the question drops by 0.01 (or 3%), 0.02 (or 31%) and 0.06 (or 42%) percentage points respectively. While the effect on "candidate" is both small and statistically insignificant, the other two responses exhibit large and statistically significant reductions. This suggests that the increase in the fraction of "party salient" voters is driven by those who switch from caste preferences (which is an important candidate specific characteristic in Indian context), and those who are at the margin (between party and candidate specific features). If simultaneity of elections increases the cognitive load of voting, it is exactly the marginal voters who are likely to switch their focus on only parties to make decisions.[18]

3.4.3 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

[17] These findings are not driven by constituencies with disproportionately large number of national party contestants. In Table C.4, we classify all constituencies by the number of national party contestants and show that our results hold.

[18] In Appendix Section 3.13 we build a model that also shows that those near the indifference point between choosing to focus only on parties vis-a-vis both parties and candidate characteristics are the ones that switch when elections are simultaneous.

faced by the voter.

We test this using both aggregate data and the post-poll survey data. Table 3.3 presents the findings using aggregate data, and Table 3.4 presents the findings using the post-poll survey data. Table 3.3 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). 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. We perform this analysis only for parties that have candidates in both the PC p and in an AC a within p.[19] The regressions have party fixed effects, and therefore estimate the effect after removing party-specific differences in the outcome variable. Column 1 of Table 3.3 shows that the vote share gap of the same party reduces by 2.5 percentage points (or 28% of mean) on average during simultaneous elections. Moreover, the reduction occurs for both national and regional or state parties. Appendix Table C.6 presents these findings for the full sample, and the pattern is similar.[20]

In Table 3.4, 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.[21] After controlling for age, education, gender, social groups, and metrics of asset ownership, we find that the voters are 7.1 percentage point more likely to report that they voted for the same party in the national and state elections 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. We consider coattail effects in greater detail in Section 3.5 and find that they

[19]We show in Table C.5 that the share of parties who put up candidates in both tiers do not change during synchronized elections.

[20]Popular perception of state and national parties may differ from the ECI classification. For the popular definition, we only consider the BJP, INC and Left parties as national, the rest being state parties. According to the ECI definition, two more parties – the AITC and BSP – qualify to be national parties, though their presence is concentrated in very few states in India. Table C.7 presents the same estimates but with the popular definition of national and state parties. We find similar results.

[21]We note here that the sample sizes are different across Tables using post-poll survey data. The variation is not a result of non-response rates, but stem from some of the survey questions being fielded in some but not all years. Appendix Table C.8 documents this in detail.

cannot account for our findings.

3.4.4 Synchronized Representation

So far, we have shown that simultaneous elections affect voting behavior. We now establish that this has first-order effects on electoral outcomes. We test whether the probability that the same political party wins both the AC and PC increases during synchronized elections. Table 3.5 presents the results.

Each Column in Table 3.5 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, Table C.9 shows that the likelihood is higher at 15.9 percentage points (38.7% of the sample mean). Panels (a) and (b) of Appendix Figure C.2 presents a heatmap of the probability of winning both the AC and PC for the full sample and Panels (c) and (d) for the restricted 180-day 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.

Figure 3.3 plots the coefficient estimates for various constructs of the time difference for the sequential election pairs – the coefficients are reported in Table C.10. 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. Moreover, the magnitude initially falls as the time window expands and then rises again.[22] 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.

[22]This patterns are inconsistent with an alternate explanation of time varying voter preferences. When voters' preferences change over time, simultaneity of elections increases straight-ticket voting by simply eliminating the possibility of preferences to change. However, in such a scenario, the estimated effect of simultaneous elections would be *smallest* with the shortest time window. We discuss this mechanism along with others in greater detail in Section 3.6.

Additional robustness: We test whether these results are robust to potential confounders and data sample considerations and report these in Table C.11. 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 (Table C.12) and re-estimate standard errors with wild cluster bootstrap due to the relatively small number of clusters in our sample (Table C.13). 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 in Figure C.3 confirm our belief that our point 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 3.11.

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 3.6 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.[23] Therefore, Table 3.6 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

[23]National parties tend to campaign, especially during national elections, on a pan-Indian platform maintaining 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.

to gain from simultaneous elections.[24] The estimate suggests that simultaneous elections could potentially offset anti-incumbency, at least for state government incumbents.

3.5 Mechanism

3.5.1 Cognitive Cost of Simultaneous Voting

We argue that the changes in voting behavior examined above arises out of higher cognitive cost faced by voters during simultaneous elections. We consider two related but distinct mechanisms related to higher cognitive costs. Voters could face an overload of information during synchronized elections due to simultaneous campaigning of two types of elections, which can increase the cost of simultaneous decision-making. Additionally, the voters may have difficulty *processing* the same level of information, just because they have to make two separate decisions simultaneously. Voting in state and national elections may require a voter to differentially emphasize on different kind of information, or consider a different set of policy issues in each election. Voters however could be cognitively constrained to optimize based on separate decision-making processes simultaneously. Hence, voters may choose a simpler decision-making process during simultaneous elections, that focuses on a salient feature of candidates, namely their party identities, to make decisions across elections. This can also explain our main results.

We present three pieces of evidence from the post-poll surveys that in favor of either of the mechanisms. First, 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 3.7 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 (nearly doubling the proportion from a sample mean of 26.1%) during simultaneous elections, compared with sequential elections that occur within 180 days of each other. Therefore, simultaneous elections dramatically increase confusion about the policy agenda guiding the decision-making process of voters. Finally, we test whether the confusion is explained by voter characteristics and find that the confusion is widespread (Table C.14).

Greater confusion about election issues could result from both information overload and

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

cognitive constraints. We test whether voters receive similar level of information during simultaneous elections. We examine the responses to the following question in the survey: did you do any of the following - attend election meetings, participate in procession/rallies, door to door canvassing, distributing election material, giving donations? A positive response to this question would imply that the respondent is interested in acquiring information about the candidates. Table 3.8 Column 1 reports the differences across synchronized and stand-alone elections. We find that voters are 6.6 percentage points (or 19% of mean) *less likely* to participate in campaign activities during simultaneous elections. Moreover, we find the same result when compared to stand-alone national and state elections separately, as reported in Columns 2 and 3 respectively. This, however, is not consistent with the information overload hypothesis, as for that to work voters should receive at least as much information during simultaneous elections as in a stand-alone (national or state) election. Moreover, the result is consistent with the cognitive constraint mechanism. If voters indeed chose a simpler decision-making process during simultaneous elections, their information acquisition would reduce. Naturally, voters' reduction in information acquisition could also be in response to parties' greater campaigning during simultaneous elections. We consider supply-side changes in Section 3.6 and argue that differential campaigning cannot fully explain this behavior.

Finally, Table 3.9 shows that during simultaneous elections, voters are 9.7 percentage points (or 40%) less likely to make up their mind on the polling day and, 7.3 (73%) and 3.2 (13%) percentage points more likely to decide few days before polling or during campaigning, respectively. The result is consistent with the cognitive constraint hypothesis. Since cognitively constrained voters simplify their decision-making process during simultaneous elections, it can quicken their decision-making process. Overall, our evidence strongly indicates that higher cognitive cost of simultaneous voting, either due to information overload or cognitive constraint on information processing, is an important mechanism explaining our main results.

3.5.2 Choice Fatigue

To support our statement that choice fatigue is unlikely in our context, we formally test this hypothesis. Augenblick and Nicholson (2016) shows that choice fatigue leads voters to use "decision shortcuts". The nature of such shortcuts may depend on the context. In case of synchronized elections, decision shortcuts can result in the "coattail effect."[25]

[25] Augenblick and Nicholson (2016) shows that in their context voters are more likely to vote for the first item named in contests compared to others that appear lower down the order. However, such a decision

This is a well documented consequence of synchronized elections, 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. The context in which the coattail effect has typically 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). In the Indian context, hierarchy between the national and state elections is not obvious: 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. Moreover, as highlighted before, average turnout are comparable across the elections.

If choice fatigue is present, then we hypothesize that it will lead to stronger coattail effects in constituencies with a "star candidate" in an election, as voters will get a stronger cue to make their decision in the other election. 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. Table C.15 reports the results. We find that the interaction term is positive and comparable in magnitude with the main coefficient, but is statistically insignificant. The main coefficient however remains positive and statistically significant at 1%. Hence, while there may be some coattail effect at play, it does not seem to be systematic and can not fully account for our results.

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 Table C.16. As before, we find that the interaction terms are positive but statistically insignificant, suggesting some presence of reverse coattail effect. However, the main effect is still high in magnitude

shortcut in our context would imply that the likelihood of same party winning both tiers would either not change or go down during simultaneous elections. This is because candidates are ordered alphabetically in each election, and therefore, a party's positions across the two contests are not correlated.

and is statistically significant at 1%. Therefore, we do not find that coattail effects and generally, choice fatigue, is the primary mechanism explaining our results.

3.6 Considering Conventional Mechanisms

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

Candidate Selection: We first rule out the possibility that changes in the nature of candidates running in simultaneous elections can explain the results. We examine five outcome variables in this regard and report the results in Table C.17. We focus on candidates affiliated to parties for our analysis (i.e., we do not consider the independents). The variables are shares of party candidates who run for the first time (Column 1), have changed their party affiliations, i.e., are turncoats (Column 2), are re-contesting (Columns 3 and 4), and lost their deposit[26] (Column 5). Finally, Column 6 reports the result for the logarithm of total number of candidates affiliated to parties running in the election. Panel A reports the results for state assembly elections, while Panel B reports for national elections. The results show that changes during simultaneous elections in the characteristics of candidates are mostly statistically insignificant. Out of the 12 coefficients, only one is statistically different from zero.

The share of candidates who run for the first time in national elections reduces during synchronized elections by 0.034 on a mean of 0.68. While the effect is statistically significant, its magnitude is small. Similarly, the total number of party candidates falls in both types of elections by about 5% during synchronized elections. The estimates are both noisy and small in magnitude In both types of elections, the number of party candidates is little more than 5. Hence, the magnitude of the effect is about 0.25. Table C.5 Column 1 further shows that the share of parties putting up candidates in both tiers (the PC and the AC) does not change during simultaneous elections. Columns 2 and 3 show that shares of national and state parties, examined separately, also do not change. The results establish that parties' candidate selection strategy did not change significantly during simultaneous elections and therefore, can not explain our our main results.

[26]If a candidate fails to get one-sixth of the vote share, then they lose the money deposited during nomination filing. It indirectly captures the number of "non-serious" party candidates running in elections.

Turnout: An obvious concern is that our results might be driven by turnout changes and the consequent changes in voter composition. Average turnout in national and state elections is 0.55 and 0.58 respectively. Moreover, Table C.18 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).[27] While the magnitude of the increase is relatively small, it is possible that this may be driving our results.

Table C.19 reports the percentage changes in turnout during simultaneous elections in different countries and compares them to India. As the Table shows, the Indian figure is relatively low compared to the US, UK, Switzerland, and Italy, and is comparable to Germany. In the other cases, however, it is the lower tier elections that experience the increase in turnout, while in our case turnout increases in the national elections. We use the post-poll survey data to first test whether this increase in turnout correspond to significant changes in the composition of voters. Table C.20 reports in Column 1 The result of regressing occurrence of simultaneous elections on the likelihood of survey respondents saying that they have voted. Consistent with the election results, we find that respondents are more likely to vote during simultaneous elections.[28]

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.

To further test whether turnout is important for our result, we create an indicator for each PC that takes a value of one if its average turnout during sequential (i.e., un-synchronized) elections is higher than the median, and zero otherwise. We then interact our synchronization dummy with this indicator of "high turnout" PC. Appendix Table C.21 Column 2 reports the results.[29] We find that the interaction effect is positive and is imprecisely estimated. The main effect remains positive, large, and statistically significant. In Column 2, we use indicators of turnout falling in the second and third terciles. This also does not change our results. The results demonstrate that turnout cannot be the main driver of our

[27]In Indian context, voter turnout is generally higher in the state elections as compared to the national elections. Previous work by Jensenius and Verniers (2017) and Chibber et al. (2022) suggests that it is because MLAs rather than MPs make decisions that have a direct effect on voters wellbeing. Also, it is difficult to mobilise voters in a large constituency (PC).

[28]The estimated increase is 3.3 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.

[29]Column 1 repeats the main result from Table 3.5.

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 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 3.3, 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.

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 yields significant economic benefits.[30] 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

[30]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.

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.[31] 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.[32] 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 3.10 reports the results for these outcomes. Columns 1–5 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.[33]

Finally, we test if the effect of synchronized elections was heterogeneous across districts with differential presence of the state government incumbent party. If alignment of parties across tiers is indeed important in our context, we should find the effect of synchronized elections to be larger in districts with greater presence of the state government incumbent. This is because the state government incumbent was more likely to win both tiers during simultaneous elections. Appendix Table C.23 reports the results. We do not find any such pattern in the data. The interaction between synchronized elections and presence of state government incumbent is negative in all but one outcome variable, and all are statistically insignificant. Therefore, greater economic performance could not have motivated the behavior change among voters.

Differential Voting Strategies: 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

[31] 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.

[32] 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.

[33] In Appendix Table C.22 we examine private and public investment separately, and find null effects for each of them.

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.

In the Indian context, Nellis (2016) finds that the probability of a political party winning 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 C.24 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 further consider the possibility that voting strategies for state parties may change during simultaneous elections, which can explain their disproportionate gain from simultaneous elections. If voters consider some state parties to be not suited to govern their state but more likely to form the national government, then such parties would not win constituencies in both tiers during sequential elections. During simultaneous elections, voters may rationally prefer to vote for them in both tiers, since they can not condition their voting strategy that sequential elections allow. For each state party, we compute the share of ACs that they win after winning the corresponding PCs in sequential elections. We identify state parties that fall in the lowest quartile of the distribution of this share as those who do not typically win both tiers during sequential elections. Table C.25 shows that our result is not primarily driven by those state parties. The effect of synchronized elections on those state parties winning both tiers is similar to the average effect. We therefore discount the hypothesis of voters changing their voting strategies as the explanation of 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 behavior, especially if they have the knowledge of an upcoming election.[34] 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 3.3 is again inconsistent with 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.

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 C.26 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. Additionally, Appendix Table C.27 columns 2 and 3 show that the increase in campaigning during simultaneous elections is present when compared against stand alone national elections, but not against state elections. Therefore, this can not fully explain the reduction in information acquisition by voters observed in Table 3.8, as in that case we observe a fall across both types of elections. Taken together, our evidence does not find support for the rational

[34] 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.

explanations.

3.7 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, thereby reducing anti-incumbency. 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. 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.

Tables and Figures

Table 3.1—Summary Statistics

	Mean (1)	SD (2)	Min (3)	Max (4)
Panel A: State Elections				
Size of Electorate (in thousands)	151.92	86.15	1.40	1593.91
Number of Contestants	9.32	9.26	1	1033
Number of Parties	5.26	7.47	0	990
Effective # of Parties (ENOP)	2.88	0.91	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)	1034.02	370.32	115.01	3240.34
Number of Contestants	11.03	8.09	1	79
Number of Parties	5.60	3.38	1	43
Effective # of Parties (ENOP)	2.69	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	0.48	0.50	0	1
Age of respondent	40.98	15.58	18	99
Education: Matric and above	0.35	0.48	0	1
Social Category: SC or ST	0.33	0.47	0	1
Religion: Hindu	0.80	0.40	0	1
Locality: Rural	0.76	0.42	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 3.2—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: This table presents the effect of synchronization on the 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? Outcome variables across all columns are binary. Controls: log(Age); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. Standard errors are clustered at the State GE-Year level. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: Post-Poll Surveys.

Table 3.3—Vote Share Gap

	Party Vote Share Gap			
	AC level			PC level
	All	National Party	State Party	All
	(1)	(2)	(3)	(4)
I(Sync = 1)	-0.025^{***}	-0.027^{***}	-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	17,654	9,440	8,214	3,800

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. Outcome variables across all columns are continuous between 0 and 1. 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.
Data Source: ECI Election Reports.

Table 3.4—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: This table presents the effect of synchronization on probability of voting for the same party and the heterogeneity across sub-samples. Outcome variables across all columns are binary. 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. Standard errors are clustered at the State GE-Year level. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: Post-Poll Surveys.

Table 3.5—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: This table presents the effect of synchronization on same political party winning a seat at the assembly election and the national election. 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. Outcome variables across all columns are binary. 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.
Data Source: ECI Election Reports.

Table 3.6—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)	0.001	0.122***	−0.079*	0.052
	(0.050)	(0.045)	(0.044)	(0.034)
Mean Dep. Var.	0.09	0.12	0.17	0.13
Observations	6,200	6,200	6,200	6,200
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: This table presents the heterogeneity in the effect of synchronization by party type and incumbency. 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). Outcome variables across all columns are binary. 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.
Data Source: ECI Election Reports.

Table 3.7—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: This table presents the effect of synchronization on the survey question− Talking about the election just completed what do you think was the main issue around which the election was fought this time? Outcome variables across all columns are binary. Controls: log(Age); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. Standard errors are clustered at the State GE-Year level. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: Post-Poll Surveys.

Table 3.8—Participation in Election Activities

	Participation in Election Activities		
	Both surveys	NES only	SES only
	(1)	(2)	(3)
I(Sync = 1)	-0.066^{***}	-0.084^{***}	-0.043^{**}
	(0.020)	(0.028)	(0.021)
Controls	Yes	Yes	Yes
PC FE	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes
Mean Dep. Var.	0.341	0.337	0.344
8 Number Clusters	85	44	68
Observations	6,939	3,306	4,663

Notes: This table presents the effect of synchronization on the survey question − During the election people participate in various activities related to election. Did you do any of the following: attend in election meetings, participate in procession/rallies, door to door canvassing, distributing election material, giving donations? Outcome variables across all columns are binary. Controls: log(Age); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. Standard errors are clustered at the State GE-Year level. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: Post-Poll Surveys.

Table 3.9—Make up mind to vote

	Make up mind to vote				
	Polling Day	Few days before polling	During Campaign	Before Campaign	Not sure
	(1)	(2)	(3)	(4)	(5)
I(Sync = 1)	-0.097^{***}	0.073^{***}	0.032^{**}	-0.017	0.008
	(0.013)	(0.010)	(0.014)	(0.020)	(0.007)
Controls	Yes	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.241	0.10	0.248	0.353	0.058
Number Clusters	85	85	85	85	85
Observations	6,220	6,220	6,220	6,220	6,220

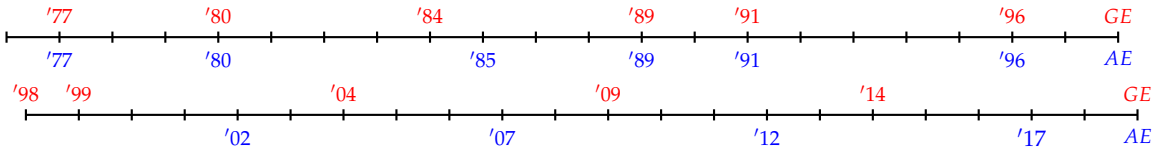
Notes: This table presents the effect of synchronization on the survey question− When did you finally make up your mind about who to vote? − polling day, few days before polling, during campaign, before campaign? Outcome variables across all columns are binary. Controls: log(Age); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. Standard errors are clustered at the State GE-Year level. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: Post-Poll Surveys.

Table 3.10—Economic Activity

	Agricultural Production	Gross Cropped Area	Credit Disbursed	Total Investment	Night Lights
	(1)	(2)	(3)	(4)	(5)
Sync	0.012	−0.007	−0.020	−0.006	0.026
	(0.054)	(0.054)	(0.015)	(0.016)	(0.025)
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

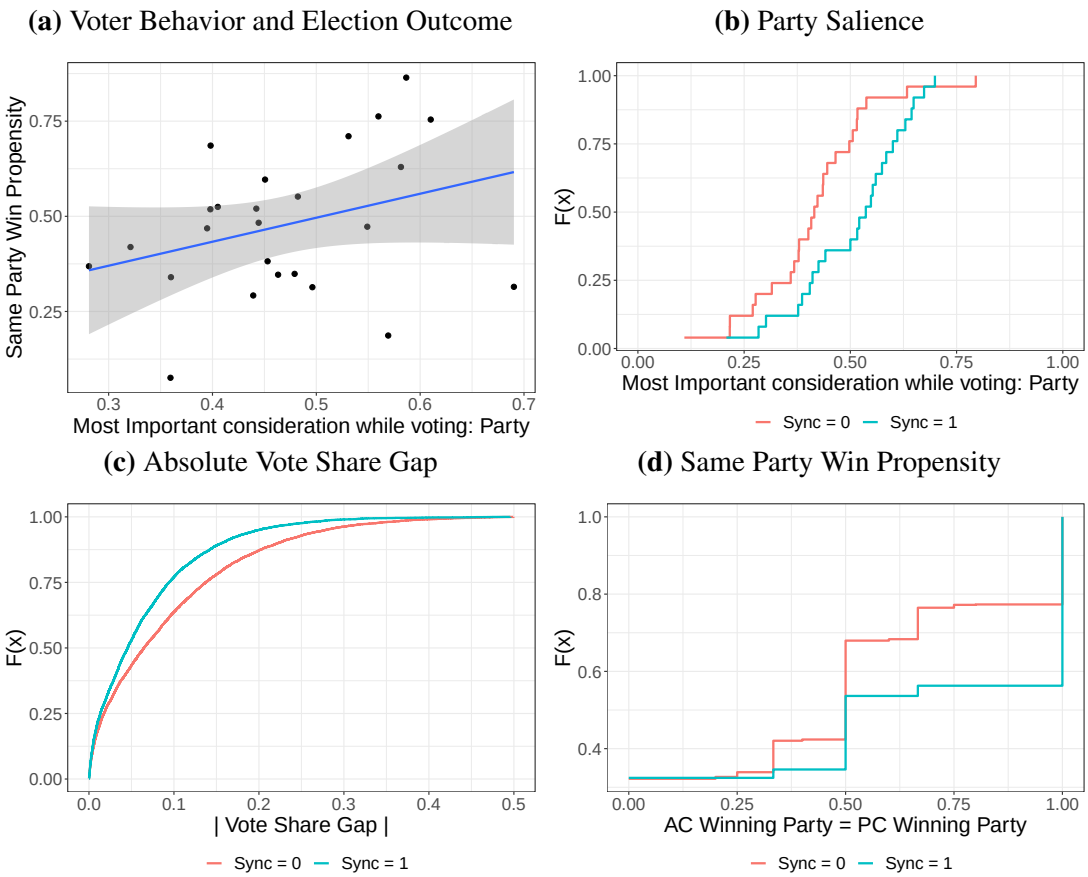
Notes: The dataset is a district × year panel for this table. Sync measures the share of assembly constituencies within the district that had a synchronized election. All outcome variables are demeaned and scaled by the inverse of its standard deviation. Total agricultural production is measured in tons (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. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Sources: Centre for Monitoring the Indian Economy and NOAA.

Figure 3.1—Standard Approach: Uttar Pradesh GE and AE Years



Notes: The figure shows the general and assembly election time line for the state of Uttar Pradesh. The years in red correspond to the national (general) elections (GE) and the years in blue correspond to the state assembly elections (AE).
Data Source: ECI Election Reports.

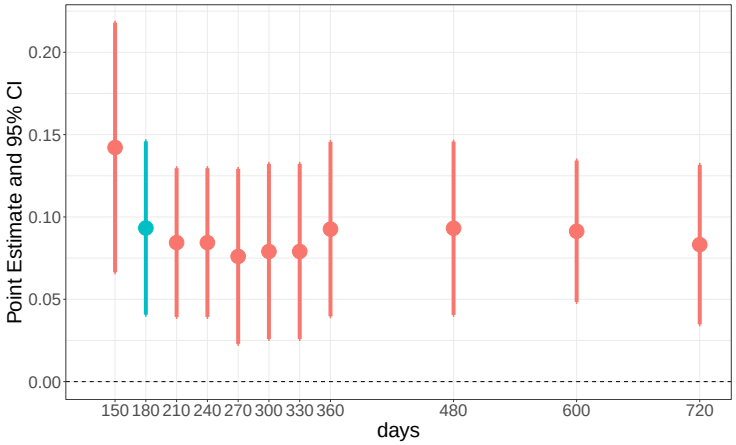
Figure 3.2—Graphical Analysis



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)].

Data Source: Post-Poll Surveys and ECI Election Reports.

Figure 3.3—Point Estimates across Time Differences



Notes: The figure plots the coefficient γ and 95% CI from Equation (3.2) 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.
Data Source: ECI Election Reports.

Appendix

3.8 Appendix: Tables and Figures

Table C.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 C.2—Probability of Subsequent Synchronized Election

State Name	I(First Election After First Sync = Sync) (1)	I(Second Election After First Sync = Sync) (2)
Andhra Pradesh	0	1
Arunachal Pradesh	0	0
Assam	1	0
Goa	0	0
Gujarat	0	0
Haryana	1	0
Himachal Pradesh	0	0
Karnataka	0	1
Kerala	1	1
Maharashtra	0	0
Meghalaya	0	0
Mizoram	0	0
Nagaland	0	1
Odisha	1	1
Puducherry	0	1
Punjab	0	0
Sikkim	0	1
Tamil Nadu	0	0
Tripura	0	0
Uttar Pradesh	1	0
West Bengal	1	0
All India Average	0.285	0.333

Notes: This table presents the probability that the first election (Column 1) and the second election (Column 2) were also synchronized after that state had a synchronized election.

Table C.3—Summary Statistics (180 days sample)

	Mean (1)	SD (2)	Min (3)	Max (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	13.00	0	990
Effective # of Parties (ENOP)	3.02	1.00	1.00	10.00
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	0.45	0.50	0	1
Age of respondent	40.98	16.43	18	99
Education: Matric and above	0.30	0.46	0	1
Social Category: SC or ST	0.33	0.47	0	1
Religion: Hindu	0.84	0.37	0	1
Locality: Rural	0.75	0.43	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 national election.

Table C.4—Party Salience by Party Contest

Most important consideration while voting: Party			
	(1)	(2)	(3)
I(Sync = 1)	0.074**	0.084*	0.102*
	(0.033)	(0.049)	(0.060)
I(Sync = 1) × I(N. P. Contestants > Above Median)		−0.021	
		(0.085)	
I(Sync = 1) × I(N. P. Contestants > 2nd Tercile)			−0.075
			(0.080)
I(Sync = 1) × I(N. P. Contestants > 3rd Tercile)			−0.001
			(0.100)
Controls	Yes	Yes	Yes
PC FE	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes
Mean Dep. Var.	0.418	0.418	0.418
Number Clusters	83	83	83
Observations	6,753	6,753	6,753

Notes: This table presents the effect of synchronization on the 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? Outcome variables across all columns are binary. Controls: log(Age); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. Standard errors are clustered at the State GE-Year level. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: Post-Poll Surveys.

Table C.5—Changes in Party Fielding Candidates

	Share of Parties Fielding Candidates in Both Tiers		
	Overall	National Party	State Party
	(1)	(2)	(3)
I(Sync = 1)	−0.005	−0.001	−0.005
	(0.004)	(0.002)	(0.004)
Controls	Yes	Yes	Yes
PC FE	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes
Mean Dep. Var.	0.51	0.71	0.42
Number Cluster	9	9	9
Number States	10	10	10
Observations	1,008	1,008	1,008

Notes: This table presents the effect of synchronization on the political party's candidate selection strategies. 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.
Data Source: ECI Election Reports.

Table C.6—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)	-0.041^{***}	-0.044^{***}	-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	0.10	0.09	0.07
Number Clusters	168	168	168	168
Number States	21	21	21	21
Observations	60,866	42,052	18,814	11,483

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.
Data Source: ECI Election Reports.

Table C.7—Vote Share Gap

	Party Vote Share Gap		
	All	Restricted National	State
	(1)	(2)	(3)
I(Sync = 1)	-0.026^{***}	-0.032^{***}	-0.019^{***}
	(0.004)	(0.003)	(0.006)
Controls	Yes	Yes	Yes
Party FE	Yes	Yes	Yes
PC FE	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes
Mean Dep. Var.	0.09	0.12	0.07
Number Clusters	40	40	40
Number States	10	10	10
Observations	17,648	6,568	11,080

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. Restricted National: INC, BJP, CPI, CPI (M). Re-defined State: State Party + remaining national parties. 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. Data Source: ECI Election Reports.

Table C.8—Lokniti Surveys Questions & Response Rates

Survey Question	Sample Size	Question not fielded	Refuse to Answer	Missing Controls	Final Sample	Table Reference
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?	7033	2.65%	0%	1.32%	6753	Table 3.2 and Appendix Table C.4
Which party did you vote for in this election and the last election?	7033	53.24%	0.03%	0.56%	3249	Table 3.4
Talking about the election just completed what do you think was the main issue around which the election was fought this time?	7033	74.16%	0%	0.31%	1795	Table 3.7
During the election people participate in various activities related to election. Did you do any of the following: attend in election meetings, participate in procession/rallies, door to door canvassing, distributing election material, giving donations?	7033	0%	0%	1.33%	6939	Table 3.8
When did you finally make up your mind about who to vote: polling day, few days before polling, during campaign, before campaign?	7033	10.33%	0%	1.22%	6220	Table 3.9

Notes: Survey data analysis uses only those PCs which had at least one synchronized and a unsynchronized election and with a 180 days gap between GE and AE. In a synchronized election, only the national election survey was conducted. For the unsynchronized election, for some PCs we have the national election survey and for some PCs we have the state election survey. Therefore, we might not have which party did you vote for at GE and AE consistently for each PC.

Table C.9—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-national election pairs within zero and five years of time difference. The time difference is computed as the days elapsed since the national 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.
Data Source: ECI Election Reports.

Table C.10—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. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: ECI Election Reports.

Table C.11—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-national 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. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: ECI Election Reports.

Table C.12—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: This table presents the effect of synchronization on the probability of same party winning across tiers including additional control variables. Standard errors are clustered at the State GE-Year level. The estimates are weighted by the size of the electorate for the AE constituency. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: ECI Election Reports.

Table C.13—Synchronization Effects on Win Probability (Wild Clustered Bootstrap)

	I(Same Party = 1)					
	State-Year Cluster			**State Cluster**		
	(1)	(2)	(3)	(4)	(5)	(6)
I(Sync = 1)	0.097**	0.093**	0.093**	0.097*	0.093*	0.093*
	(0.042)	(0.038)	(0.038)	(0.058)	(0.049)	(0.049)
PC FE	Yes	Yes	Yes	Yes	Yes	Yes
GE-Year FE		Yes	Yes		Yes	Yes
Controls			Yes			Yes
Mean Dep. Var.	0.43	0.43	0.43	0.43	0.43	0.43
Number Cluster	40	40	40	10	10	10
Number States	10	10	10	10	10	10
Observations	6,530	6,530	6,530	6,530	6,530	6,530

Notes: Columns 1 to 6 restricts the time elapsed between the national 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 are in parentheses; at the State GE-Year level in Columns 1 to 3 and at the State GE-Year level in Columns 4 to 6. The 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.
Data Source: ECI Election Reports.

Table C.14—Cognitive Constraints and Voter Characteristics

	Main issue for the elections: Don't know						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
I(Sync = 1)	0.241***	0.270***	0.292***	0.257***	0.312***	0.227***	0.225***
	(0.061)	(0.076)	(0.083)	(0.078)	(0.100)	(0.058)	(0.087)
I(Sync = 1) x Age		−0.001					
		(0.001)					
I(Sync = 1) x Education: Illiterate			−0.145				
			(0.093)				
I(Sync = 1) x Education: Below Matric			−0.019				
			(0.063)				
I(Sync = 1) x Social Category: Reserved				−0.020			
				(0.033)			
I(Sync = 1) x Locality: Rural					−0.098		
					(0.109)		
I(Sync = 1) x Religion: Hindu						0.056	
						(0.071)	
I(Sync = 1) x Any Durable Asset							0.017
							(0.081)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.261	0.261	0.261	0.261	0.261	0.261	0.261
Number Clusters	42	42	42	42	42	42	42
Observations	1,795	1,795	1,795	1,795	1,795	1,795	1,795

Notes: This table presents the effect of synchronization on the 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.
Data Source: Post-Poll Surveys.

Table C.15—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) $\times$ I(GE Win Margin $\geq$ 75th percentile)	0.063	
	(0.052)	
I(Sync = 1) $\times$ I(GE Win Margin $\geq$ 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. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: ECI Election Reports.

Table C.16—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. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: ECI Election Reports.

Table C.17—Synchronization Effects on Candidate Supply

	Contesting First Time	Turncoat	Re-Contesting Candidates		Deposit Lost	log(Party Candidates)
			Overall	Same Constituency		
	(1)	(2)	(3)	(4)	(5)	(6)
			Panel A: State Assembly Elections			
I(Sync = 1)	−0.025	0.006	0.017	0.010	−0.005	−0.046
	(0.016)	(0.012)	(0.016)	(0.013)	(0.039)	(0.079)
Mean Dep. Var.	0.7	0.12	0.22	0.78	0.52	5.37
Number Elections	40	40	40	40	40	40
Observations	6,519	6,519	6,519	5,495	6,519	6,506
			Panel B: National Elections			
I(Sync = 1)	−0.034**	0.028	−0.010	−0.035	−0.035	−0.053
	(0.015)	(0.023)	(0.011)	(0.023)	(0.029)	(0.034)
Mean Dep. Var.	0.68	0.1	0.26	0.8	0.52	5.63
Number Elections	9	9	9	9	9	9
Observations	1,008	1,008	1,008	923	1,008	1,008
Controls	Yes	Yes	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Number States	10	10	10	10	10	10

Notes: This table presents the effect of synchronized elections on other electoral outcomes for state assembly elections (Panel A) and national elections (Panel B). All columns are for party candidates. Column (1) across bothpanels document for the candidates contesting for the first time, Column (3) and (4) are for those candidates who re-contest in the elections. Column (5) is the share of party canddiates who lost their election deposit. Column (6) measures the natural logarithm of the number of parties that contest the elections. All regressions control for the reservation status of the constituency. The mean dependent variable reports the mean without logarithmic transformation for Column (7). 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.
Data Source: ECI Election Reports.

Table C.18—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.
Data Source: ECI Election Reports.

Table C.19—Concurrent Elections and Turnout

Country	Turnout Change	Source
Germany	7.7%	Garmann (2016)
France	9.15%	Fauvelle-Aymar and François (2015)
Switzerland	13.33%	Schmid (2015)
Italy	19.97%	Cantoni et al. (2021)
UK	25.65%	Authors' calculations (Appendix Section 3.12)
US	41%	Authors' calculations (Appendix Section 3.12)
India	4.9%	Table C.18

Notes: This table presents the effect of simultanoues elections on percentage changes in turnout in different countries.

Table C.20—Synchronization Effects on Voting in Elections

	I(Voted in the Election = 1)				
	(1)	(2)	(3)	(4)	(5)
I(Sync = 1)	0.033***	0.027	0.025*	0.053***	0.035***
	(0.004)	(0.026)	(0.013)	(0.012)	(0.006)
I(Sync = 1) x Age		0.0001			
		(0.001)			
I(Sync = 1) x Education: Illiterate			0.025		
			(0.018)		
I(Sync = 1) x Education: Below Matric			0.0002		
			(0.016)		
I(Sync = 1) x Social Category: Reserved				−0.029	
				(0.019)	
I(Sync = 1) x Any Asset					−0.006
					(0.009)
Controls	Yes	Yes	Yes	Yes	Yes
PC FE	Yes	Yes	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes	Yes	Yes
Mean Dep. Var.	0.896	0.896	0.896	0.896	0.896
Number Clusters	69	69	69	69	69
Observations	5,589	5,589	5,589	5,589	5,589

Notes: This table presents the effect of synchronization on the survey question− Talking about the election just completed did you vote? 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. Standard errors are clustered at the State GE-Year level. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: Post-Poll Surveys.

Table C.21—Synchronization Effects with Turnout

	I(Same Party = 1)		
	(1)	(2)	(3)
I(Sync = 1)	0.093***	0.077**	0.077*
	(0.027)	(0.036)	(0.044)
I(Sync = 1) x I(Un-Sync GE Turnout Above Median)		0.036	
		(0.048)	
I(Sync = 1) x I(Un-Sync GE Turnout 2nd Tercile)			0.026
			(0.054)
I(Sync = 1) x I(Un-Sync GE Turnout 3rd Tercile)			0.027
			(0.070)
Controls	Yes	Yes	Yes
PC FE	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes
Mean Dep. Var.	0.43	0.43	0.43
Number Clusters	40	40	40
Number States	10	10	10
Observations	6,530	6,488	6,488

Notes: Un-Sync GE Turnout Tercile measures the terciles for turnout at the PC level for all unsynchronized elections (Median: 0.559, Terciles: [0.31, 0.512], (0.512, 0.601], (0.601, 0.772]). The number of observations change for Columns (2) and (3) because of delimitation of constituencies. 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.
Data Source: ECI Election Reports.

Table C.22—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 × 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. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level. Data Source: ECI Election Reports.

Table C.23—Heterogeneity in Economic Activity by Incumbency

	Total Agricultural Production	Gross Cropped Area	Credit Disbursed	Total Investment	Night Lights
	(1)	(2)	(3)	(4)	(5)
Sync	0.043	0.005	−0.029*	0.010	0.047
	(0.082)	(0.082)	(0.017)	(0.010)	(0.029)
Sync × State Govt. Incumbent	−0.069	−0.021	0.032	−0.047	−0.050
	(0.082)	(0.082)	(0.055)	(0.063)	(0.034)
Time Trends	District	District	District	District	District
GE Year FE	Yes	Yes	Yes	Yes	Yes
Mean Dep. Var.	1.011	0.041	0.034	0.467	26.241
Observations	9,510	7,398	12,129	5,846	6,991

Notes: The dataset takes a district × 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 outcome variables are standardized. The total agricultural production is measured in tons (1998 − 2018). The gross cropped area is measured in hectares per square kms of the district area (1998 − 2018). The district area is measured from 2001 census and is unavailable for new districts and their parent districts. The credit disbursed and total investment are calculated as millions of rupees per capita (1995 − 2018). The night lights are measured as average luminosity across assembly constituencies (1994 − 2007). Standard errors are clustered at the State - GE Year level. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: CMIE and NOAA.

Table C.24—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. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: ECI Election Reports.

Table C.25—Synchronization Effects by Party

	I(Same Party = 1 &)	
	State Party	State Party from Lowest Quartile
	(1)	(2)
I(Sync = 1)	0.088***	0.074***
	(0.028)	(0.025)
Controls	Yes	Yes
PC FE	Yes	Yes
GE-Year FE	Yes	Yes
Mean Dep. Var.	0.07	0.0254
Number Cluster	40	40
Number States	10	10
Observations	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 state party in the first column. The second column is for those state parties that fall in the lowest quartile of the distribution of parties that win most ACs after winning a PC in a sequential election. 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.
Data Source: ECI Election Reports.

Table C.26—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

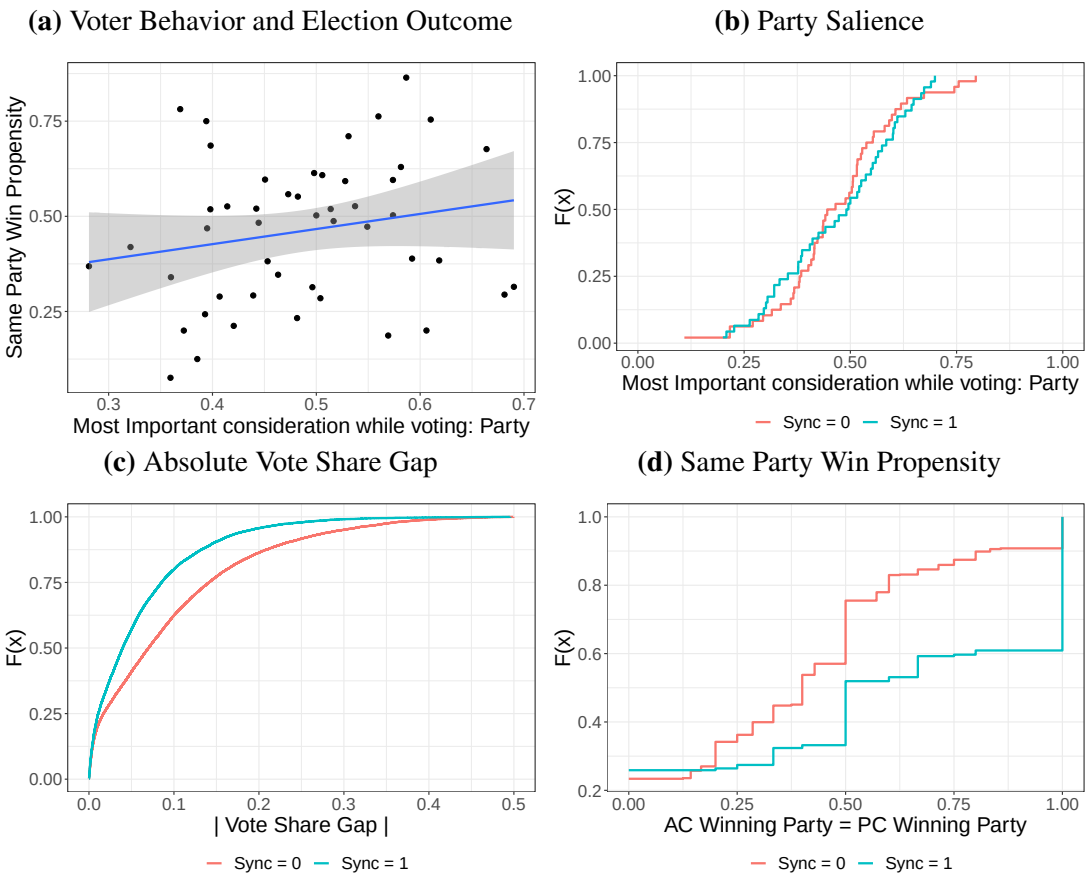
Notes: This table presents the effect of synchronization on the survey question− Did a party worker visit your house before elections? Controls: log(Age); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. Standard errors are clustered at the State GE-Year level. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: Post-Poll Surveys.

Table C.27—Visit by Party Worker

	Visit by Party Worker		
	Both surveys	NES only	SES only
	(1)	(2)	(3)
I(Sync = 1)	0.144***	0.239***	0.078
	(0.042)	(0.075)	(0.051)
Controls	Yes	Yes	Yes
PC FE	Yes	Yes	Yes
GE-Year FE	Yes	Yes	Yes
Mean Dep. Var.	0.442	0.393	0.481
Number Clusters	74	39	62
Observations	6,229	2,966	4,293

Notes: This table presents the effect of synchronization on the survey question − Did a party worker visit your house before elections? Controls: log(Age); Female; Education: Illiterate, Below Matric; Social Category: SC, ST, OBC; Religion: Hindu, Muslim; Locality: Urban; Assets: Four Wheeler, Two Wheeler, TV. Standard errors are clustered at the State GE-Year level. ***, **, and * indicate significance at the 1, 5, and 10 per cent critical level.
Data Source: Post-Poll Surveys.

Figure C.1—Summary Statistics: All Days Sample

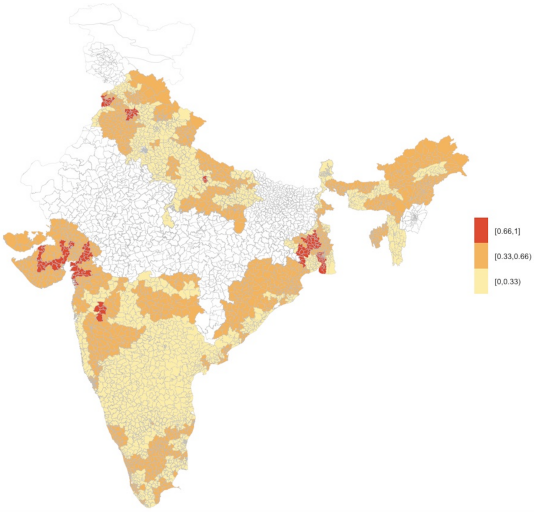


Notes: The figure (a) and (b) uses the post-poll surveys at the parliamentary constituency level. The aggregate electoral data is used at the party-assembly constituency level [figure (c)] and assembly constituency level [figure (d)].

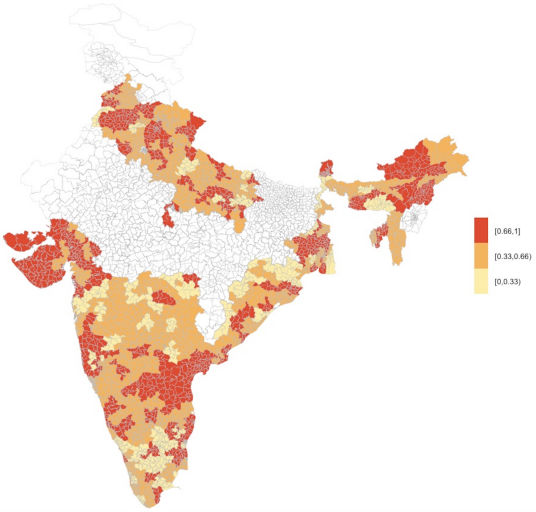
Data Source: Post-Poll Surveys and ECI Election Reports.

Figure C.2—Prob(Same Party Wins PC and AC)

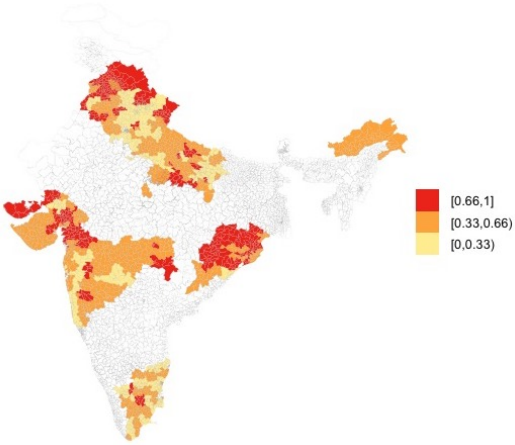
(a) Sync = 0 (Full Sample)



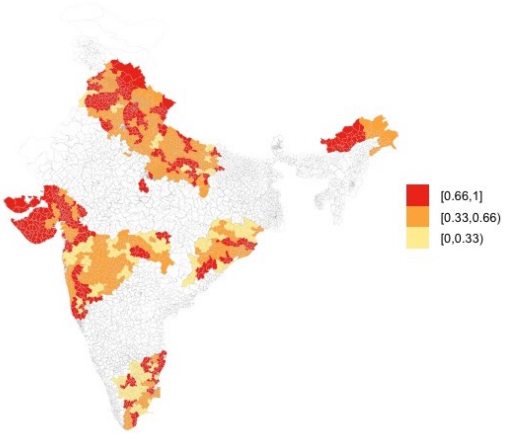
(b) Sync = 1 (Full Sample)



(c) Sync = 0 (180-Day Sample)

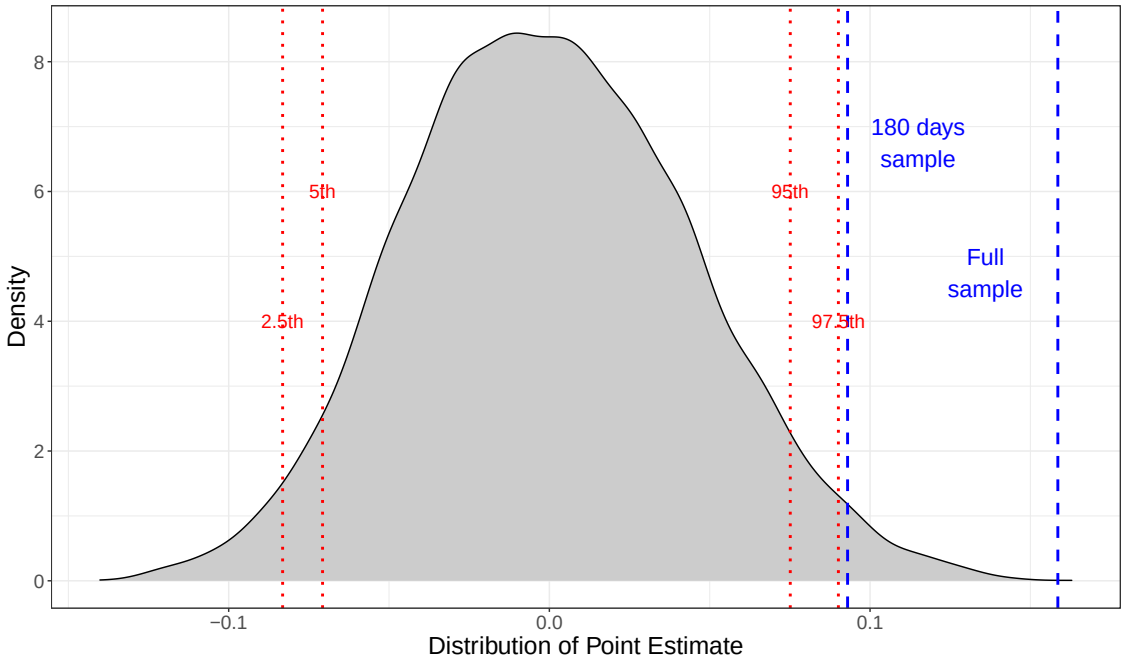


(d) Sync = 1 (180-Day Sample)



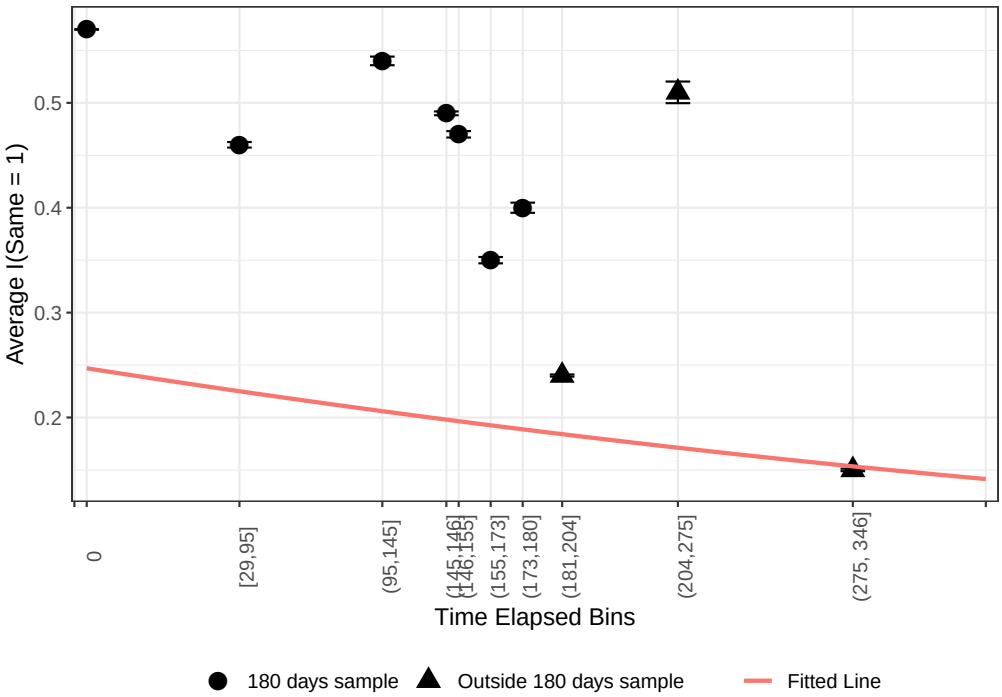
Notes: The figure presents a heatmap of the probability of winning both the AC and PC for the full sample (Panels (a) and (b)) and for the 180-day sample (Panels (c) and (d)).

Figure C.3—Simulated Distribution of the Point Estimate of Interest



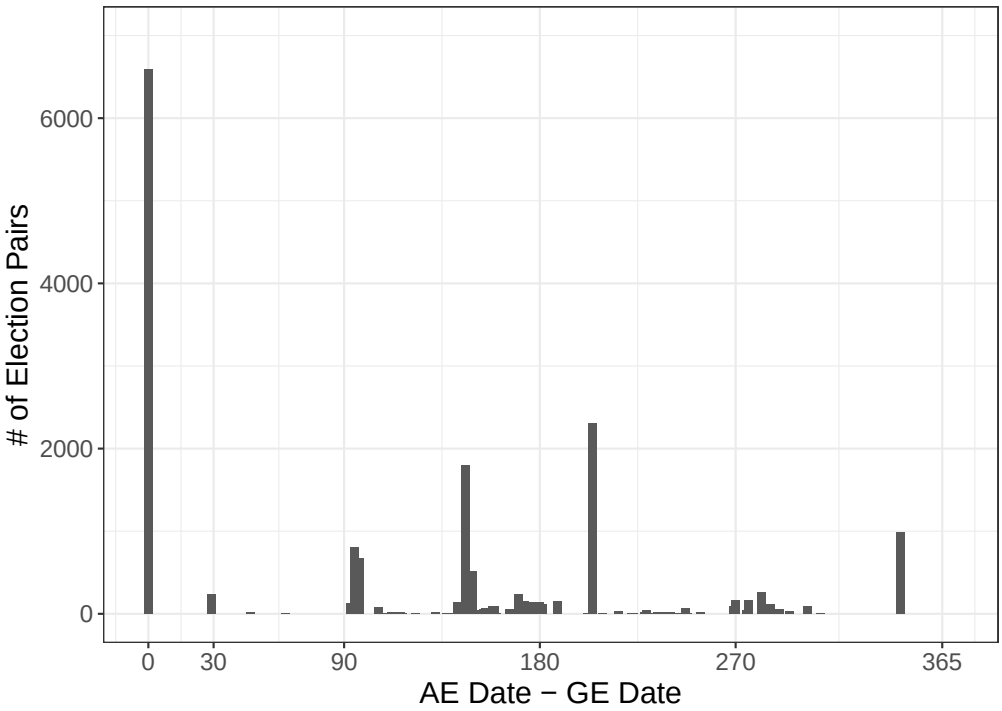
Notes: This figure plots the empirical probability density function of the γ coefficient estimated using Equation 3.2 on 10,000 replicates simulated by randomly assigning synchronization in our dataset. The red lines mark the 2.5th, 5th, 95th and 97.5th percentile of the distribution, and the dashed (blue) line represents the estimated coefficient for the full sample and the main sub-sample with 180 days as in Table 3.5.

Figure C.4—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 C.5—Election Pairs by Distance Time



Notes: The figure presents a distribution of election pairs by the gap in days between the state assembly election (AE date) and the national election (GE date).

3.9 Appendix: 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.[35] 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 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

[35] 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

additional time for broadcasts/telecast for a state assembly election when synchronized with the national election.[36] 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.[37]

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.[38] If a state has multiple phases, the election for both the ACs and PCs for the same state should are synchronized.

3.10 Appendix: 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 as-

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

[37] 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.

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

sembling 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.

3.11 Appendix: Robustness

Table C.11 presents various robustness tests on the estimated probability for the 180-day sample. Column 1 presents the result replicated from Column 3, Table 3.5 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.[39]

The next set of estimates (Columns 5–8) in Table C.11 present the coefficients for changes

[39]There was only one instance (in May 2008) of re-districting constituency boundaries in our study period (1977-2018) for a fraction of the constituencies allowing us to introduce constituency level time-trends.

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 yields a lower estimate at 7.9 percentage points, but remains 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 geospatial characteristics from the SHRUG database (Asher, Lunt, Matsuura, and Novosad, 2021), and show that the estimated effects are meaningfully large (Appendix Table C.12). 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 C.13).

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 C.3 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 3.4. 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 C.4. 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 C.4 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 C.5. Appendix Figure C.4 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.

3.12 Appendix: Turnout Calculations in US and UK Elections

United Kingdom

Elections in the UK usually happen on the first Thursday in the month of May. There are broadly 3 types of elections: Local council elections, General elections (Westminster Parliament) and European parliament elections.

European parliament elections are different since voters choose a party (not an individual

party candidate) or an independent candidate. There is a proportional representation system in this election. While the local and general elections follow the first-past-the-post, thus, we keep the European parliament elections aside when thinking about synchronized elections in the UK context. General elections to the Westminster Parliament are scheduled every 5 years unless there is a call for early elections. I consider the 2005, 2010 and 2015 general elections in the UK as they happened according to the normal schedule.

Local council elections happen every year in the UK. The local elections can be for non-metropolitan county council, unitary authorities, district councils (metropolitan boroughs) or London Boroughs. The local government structure varies across UK. The elections for local councils are scheduled every 4 years. Additionally, some councils have whole council up for election every year, while some have 1/3rd of council up for election every year and no election in the fourth year, while some have 1/2 of council up for election every year. We consider only the local authorities where whole council goes for election whenever scheduled. The list of elections we consider is as follows:

(1) London Borough Council elections happened in 2006, 2010, 2014 and 2018. The 2010 local election was synchronized with general election while in the other years it was unsynchronized. We match the 2006 local election (LE) with 2005 general election (GE) and 2014 LE with 2015 GE.
(2) 34 county councils have whole council up for election every 4 years and they happened in 2005, 2009, 2013 and 2017. The 2005 LE was synchronized with the GE. We match 2009 LE with 2010 GE and 2013 LE with 2015 GE.
(3) 129 district councils and 30 unitary councils have whole council up for election every 4 years and they happened in 2007, 2011, and 2015. The 2015 LE was synchronized with 2015 GE, we match the 2007 LE to 2005 GE and 2011 LE to 2010 GE.
(4) 2 unitary councils have whole council up for election every 4 years and they happened in 2005, 2009, 2013 and 2017. The 2005 LE was synchronized, we match 2009 LE with 2010 GE and 2013 LE with 2015 GE.

We calculate the average turnout differences for each type of local elections between the years when the elections are synchronized with the general elections and when they are un-synchronized. The turnout change reported in Table C.19 is the overall average turnout differences across all local elections.

United States

We examine turnout in Presidential and midterm elections in the US for the period 1992-2018. During Presidential elections, the elections for the executive (President) and legislatures (House of Representatives) happen simultaneously, while during midterm elections only the legislatures get elected. The average turnout in Presidential elections during the aforementioned period is 57.77%, while that for midterm elections is 40.97%, yielding the 41% increase in turnout during simultaneous elections reported in Table C.19.

3.13 Appendix: Model

We here 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 helps us interpret the empirical results using a coherent framework.

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. We 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, campaigning by candidates 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.[40]

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 $\theta^c \in \Theta$, where Θ is the set of all possible θ^c. Voter i's utility from candidate c getting elected is given by

[40] 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).

$$u_i(P^c, \theta^c; \lambda_i) \;=\; \lambda_i u_1(P^c) + (1-\lambda_i) u_2(\theta^c) \tag{3.3}$$

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. It is of course possible to model preference of voters where party and candidate characteristics are non-separable in the utility function. Additive separability assumption makes a voter's consideration of θ^c independent of how salient party identity is for her. This decoupling makes our analysis simpler and brings out the implication of behavioral constraints more sharply.

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 parties, then all voters would have voted for candidate A.[41] 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 about this distribution. We assume that $u_2(\theta^c)$ is uniformly distributed. Specifically, the distribution is given by

$$u_2(\theta^c) \sim U[\underline{u}_2, \bar{u}_2] \quad \text{where} \quad \underline{u}_2 = \min_{\theta^c \in \Theta} u_2(\theta^c) \;\text{ and }\; \bar{u}_2 = \max_{\theta^c \in \Theta} u_2(\theta^c).^{42}$$

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.[43] Due to the salient nature of parties in elections, the information about candidates' party affiliation is much more easily available to voters,

[41] 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 $u_1(P^A) < u_1(P^B)$.

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

[43] 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.

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 both θ^A and θ^B perfectly. Therefore, the voter either acquires full information about both the candidates or acquires no information at all. We therefore do not allow a voter to acquire information about only one candidate. This simplifies our analysis without sacrificing on the main insight of the model.

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 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 relative to her true preference. In contrast, if she chooses to acquire the information about θ^c, then she has all information necessary to check if equation (3.3) 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

$$u_i(P^A, \theta^A; m_i) \geq u_i(P^B, \theta^B; m_i) \tag{3.4}$$

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

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.[44] We refer to the 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. To emphasize, the informational and behavioral constraints do not change the preference of the voters. In our model, λ_i is the salience of party in voter's preference, which we take as given. The distortion in salience is therefore not in voter's preference but arises through her actions. When the voter adopts "party" rationale, she behaves as if she cares only about party identity of candidates.

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

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

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 possi-

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

bly 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 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

$$(1-\lambda_i)(\bar{u}_2 - \underline{u}_2) - \lambda_i(u_1(P^A) - u_1(P^B)) \geq 0 \tag{3.5}$$

Hence, there exists a $\lambda^* \in (0,1)$ such that for all voters with $\lambda_i > \lambda^*$, the equation (3.5) 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

$$(1-\lambda_i)\frac{\bar{u}_2 - \underline{u}_2}{2} - \lambda_i(u_1(P^A) - u_1(P^B)) \geq \kappa \tag{3.6}$$

As before, there exists $\bar{\lambda} \in (0,1)$ such that for all voters with $\lambda_i > \bar{\lambda}$ the equation (3.6) is not satisfied and hence they would adopt the "party" rationale. Moreover, comparing equations (3.5) and (3.6) 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. Let s^A be the share of such voters. The calculation of s^A is shown in Appendix Section 3.14. 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:

$$\begin{aligned} V^A &= (1 - F(\bar{\lambda})) + F(\bar{\lambda})s^A + \sigma \\ &= v^A + \sigma, \text{ say.} \end{aligned} \tag{3.7}$$

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

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

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 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 positive when elections are simultaneous. Therefore, during simultaneous elections, the voters may be behaviorally constrained to vote using a uniform rationale across elections if the cognitive cost is high enough.

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 3.13) 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 $E^{'}$.

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 $E^{'}$ may now be constrained to choose the same rationale across both elections, if the cognitive cost is high enough. Suppose the cognitive cost of choosing different rationales is $c_0 > 0$. From our analysis in Section 3.13 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 suffer from cognitive constraint 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 cost, they will have to weigh in the benefit and cost of

choosing different rationales across simultaneously held elections.

We therefore first analyze the *choice of rationale* of these voters, if they were to make the same choice across both elections. 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 maximum 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 $E^{'}$. This is also her maximum payoff loss since, her voting decision in $E^{'}$ can remain the same even after acquiring the information. Hence, if the voter wishes to choose the same rationale across both elections, she would optimally choose the "party" rationale if

$$(1-\lambda_i)\frac{\bar{u}_2-\underline{u}_2}{2}-\lambda_i(u_1(P^A)-u_1(P^B)) \leq \kappa+\kappa^{'} \tag{3.8}$$

For all voters with $\lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$ 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 (3.8) is satisfied for all voters with $\lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$. This implies that all voters with $\lambda_i \in (\bar{\lambda}(\kappa^{'}), \bar{\lambda}(\kappa))$ would choose "party rationale" for both elections, if they were to make a uniform choice.[45] This allows us to state our first result. We first define the following constant:

$$c^* \;=\; (1-\bar{\lambda}(\kappa^{'}))\frac{\bar{u}_2-\underline{u}_2}{2}-\bar{\lambda}(\kappa^{'})(u_1(P^A)-u_1(P^B))-\kappa$$

We then have the following:

Result 1. *If $c_0 > c^*$, then in the election with cheaper information cost, the salience of the candidates' party is, on average, higher in voters' preferences when that election is held simultaneously 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 3.14. Result 1 highlights that when voters are sufficiently cognitively constrained, simultaneous elections increase the

[45]The conclusion would remain the same if the voters compare minimum payoff loss from changing rationales.

salience of parties in their voting decisions. Result 1 also gives us the following corollary:

Observation 1. *If $c_0 \geq c^*$, voters in the election with cheaper information cost acquire less information when it is held simultaneously with another election, compared to when they are held in sequence.*

Observation 1 points out that even though voters ideally would have acquired more information during simultaneous elections (since there are two elections, instead of one), cognitive constraint leads them to reduce their information acquisition. 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. *If $c_0 \geq c^*$, fraction of voters engaged in split-ticket voting goes down 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. *If $c_0 \geq c^*$, 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.

3.14 Appendix: Derivations and Proofs

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 follows a triangular distribution in the range $[-(\bar{u}_2 - \underline{u}_2), (\bar{u}_2 - \underline{u}_2)]$.

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

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

Equation (3.5) implies that the expression inside the parentheses is between 0 and 1. The last inequality follows from that fact. 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

$$s^A = \int_0^{\bar{\lambda}} r^A(\lambda_i)\frac{f(\lambda_i)}{F(\bar{\lambda})}d\lambda_i$$

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

Proof of Result 1

Proof. All the voters with $\lambda_i \in (\bar{\lambda}(\kappa'), \bar{\lambda}(\kappa))$ would choose the uniform "party" rationale if their cognitive constraint binds, i.e., if for all $\lambda_i \in (\bar{\lambda}(\kappa'), \bar{\lambda}(\kappa))$ we have,

$$c_0 \geq (1-\lambda_i)\frac{\bar{u}_2 - \underline{u}_2}{2} - \lambda_i(u_1(P^A) - u_1(P^B)) - \kappa$$

The RHS is decreasing in λ_i. Therefore, the above inequality holds for all $\lambda_i \in (\bar{\lambda}(\kappa'), \bar{\lambda}(\kappa))$ if

$$c_0 \geq (1-\bar{\lambda}(\kappa'))\frac{\bar{u}_2 - \underline{u}_2}{2} - \bar{\lambda}(\kappa')(u_1(P^A) - u_1(P^B)) - \kappa = c^*$$

The fraction of voters who use "party" rationale in E (the election with a cheaper infor-

mation cost), when held sequentially with $E^{'}$, is given by

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

Suppose $c_0 \geq c^*$. Then the same fraction, when E and $E^{'}$ are synchronized, 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 $E^{'}$. □

Proof of Result 2

Proof. The only change in the extent of split-ticket voting between synchronized and sequential elections is due to 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

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

where

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

Hence, the result follows. □

Proof of 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 $r^A(\lambda_i) < 1$ for all $\lambda_i \leq \bar{\lambda}(\kappa)$. To complete the proof we notice that the probability that party 1 wins both elections under synchronized elections is given by

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

□

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