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## **Ethnic conflict: the role of ethnic representation**

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**Abstract:** We investigate the impact of the political representation of minority groups on the incidence of ethnic conflict in India. We code data on Hindu-Muslim violence and Muslim political representation in India and leverage quasi-random variation in legislator religion generated by the results of close elections. We find that the presence of Muslim legislators results in a large and significant decline in Hindu-Muslim conflict. The average result is driven by richer states and those with greater police strength. Our results suggest that the political empowerment of minority communities can contribute to curbing civil conflict.

**Key words:** conflict, violence, religion, political representation, police, close elections

**JEL classification:** D72, D74, J15

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## 1 Introduction

Civil violence, which includes ethnic, religious, and racial conflict, has been rising through the past half century (Gleditsch et al. 2002), sparking research aimed at identifying causes and hence solutions to this problem. A number of studies point to income shocks as a cause (Miguel et al. 2004; Bolhken and Sergenti 2010; Do and Iyer 2010), but the evidence on the importance of social divisions and political grievances is more limited (Blattman and Miguel 2010: 45). In this paper, we provide what is possibly the first investigation of the role of political representation. Our hypothesis is that the state is less committed to managing inter-group tensions in situations where the minority group is victimized and that increasing the political representation of the minority group can redress this. We use data from India, which has a long history of religious conflict between the Hindu majority and the Muslim minority population. In particular, we investigate the extent to which raising the share of Muslim legislators in state assemblies influences Hindu-Muslim violence.

The observed patterns of Hindu-Muslim violence suggest that Muslims are more often the victims (Mitra and Ray 2014). Muslims are under-represented in elected office, constituting only 5 per cent of members in the national legislature in 2019 (down from nearly 9 per cent in 1980), while constituting 14 per cent of the population. In order to conduct this study, we combine unique data on the religious identity of state legislators with data on Hindu-Muslim violence. We coded data on the religious identity of all political candidates who contested elections between 1980 and 2010 using their names and surnames (coded for and discussed in Bhalotra et al. 2014), and we updated the Varshney-Wilkinson database on religious conflict until 2010. We then geo-coded the violence incidents, which allows us to use information on the district and the electoral constituency in which the conflict incidents take place.

We account for the potential endogeneity of the identity of state legislators using a close elections strategy (Lee 2008), based on the idea that the outcomes of close interreligious elections are quasi-randomly generated. Close interreligious elections take place in 14 per cent of constituency years, with 7 per cent being won by Muslims. The average administrative district has 10 legislators, so when one constituency in the district is won by a Muslim in a close election against a Hindu, the share of Muslim legislators in the district increases (by one-tenth on average). At the district level we use an IV strategy, instrumenting the fraction of constituencies in the district won by a Muslim with the fraction of constituencies in the same district won by a Muslim in a close election against a non-Muslim. To ensure that the instrument satisfies the exclusion restriction, we control for the fraction of constituencies in the district that had close elections between Muslims and non-Muslims in both the first and second stages.<sup>1</sup>

We find that increasing the share of Muslims in state legislatures significantly reduces Hindu-Muslim conflict. In particular, we find decreases in the probability that a conflict incident takes place but also a reduction in the probability that people were injured or dead in the incident, which points to a reduction in the severity of the conflict. We confirm that this result holds conditional upon the party affiliation of the legislator and that it is robust to a number of specification checks, such as including or excluding the election years, the state of Jammu and Kashmir, or the months with President's rule, and also to restricting the sample to district-months that had at least one inter-religious election.

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<sup>1</sup> This IV strategy has been used by us in several previous papers (see e.g., Clots-Figueras 2011, 2012; Bhalotra and Clots-Figueras 2014; Bhalotra et al. 2021a).

The effectiveness of Muslim legislators in preventing religious violence is increasing in the strength of the police force, being four times larger in states with above-median as opposed to below-median police strength. This is consistent with a complementarity between leader preferences and state capacity to limit violence. The relative effectiveness of Muslim leaders is also significantly greater in richer than in poorer states (indicated by per capita expenditure), with a possible explanation being the losses from violence are greater in richer states.

Our study brings together the literature on political identity and the literature on conflict, making a unique contribution to both. Our contribution to the literature on the determinants of intergroup conflict lies in providing the first results to support the view that the political representation of minorities can lower conflict. Previous research on the causes of ethnic conflict has identified factors such as polarization (Esteban et al. 2012), property rights institutions (Boone 2017), climate change (McGuirk and Nunn 2020), and inter-group inequality in economic resources or economic growth (Mitra and Ray 2014, 2019; Sharma 2015). Previous work on Hindu-Muslim violence in India has considered the role of shared business or economic interests (Varshney 2002; Jha 2013), economic downturns (Bolhken and Sergenti 2010; Sarsons 2015), differential economic progress between Hindus and Muslims (Mitra and Ray 2014, 2019), trust and household economic vulnerability (Gupte et al. 2014), political competition (Wilkinson 2004),<sup>2</sup> and the role of specific political parties (Mitra and Ray 2019; Nellis et al. 2016). Other papers have focused on the relationship running in the other direction, from religious violence to future political outcomes, showing that Hindu-Muslim violence increases the vote share of the Hindu nationalist party (the BJP) in the next election (Iyer and Shrivastava 2018) but only in places in which economic complementarities between the religions are limited (Jha 2014).<sup>3</sup>

Leader identity affects policy outcomes in ‘citizen-candidate’ models (Osborne and Slivinski 1996; Besley and Coate 1997) in contrast to the classic Downsian models in which only the identity of the median voter matters (Downs 1957). A growing empirical literature has examined how a leader’s gender or ethnicity shapes the allocation of government spending. There is some evidence that leaders divert public resources towards themselves or their social group (Besley et al. 2012; Burgess et al. 2015; Chin and Prakash 2011; Pande 2003; Fisman et al. 2015; Baskaran et al. 2021) or that public policies reflect leader preferences (Chattopadhyay and Duflo 2004; Bhalotra et al. 2014, 2021a). We provide some of the first evidence for religious identity<sup>4</sup> and the first attempt to study how more equal representation in a competitive electoral process can influence conflict. Some studies examine crimes against women or low-caste sections of society (Iyer et al. 2012; Iyer and Triyana 2022; Girard 2021), exploiting the implementation of quotas, but quotas can affect outcomes through channels other than changing leader identity, such as by stimulating in-group bias (Bhalotra et al. 2023) or backlash (see e.g., the review in Clots-Figueras and Iyer *forthcoming*).

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<sup>2</sup> Wilkinson (2004) finds that the proportion of Muslims in the state cabinet has no significant effect on religious violence. His state-level analysis does not examine the presence of Muslim legislators overall or in specific districts.

<sup>3</sup> While systematic empirical analysis of the effects of politicians on Hindu-Muslim violence is scarce, leading politicians have been implicated in such incidents. For instance, Prime Minister Narendra Modi has been accused of gross negligence and failure to prevent violence against Muslims during the Gujarat riots of 2002 when he was Chief Minister of that state.

<sup>4</sup> Henderson and Kuncoro (2011) and Meyersson (2014) examine the policy impact of Islamic parties. Our study examines the effect of the legislator’s personal religious identity, after controlling for party identity. Our own work has analysed impacts of the religion of the legislator on the public goods provision (Bhalotra et al. 2014) and on abortion (Bhalotra et al. 2021a).

The paper is structured as follows: Section 2 describes the context of religious violence in India, Section 3 describes our data, and Section 4 lays out our empirical strategy. Section 5 details our results, and Section 6 concludes.

## **2 Religious minorities and religious violence in India**

With more than 172 million Muslims, India is home to the world's third-largest Muslim population. Muslims constituted 14.2 per cent of the population in the 2011 census, and they form the single-largest religious minority in India. Hindus are the religious majority, constituting 79.8 per cent of the population. The Indian constitution enshrines secularism by conferring the fundamental right to freely 'profess, practice, and propagate religion'. Muslims in India are more likely to live in urban areas (36 per cent compared to 28 per cent of Hindus) and are, on average, poorer than Hindus: 31 per cent of Muslims were below the poverty line in 2004–05, which is much higher than the figure of 21 per cent for upper-caste Hindus and comparable to the figure of 35 per cent for lower castes (Government of India 2006). Survey evidence shows that Muslims feel disenfranchised and somewhat marginalized in the allocation of public services and public sector jobs (Basant and Shariff 2009; Das et al. 2011). While Muslims' socioeconomic position is on average similar to that of the lower-caste Hindu population, there are affirmative action programs in the economic and political spheres for lower-caste Hindus. While the lowest castes and tribes have reserved seats in state assemblies and local governments, there are no political quotas for Muslims.<sup>5</sup> There are no affirmative action programs for Muslims in central government positions, but several states have included Muslims as part of quotas in civil service and educational institutions for Other Backward Classes (Government of India 2011).

Incidents of violence between Hindus and Muslims have occurred in India for several centuries. For example, there are numerous instances of battles between Hindu and Muslim rulers. In more recent periods, 38 per cent of towns experienced religious violence over the period 1850–1950 (Jha 2014, calculations based on data from Wilkinson 2004). Over the period 1980–2010, where our analysis is focused, incidents of Hindu-Muslim violence occurred in every Indian state, and every year witnessed such incidents.

## **3 Data and variable construction**

### **3.1 Ethnic conflict: data on religious violence**

We updated a database on Hindu-Muslim violence originally put together by Ashutosh Varshney and Steve Wilkinson (Varshney and Wilkinson 2006). The original data set was based on newspaper articles published in *The Times of India* (Mumbai edition), a national newspaper, over the period 1950–95. This was the first systematic data set on religious violence in India over time and has been used in several previous academic studies. We extend this database until 2010, using the same methodology as the original database (as documented in Varshney 2002, Appendix 3) and building upon the work of other researchers (notably Mitra and Ray 2014, who extend the database until 2000).

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<sup>5</sup> Jensenius (2013) discusses the historical reasons underlying the absence of electoral quotas for Muslims.

To create the extended data set, we examined every article in daily issues of the Mumbai edition of the *Times of India* newspaper. We use the same criterion as the original database to identify religious violence, namely ‘an incident involving members of different religious communities (or a clash with police which has some religious precipitating cause) which results in deaths, injuries or property damage’. Manual examination of newspaper articles is required because most of the articles dealing with religious violence do not use the phrases ‘religious’ or ‘Hindu’ or ‘Muslim’. Instead, the religious dimension is usually mentioned only indirectly using language such as ‘a youth belonging to a minority community opened fire injuring two persons’. Careful reading and judgement are also required to exclude incidents that do not fit the definition above; such examples include descriptions of religious tensions or disputes that do not escalate to violence, incidents that involve members of two different castes (rather than religion), or incidents that do not have a religious precipitating cause. We should note that the data on the number of people killed in such incidents is likely to be underestimated, since some of those reported as injured may die in later days, and those subsequent deaths may not be reported in the same newspaper.<sup>6</sup> Most reports indicate the town or city where the incidents took place, enabling us to match specific incidents to districts and states. Our analysis is based on 1,124 incidents reported over the years 1980–2010. We are able to identify the district for all but one incident, and the specific town or city for 97 per cent of these incidents.

This data set is likely to under-report smaller incidents of violence that did not make it to the pages of the *Times of India*, a national newspaper. So, it is possible that our database does not capture all the violence that occurred during this period. The advantage of this approach is that it allows a consistent methodology over a long period of time. Close reading of the newspaper articles in question enables us to isolate incidents where religion was a precipitating cause of violence rather than other reasons. Other sources of data, such as the UCDP cross-country database of violent incidents, rely on varying media sources over time, which could compromise comparability and potentially introduce variation over time on reporting biases. Official sources, such as the National Crime Records Bureau, do not identify cases of religious violence separately. The Ministry of Home Affairs only occasionally provides such data in response to parliamentary questions,<sup>7</sup> but it is not clear how they define communal violence, and these do not separately identify those violence cases that are between Hindus and Muslims. For all these reasons, almost all studies of religious violence in India have relied on the Varshney-Wilkinson database and its extensions.

The updated Varshney and Wilkinson (V-W) data set shows some interesting trends. First, we see that the incidence of Hindu-Muslim violence is generally lower in the post-1995 period compared to the period 1980–95, except for the upsurge in violence in 2002, which was concentrated in the state of Gujarat (Figure 1A). A similar trend is visible for the number of people killed in such incidents. This overall decline in the incidence of religious violence is in line with the overall decline in other violent crimes in India (such as murders) in the period after 1990. Second, despite the observed decline in each state, there remains a strong correlation between the incidence of violence in the two periods, i.e. states that witnessed a higher number of incidents before 1995 also witnessed a higher number of incidents after 1995 (Figure 1B). This is consistent with the similar

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<sup>6</sup> For widespread incidents such as the violence in the state of Gujarat in 2002, a number of people were originally classified as ‘missing’ and later declared legally deceased when they could not be located for seven years.

<sup>7</sup> In 2022, the Ministry of Home Affairs said that there had been 3,399 cases of communal or religious violence in India over the period 2016–20 (<https://thewire.in/government/india-communal-religious-riots-2016-2020>).

continuation of violence patterns being related to relative incomes of Hindus and Muslims (Mitra and Ray 2019).

Our main outcome variables will be an indicator for whether the district experienced a violent inter-religious incident (sometimes called a ‘Hindu-Muslim riot’) in a specific month, and the number of incidents in that district or electoral constituency in the month. Given that most districts experienced only one incident in a given timeframe (84 per cent of district-year observations have exactly one incident), the correlation between the dummy variable and the number of incidents variable is 0.80. We also construct an indicator for whether the district experienced an incident in which at least one person was injured or an incident in which at least one person was killed, to indicate whether the incident was exceptionally violent. As described above, the lack of precision in the deaths data means that this variable is likely an underestimate of the true rate of extremely violent incidents.

We see that incidents of religious violence are relatively rare events in our data. Only 0.6 per cent of district-month observations have such incidents over the timeframe 1980–2010 (Table 1, panel A). Of these, about 62 per cent involve at least one injury and 55 per cent involve at least one death. While these are summary statistics for our main regression sample that exclude the Muslim majority state of Jammu and Kashmir and also exclude months when elections took place, the average incidence of such violence does not change much when we include those observations (Appendix Table A1, panel A).

### **3.2 Data on Muslim political representation**

We construct a unique database on the religious identity of state legislators. Since law and order is under the purview of state governments, this is the relevant level of government to examine when analysing intergroup conflict. India is a federal country, with a parliamentary system of government at both the federal and state levels. Elections are held every five years, on a first-past-the-post system in single-member constituencies. Elections are very competitive in India, with more than 100 parties participating in recent national elections. There are no major ‘Muslim-only’ parties, but some parties appeal more to Muslims than others.

We obtained data on state legislative elections from the Election Commission of India, which contain information on the name, sex, party affiliation, and votes obtained by every candidate in every election held in India since independence. We used the legislator names to infer religious identity and classified candidates as Muslim or non-Muslim. While Muslim names are often readily identifiable, it is difficult to distinguish Hindu names from those of other religious minorities such as Sikhs, Jains, Buddhists, or Christians who constitute approximately 6 per cent of India’s population. Thus, we effectively compare Muslim legislators to those of all other religions, with Hindus being the most numerous among them, given that they are around 80 per cent of the population.

To minimize measurement error, we had two independent teams working on the classification of legislator names. The first team used a UK software program called Nam Pehchan, which was able to classify about 72 per cent of the names, and then they manually classified the rest. A second (India-based) team performed the whole classification manually using their judgment gained from prior work with the Election Commission files. We classified a legislator as Muslim only if both teams classified the same as Muslim. Disagreements between the two classifications were resolved by the authors on a case-by-case basis. After this procedure, we remained doubtful of the religious identity of less than 0.5 per cent of candidate names and classified them as ‘non-Muslim’ as a tie-breaking rule. These data have been used earlier in Bhalotra et al. (2014, 2021a).

We analyse data over the period 1980–2010 for 19 major states of India that account for over 95 per cent of the total population. The state of Jammu and Kashmir is excluded from our main results because it is the only Muslim majority state in India and was governed under different articles of the Constitution than other states.<sup>8</sup> Our data show that the share of Muslim legislators averages 5.6 per cent in our regression sample (7.7 per cent when including the state of Jammu and Kashmir), which is considerably less than their population share of 13–14 per cent; in all states other than Jammu and Kashmir, the fraction of Muslim legislators is lower than their population share.

### **3.3 Matching the data on religious violence and political representation**

Ideally, we would like to match the location of violent incidents with the religious identity of the local state representative from that area. Data constraints prevent us from performing a complete matching between incident location and electoral constituency from which the representative is elected. First, we are unable to find the exact city or town location for 3 per cent of the incidents, though we are able to locate the administrative district of all but one incident. Second, even when we are able to identify the city, many larger cities contain multiple electoral constituencies, making it difficult to conduct a precise matching.<sup>9</sup> For both of these reasons, we conduct a district-level analysis, where we match violence data at the district level (e.g., whether any incident took place, number of incidents) to the average religious composition of the state legislators from that district (i.e. the fraction of legislators from that district who are Muslim). An administrative district in India has on average 10 electoral constituencies. Because districts often split over time, we aggregate all data to the 1981 district boundaries for our analysis. This aggregation issue leads us to use, for the main analysis, an instrumental variables strategy, although we also report estimates from a regression discontinuity design applied to a subset of the data.

## **4 Empirical strategy: identifying the effects of legislator identity**

### **4.1 The close elections design**

There are two challenges to estimating the impact of Muslim legislators on the incidence of religious violence. The primary challenge is that the leader identity is not randomly assigned. In other words, the election of Muslim as opposed to non-Muslim legislators may be correlated with voter preferences or other constituency characteristics that are correlated with the probability of religious violence. India has a first-past-the-post election system that allows us to address this challenge using a regression discontinuity design (RDD), which involves comparing constituencies where Muslims narrowly lost against non-Muslims to places where Muslims narrowly won against non-Muslims. The idea is that when the victory margin is small, the identity of the winner is determined in an ‘as-if’ random manner so that such comparisons would lead to a valid causal estimate. We examine whether the identifying assumptions hold. If they do, the estimated equation is:

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<sup>8</sup> The state was dissolved and reorganized into two union territories in October 2019.

<sup>9</sup> We are in the process of reconstructing the database with more information on the exact neighbourhood within cities where the incident took place, which will enable us to match the incident location to the constituency for most of the cases.



$$Y_{it} = a + b \text{MuslimLegislator}_{it} + c \text{MuslimLegislator}_{it} * f(M_{it}) + d f(M_{it}) + e_{it} \quad (1)$$

where  $Y_{it}$  is the measure of conflict in constituency  $i$  and period  $t$ , and  $\text{MuslimLegislator}_{it}$  equals one if constituency  $i$  is represented by a Muslim legislator at time  $t$ . The running variable  $M_{it}$  is defined as the vote share difference (in the previous election) between the Muslim and non-Muslim candidates. Note that  $\text{MuslimLegislator}_{it}$  would equal one if  $M_{it} > 0$  and zero if  $M_{it} < 0$  (i.e. varies discontinuously at the zero threshold). Equation (1) then estimates the impact of  $\text{MuslimLegislator}_{it}$  being one after controlling for the continuous effects of the vote margin via a flexible function  $f(M_{it})$ , which is allowed to differ on each side of the discontinuity.

The additional problem in implementing our research strategy is that we are not able to match incidents (our dependent variable) to constituencies. So, we conduct an instrumental variables version of the RDD strategy outlined above. Instead of a dummy variable, we use the fraction of Muslim legislators in an administrative district (which has 10 electoral constituencies on average) as our explanatory variable and use the share of Muslims that win a close election against a non-Muslim as an instrument for this explanatory variable. This procedure is equivalent to aggregating over all constituency-specific discontinuities within a district and has been used before (see Clots-Figueras 2012; Bhalotra and Clots-Figueras 2014; Bhalotra et al. 2014; Bhalotra et al. 2021a). Before we describe this IV-RDD approach more formally in Section 4.3, we verify that our setting satisfies the assumptions needed to conduct the RDD estimation.

## 4.2 Validity of the RDD design

In this section, we confirm the validity of the RDD that underlies our IV identification strategy (Imbens and Lemieux 2008). First, we test for vote manipulation around the zero-vote margin and find that the vote margin is continuous in the neighborhood of zero, the threshold that separates the Muslim victory from the non-Muslim victory (Figure 2A). A formal test estimating the difference in the densities on either side of the zero point (McCrary 2008) confirms this—the estimated difference being a statistically insignificant -0.0038 (Figure 2B).

Second, we examine whether constituency demographics vary discontinuously at the zero-vote margin, in the spirit of a test of balance between treated constituencies (in which a Muslim narrowly won against a non-Muslim) and control constituencies (in which a non-Muslim narrowly won against a Muslim). Using demographic characteristics from the 2001 census at the constituency level, we show RDD plots for the fraction of the population that is urban, the fraction of population belonging to Scheduled Castes and Tribes, the female population share, and the average literacy rate (Figures 3A–3D). These characteristics are graphed against the victory margin on the x-axis, with the lines representing a non-parametric (Lowess) fit on either side of the discontinuity. None of these characteristics exhibits a discontinuity at the zero-vote margin. The share of Muslims in the population (at the district level) is also continuous across the zero-margin threshold (Figure 3E).

Third, we examine political characteristics of the constituency and find that electoral races with Muslim winners are not significantly different from those with non-Muslim winners in terms of total votes cast, number of candidates, and the participation of Muslims and women as candidates (Figures 4A–4D). However, Figures 4E–4G show that Muslim winners, even in close elections, are significantly more likely to belong to the Indian National Congress (INC) party or the Bahujan Samaj Party (BSP) and significantly less likely to belong to the Bharatiya Janata Party (BJP). This is consistent with the BJP often espousing a vision of India as a Hindu nation while the other parties do not. There is no difference in the probability of Muslim winners belonging to Communist parties (Figure 4H), and we further verify that Muslim winners are not more likely to be incumbents compared to non-Muslims, which rules out incumbency effects explaining our

results (Figure 4I). To control for this imbalance in party identity, we will include in our regressions the fraction of seats in the district won by the INC, BJP, and BSP, ensuring that the effect we capture is the effect of the personal religious identity of legislators, over and above any political party effect.

### 4.3 District-level IV-RDD

The instrumental variables (IV) regression equation is as follows, where equation (2) is the second stage and equation (3) is the first stage:

$$Y_{dt} = \theta_d + \psi_t + \beta ML_{dt} + \lambda TC_{dt} + X_{dt} \eta + \varepsilon_{dt} \quad (2)$$

$$ML_{dst} = \theta_d + \psi_t + \kappa MC_{dt} + \mu TC_{dt} + X_{dt} \sigma + u_{dt} \quad (3)$$

where  $Y_{dt}$  is the religious violence variable for district  $d$  in period  $t$ , and the explanatory variable of interest is  $ML_{dt}$ , the share of constituencies in the district in which the elected state legislator is Muslim. The coefficient of interest is  $\beta$ , which identifies the impact of Muslim relative to non-Muslim legislators.  $\theta_d$  represents district fixed effects, which control for time-invariant district characteristics including the history of Muslim presence in the district, sluggish demographic characteristics including the share of the district population that is Muslim, the slowly moving component of public goods infrastructure, and time-invariant voter preferences. Month of the year fixed effects ( $\psi_t$ ) afford a flexible representation of aggregate shocks or nationwide policies that may have influenced both religious violence and the religion mix of politicians.

$ML_{dt}$  is instrumented with the share of constituencies in the district won by Muslims in close elections against non-Muslims in the same year,  $MC_{dt}$ . To account for potential selection into close elections, we control for the fraction of constituencies in the district that were contested in close elections between Muslim and non-Muslim candidates in both the first and second stages. Our IV estimates thus compare outcomes in districts where Muslims won close elections to those where they lost close elections, controlling for the potentially non-random occurrence of such elections. This also controls for any direct effects of having close elections between the religions, such as greater political mobilization by parties or greater issue salience generated by the ‘excitement’ of a close contest.

$X_{dt}$  is a vector of other district characteristics that could cause omitted variables bias. In our context, this includes the party composition of state legislators from the district. Specifically, we include the fraction of representatives from the Indian National Congress (INC), the Bharatiya Janata Party (BJP), and the Bahujan Samaj Party (BSP), which our analysis shows is correlated with the religious identity of legislators (see Section 4.2 and Figure 4). Since legislators are elected to five-year terms, this means that our explanatory variables are correlated during a given electoral term. We therefore cluster our standard errors at the district-election cycle level.

Regressions at the annual level can be problematic if the identity of the legislator changes during the year, as would be the case if a state assembly election occurred during the year. Under India’s parliamentary system, a newly elected legislator assumes office as soon as the election results are declared. Since we know the exact date of occurrence of a religious violence incident, and the dates and outcomes of state elections, we can run a more precise regression by using data at the district-month level. The actual month of the election is omitted when using the monthly data, since that is the period when the identity of the legislator is somewhat uncertain.

#### 4.4 First stage relationship and external validity

We now verify that aggregation of constituencies to districts does not invalidate our empirical strategy. A particular concern is that, if a Muslim winning a close election in a district was always matched by another Muslim candidate losing a close election in the same district, then the results of close elections would not change the district fraction of Muslim legislators. Figure 5A plots the average fraction of seats won by Muslim legislators in the district against the victory margin, defined as the difference in vote share between the Muslim and the non-Muslim candidates in each one of the electoral constituencies of the district, so that  $\text{margin} > 0$  denotes a Muslim electoral victory and  $\text{margin} < 0$  denotes a Muslim loss. We see that when a Muslim narrowly wins against a non-Muslim (i.e. when the vote margin is just larger than zero), there is a dramatic jump in the district share of Muslim legislators. In other words, if a Muslim wins a close election in any electoral constituency within a district, then the overall fraction of Muslim legislators in the (larger) administrative district rises significantly. This first stage effectively aggregates across all these points that are near the discontinuity.

Although the use of close elections ensures the internal validity of our estimates, the occurrence of close elections between Muslims and non-Muslims in a given district and year may not be random. However, we see that the occurrence of close inter-religious elections in India is not geographically concentrated: all states in our sample and nearly half of all the districts in our sample experience at least one close election between a Hindu and a Muslim over our sample period. Close elections occur across a wide range of voter preferences towards Muslims. This is seen in Figure 5B where we plot the margin of victory between the Muslim and non-Muslim candidate (when they are the top two vote-getters) against the share of votes obtained by Muslim candidates, a proxy for voter preferences using electoral constituency data. Among constituencies where the vote margin was 3 percentage points or less (i.e. close), the vote share of Muslim candidates varies considerably, from 16.5 per cent to 51.1 per cent. The treatment effect (effect of Muslim winning) may thus be regarded as representative of a range of political circumstances.

### 5 Results: ethnic representation curbs ethnic violence

#### 5.1 IV-RDD results

Table 2 shows the results from the 2SLS specification described in equations (2) and (3). We find that the probability of a religious violence incident is lower in districts with a higher share of Muslim legislators. This relationship is only statistically significant at the 10 per cent level (Table 2, column 1), but its magnitude is non-negligible. Our estimates indicate that one additional Muslim legislator in the district would, on average, increase the district proportion by 0.1 (since the average number of constituencies per district is 10) and therefore decrease the probability of a violent incident by 0.33 percentage points. This is large, given that such incidents occur with a probability of only 0.60 percentage points in a given district-month.

We also find a reduction in the probability of incidents incurring injury or death, which we interpret as a reduction in the severity of conflict. In particular, election of an additional Muslim legislator decreases this probability by 0.29 percentage points (Table 2, column 3). This is large if we consider that injuries and deaths can only take place if an incident has taken place and that cases with an injury or death occur with a probability of 0.48 percentage points at the district-month level. However, this relationship is no longer statistically significant if we consider indicators of violence severity such as the number of incidents or whether the incidents involved any injuries or deaths

separately (Table 2, columns 4–5), although the effect sizes are of a similar magnitude relative to the mean, as in column 3.

The ‘any incident’ variable is measured with the least error. As discussed in Section 3.1, data on injuries and deaths can be unreported or reported poorly. Our IV-RDD setting also introduces noise into our estimation, since we are not able to match specific incidents to an individual legislator’s identity but only to an average identity variable over a fairly large area. We show results from a traditional RDD specification that eliminates this noise using a restricted sample (see Section 5.3). We investigate heterogeneity in the relationship of interest in Section 5.2.

We now consider robustness of the IV results to changes in sample and specification. The estimated coefficient is stable when including election months, including the state of Jammu and Kashmir in the sample, and excluding months during which the state legislative assembly is suspended and the state is governed by the federal government, known as ‘President’s Rule’ in India (Table 3, panels A and B, columns 1–3). We then restrict the sample to district-months that had at least one inter-religious election. This is the sample that has the variation that our IV strategy relies upon; district-months that have no inter-religious elections do not contribute to the identification of our main coefficient  $\beta$ . The estimates are not significantly different from the baseline estimates (see Table 3, column 4).

## 5.2 Where are Muslim legislators more effective?

In this section, we explore whether the impact of Muslim legislators varies by state context. We posit that one mechanism to prevent religious violence would be to mobilize the police to prevent the escalation of tensions or disputes into violent incidents. This mechanism is more likely to be active in places with more police officers that can be called upon. We therefore estimate separate regressions for states with below-median police forces per capita versus states with above-median police forces.<sup>10</sup> We find, as expected, that the impact of Muslim legislators on the incidence of violence is larger in states with above-median police strength compared to states with below-median police strength (Table 4, panel A, columns 2 and 3), though neither of the coefficients attains statistical significance. Similarly, we find larger effects of Muslim legislators on the occurrence of serious incidents in states with more police (Table 4, panel B, columns 2 and 3). Since violence is destructive of human, physical, and social capital, the losses from conflict are likely to be larger in richer states. This might motivate Muslim leaders to put in more effort at violence prevention. The empirical patterns are consistent with this, but we recognize that alternative explanations of this gradient are possible (Table 4, panels A and B, columns 4 and 5). In future work, we will investigate more local heterogeneity, using available information on city-level economic complementarities between the religions, proxied by their past history as medieval ports (Jha 2013) or by the extent of business associations between the religions (Varshney 2002), and the data on the growth of inequality between Hindu and Muslim households in local areas (Mitra and Ray 2014). The cited studies examine how economic isolation or local inequality between the groups exacerbate violence, whereas we will examine whether increasing minority political representation attenuates these relationships. There is scope for further work investigating the underlying mechanisms by analysing political dynamics, such as affiliation with the ruling party, or influence over the state apparatus including decisions on police hiring or police deployments.

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<sup>10</sup> Data on police strength at the state level is available from the *Crime in India* annual volumes published by the National Crime Records Bureau.

### 5.3 RDD analysis on a restricted sample

As a step towards a sharper RDD analysis, we restricted our sample to district-month observations that feature *exactly* one inter-religious election. When there is exactly one inter-religious election, we can use the RDD specification of equation (1) so that there is greater precision in our estimates. This is not our main specification because the sample is selected on the outcome, and the number of observations is smaller. Using the optimal bandwidth selection procedure of Calonico et al. (2014), we do not find a statistically significant effect of Muslim legislators on the incidence or the severity of religious violence (Table 5, panels A and B, column 1). Here, we proxy severity by the indicator for any deaths or injuries. However, when we conduct the estimation separately for states with greater or lower police presence, we find results consistent with the patterns in Table 4. The presence of a Muslim legislator significantly reduces both the incidence and the severity of religious violence in states with above-median police strength (panels A and B, column 2) and in states with above-median per capita income (panels A and B, columns 4 and 5).

## 6 Conclusions

We provide the first analysis of the potential for political representation of minorities to curb intergroup violence. Muslims are a minority group in India; Hindus are the vast majority. We find that the competitive election of a Muslim against a Hindu in a close race is associated with lower Hindu-Muslim violence in the electoral district. This is consistent with Muslim leaders acting to protect Muslim citizens who are thought to have higher victimization rates. It is also consistent with Muslims, by virtue of being a minority, acting to placate Hindus. A limitation of our study that merits further work is that we are unable to identify the motive or the mechanism. The result is nevertheless powerful in its prospects—in principle, it generalizes to the rampant ethnic conflict in Africa (and potentially the Middle East and Europe), suggesting that the political empowerment of minority groups can contribute to addressing a problem that has largely evaded resolution.

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## Tables

Table 1: Summary statistics

	#observations	Mean	Std. dev.	Minimum	Maximum
<i>Panel A: Ethnic violence indicators</i>					
Any religious violence incident	126,296	0.0060	0.078	0	1
Number of incidents	126,296	0.0078	0.125	0	14
Any religious violence incident with an injury or death	126,353	0.0048	0.069	0	1
Any religious violence incident with at least one injury	126,296	0.0037	0.061	0	1
Any religious violence incident with at least one death	126,296	0.0033	0.058	0	1
<i>Panel B: Ethnic representation variables</i>					
Fraction of Muslim legislators in the district	126,296	0.056	0.108	0	0.833
Fraction of close inter-religious elections in the district	126,296	0.017	0.047	0	0.5
Fraction of Muslim legislators who won a close election	126,296	0.008	0.032	0	0.5
Any Muslim legislator (dummy)	126,296	0.333	0.471	0	1
Any close inter-religious election (dummy)	126,296	0.144	0.351	0	1
Any Muslim legislator who won a close inter-religious election (dummy)	126,296	0.074	0.261	0	1

Note: data are at the district-month level. Summary statistics are for the main regression sample, which excludes the state of Jammu and Kashmir and excludes months when a state-level election took place. See Appendix Table A1 for summary statistics for alternative samples as well as for district-year data.

Source: authors' calculations based on their data set.

Table 2: Muslim politicians and religious violence: IV-RDD estimates

	(1)	(2)	(3)	(4)	(5)
Whole sample	Any incident	# incidents	Any injuries or deaths	Any injuries	Any deaths
Fraction of Muslim legislators (ML)	-0.0329* (0.0178)	-0.0359 (0.0227)	-0.0288* (0.0166)	-0.0217 (0.0148)	-0.0174 (0.0129)
Fraction of close inter-religious elections in the district (TC)	0.00732 (0.00782)	0.0113 (0.0101)	0.0121* (0.00721)	0.00768 (0.00621)	0.0115** (0.00557)
Mean of dependent variable	0.0060	0.0078	0.0048	0.0037	0.0033
District and month FE	yes	yes	yes	yes	yes
Observations	126,296	126,296	126,296	126,296	126,296
R-squared	0.049	0.052	0.043	0.039	0.036

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. Standard errors in parentheses, clustered at the district-election cycle level. Coefficients are from 2SLS regressions, as described in Section 4.3, controlling for district and month fixed effects and the party identity of politicians. Regressions exclude the state of Jammu and Kashmir and the months where state elections were held.

Source: authors' calculations based on their data set.

Table 3: Muslim politicians and religious violence: robustness checks

	(1)	(2)	(3)	(4)
	Include election months	Include Jammu and Kashmir	Exclude months of President's rule	District-months with at least one inter-religious election
<i>Panel A: Any religious violence incident</i>				
Fraction of Muslim legislators (ML)	-0.0339* (0.0174)	-0.0344* (0.0180)	-0.0355** (0.0179)	-0.0376** (0.0175)
Fraction of close inter-religious elections in the district (TC)	0.00691 (0.00772)	0.00912 (0.00756)	0.00499 (0.00810)	
Observations	128,763	131,036	120,363	59,976
R-squared	0.048	0.047	0.049	0.061
<i>Panel B: Any religious violence incident with injuries or deaths</i>				
Fraction of Muslim legislators (ML)	-0.0293* (0.0162)	-0.0302* (0.0168)	-0.0321* (0.0168)	-0.0218 (0.0161)
Fraction of close inter-religious elections in the district (TC)	0.0116 (0.00712)	0.0137** (0.00699)	0.0118 (0.00752)	
Observations	128,763	131,036	120,363	59,976
R-squared	0.043	0.041	0.044	0.054

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. Standard errors in parentheses, clustered at the district-election cycle level. Coefficients are from 2SLS regressions, as described in Section 4.3, controlling for district and month fixed effects and the party identity of politicians. Regressions exclude the state of Jammu and Kashmir and the months where state elections were held, except when otherwise stated.

Source: authors' calculations based on their data set.

Table 4: Muslim politicians and religious violence: heterogeneous effects with 2SLS

	(1)	(2)	(3)	(4)	(5)
	IV-RDD	More police	Less police	Higher per capita income	Lower per capita income
<i>Panel A: Any religious violence incident</i>					
Fraction of Muslim legislators (ML)	-0.0329* (0.0178)	-0.0894 (0.0571)	-0.0199 (0.0167)	-0.123* (0.0670)	-0.0167 (0.0161)
Fraction of close inter-religious elections in the district (TC)	0.00732 (0.00782)	0.0193 (0.0248)	0.00270 (0.00687)	0.0392 (0.0342)	3.47e-05 (0.00645)
Observations	126,296	53,618	72,678	40,105	86,191
R-squared	0.049	0.068	0.036	0.073	0.036
<i>Panel B: Any religious violence incident with injuries or deaths</i>					
Fraction of Muslim legislators (ML)	-0.0288* (0.0166)	-0.0846 (0.0522)	-0.0155 (0.0159)	-0.119** (0.0602)	-0.0127 (0.0154)
Fraction of close inter-religious elections in the district (TC)	0.0121* (0.00721)	0.0259 (0.0223)	0.00671 (0.00653)	0.0476 (0.0305)	0.00481 (0.00610)
Observations	126,296	53,618	72,678	40,105	86,191
R-squared	0.043	0.063	0.029	0.067	0.029

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. Standard errors in parentheses, clustered at the district-election cycle level. Coefficients are from 2SLS regressions, as described in Section 4.3, controlling for district and month fixed effects and the party identity of politicians. Regressions exclude the state of Jammu and Kashmir and the months where state elections were held. 'More police' indicates states with above-median police strength per capita, and 'less police' are states with below-median police strength per capita. Higher (lower) per capita income indicates states with above (below) median per capita income levels.

Source: authors' calculations based on their data set.

Table 5: RDD estimates of the impact of Muslim politicians on religious violence

	(1)	(2)	(3)	(4)	(5)
	RDD	More police	Less police	Higher per capita income	Lower per capita income
<i>Panel A: Any religious violence incident</i>					
Muslim legislator	-0.00270 (0.00312)	-0.0166*** (0.00559)	0.00381 (0.00392)	-0.0185*** (0.00625)	0.00455 (0.00395)
Observations	31,318	10,153	21,165	9,034	22,284
Optimal bandwidth	0.182	0.181	0.177	0.176	0.176
Effective number of obs (right)	10,823	3,476	7,118	3,284	7,228
Effective number of obs (left)	13,282	4,621	8,601	3,761	9,404
<i>Panel B: Any religious violence incident with injuries or deaths</i>					
Muslim legislator	-0.00168 (0.00294)	-0.0123** (0.00519)	0.00350 (0.00362)	-0.0142** (0.00567)	0.00410 (0.00362)
Observations	31,318	10,153	21,165	9,034	22,284
Optimal bandwidth	0.175	0.149	0.184	0.155	0.184
Effective number of obs (right)	10,455	3,124	7,407	3,077	7,517
Effective number of obs (left)	13,165	4,352	8,656	3,607	9,576

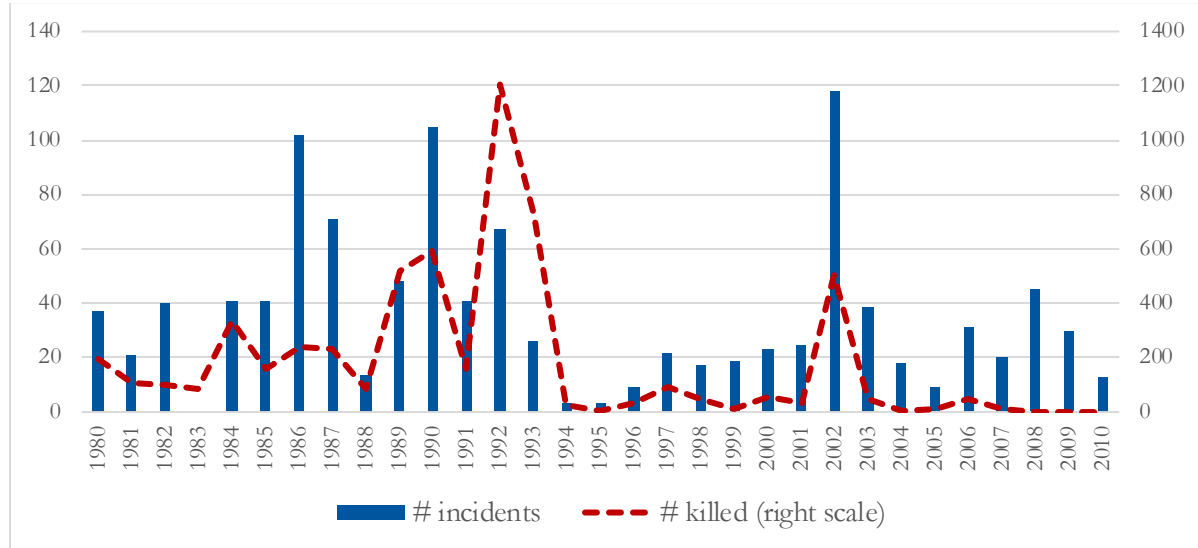
Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. Standard errors in parentheses. Coefficients are RDD estimates obtained using the Calonico et al. (2014) optimal bandwidth selection procedure. Coefficients reported are from the Stata 'rdrobust' package, which are both bias-corrected and have robust standard errors. Regressions exclude the state of Jammu and Kashmir and the months where state elections were held. Sample restricted to district-election cycles with exactly one close inter-religious election. 'More police' indicates states with above-median police strength per capita, and 'less police' are states with below-median police strength per capita. Higher (lower) per capita income indicates states with above (below) median per capita income levels.

Source: authors' calculations based on their data set.

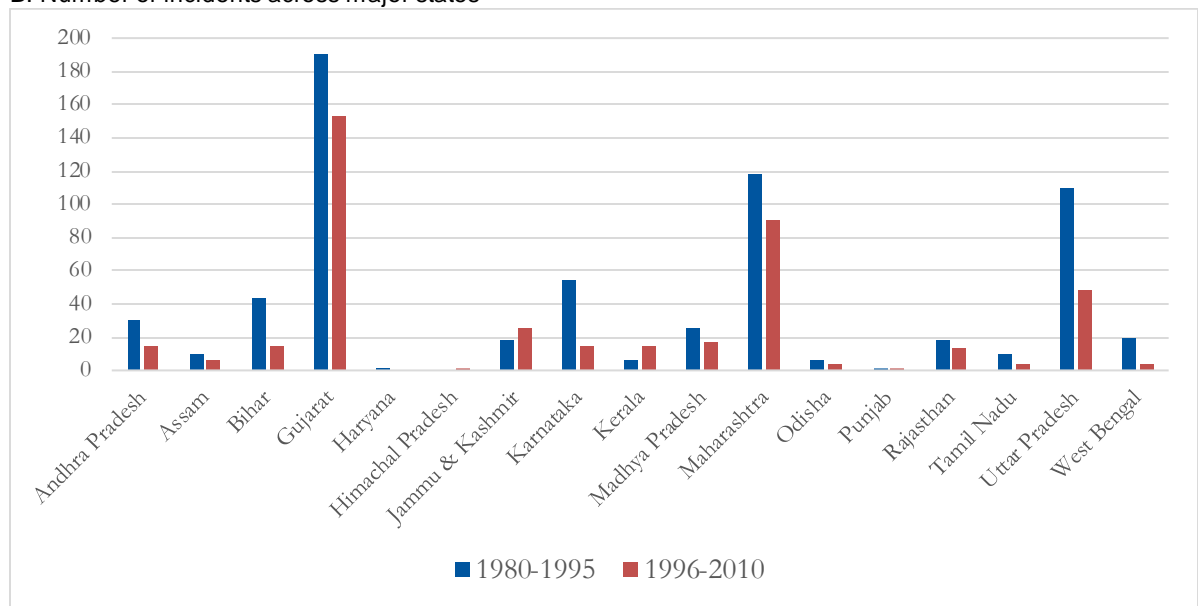
## Figures

Figure 1: Trends in Hindu-Muslim violence, 1980–2010

A: Number of incidents and deaths over time



B: Number of incidents across major states

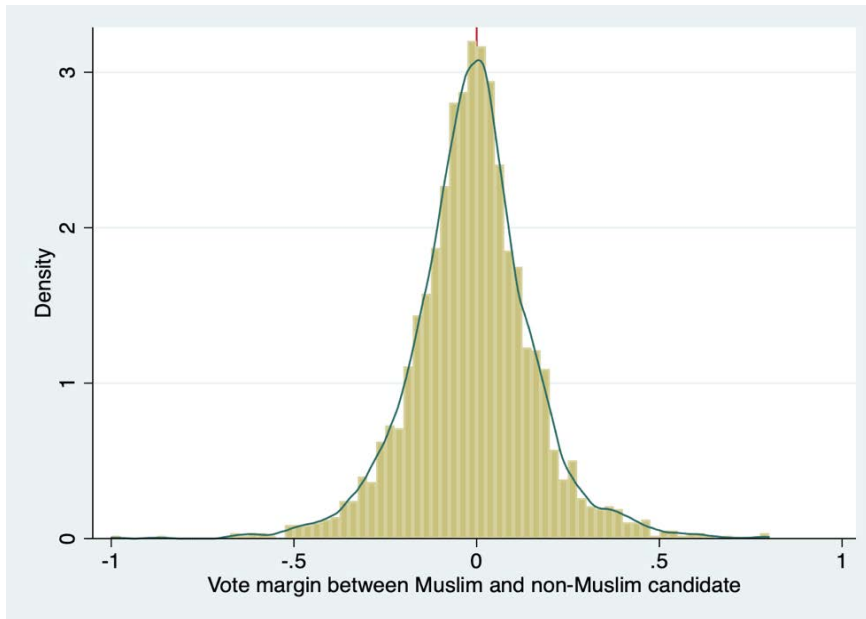


Note: figures at unified state level in Figure 1B to compare split states over time.

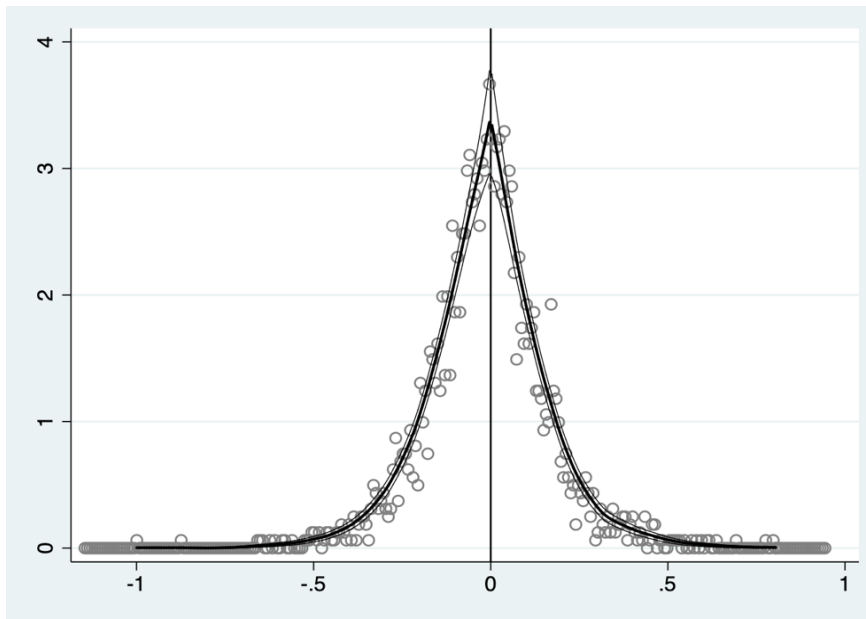
Source: authors' calculations based on their data set.

Figure 2: Continuity of the vote margin between Muslims and non-Muslims

A. Density of the victory margin



B. Testing for density discontinuities at zero (McCrary test)

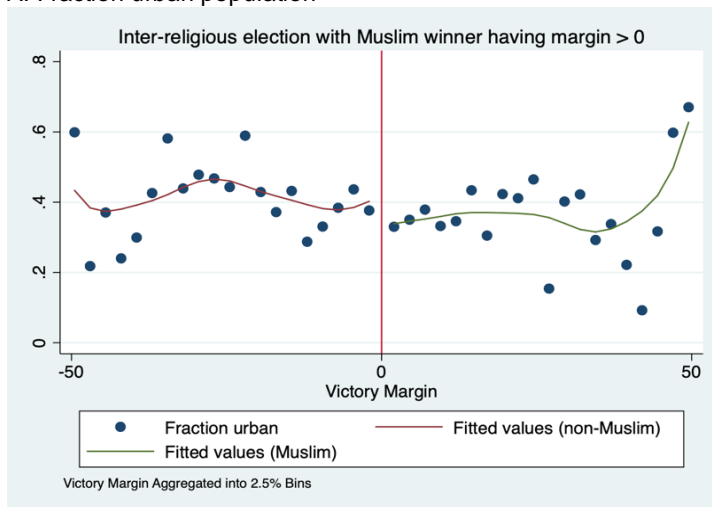


Note: sample restricted to elections where a Muslim and a non-Muslim were the top two vote-getters. Discontinuity estimate in Figure B (log difference in height): -0.0038 (standard error = 0.0919).

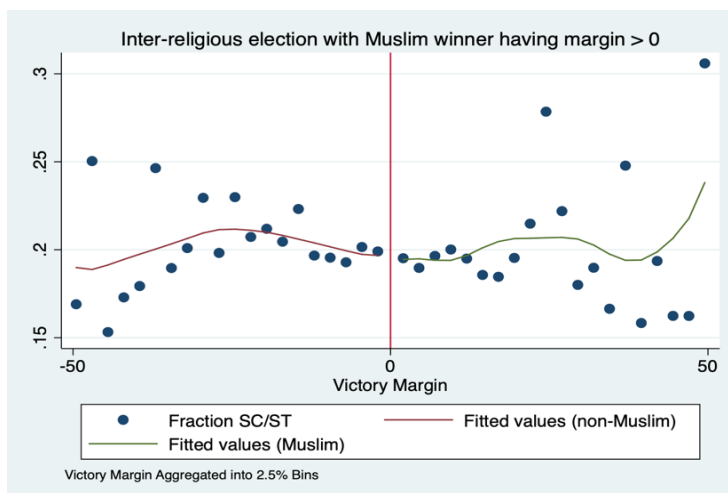
Source: authors' calculations based on their data set.

Figure 3: Continuity in demographic characteristics

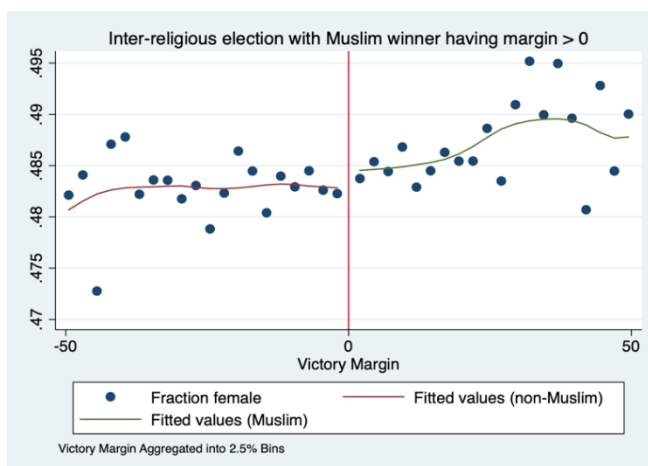
A. Fraction urban population



B. Fraction SC/ST population

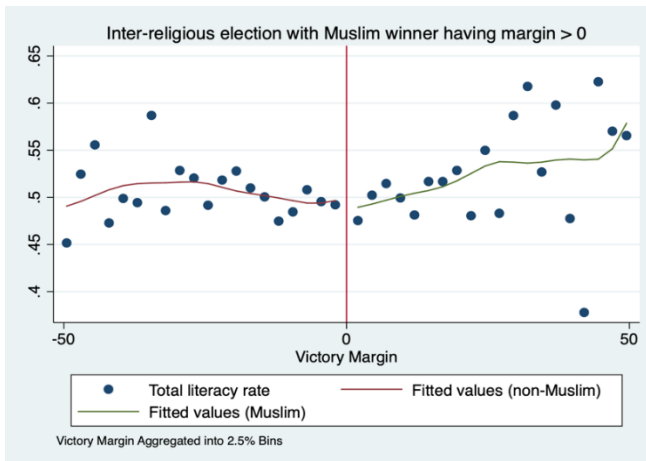


C. Fraction female

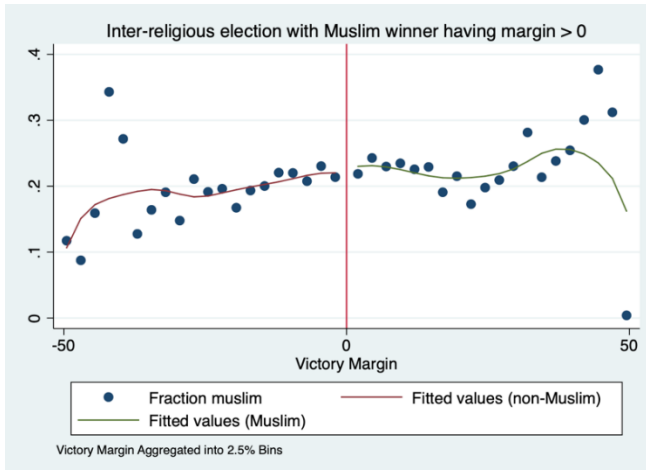




#### D. Fraction literate



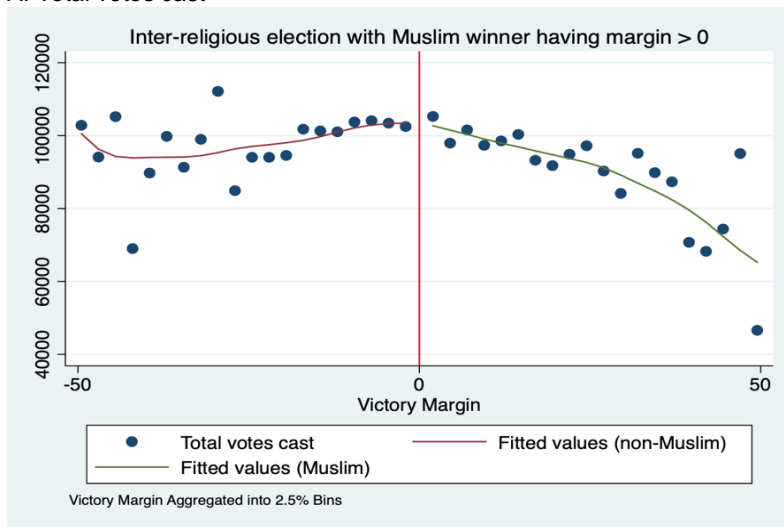
#### E. Fraction Muslims



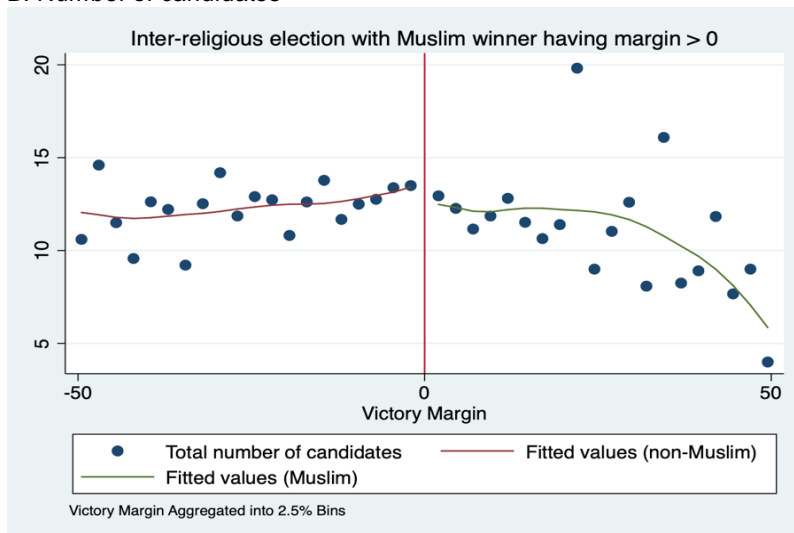
Source: authors' calculations based on their data set.

Figure 4: Continuity in political characteristics

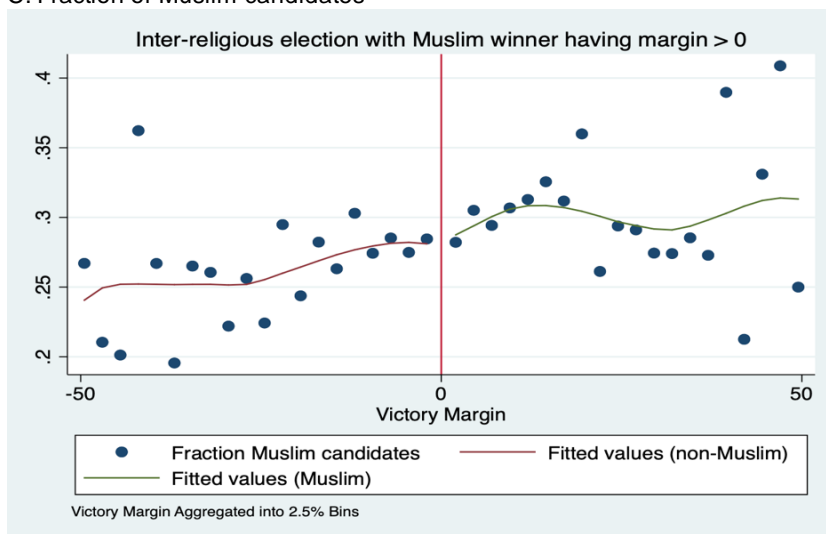
A. Total votes cast



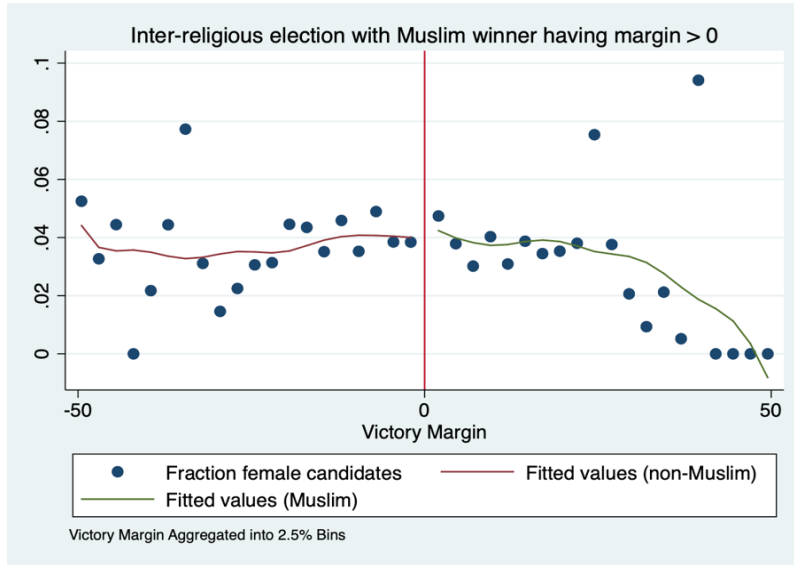
B. Number of candidates



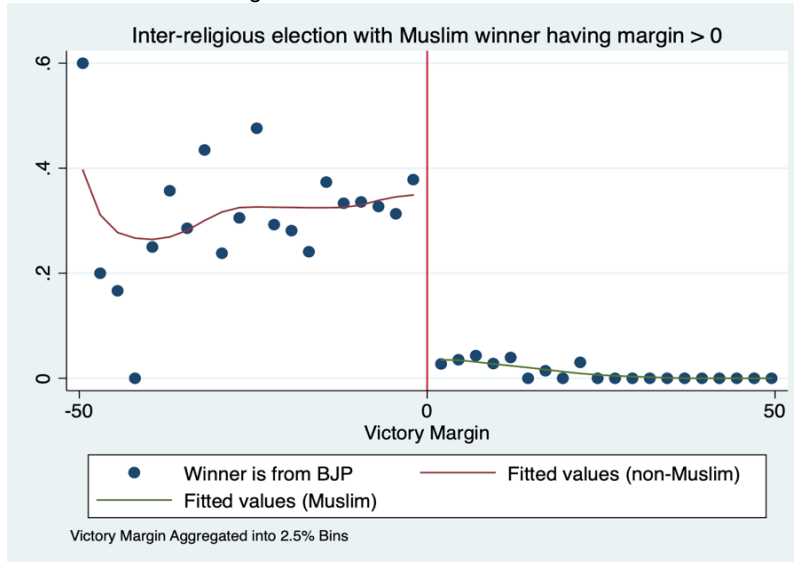
C. Fraction of Muslim candidates



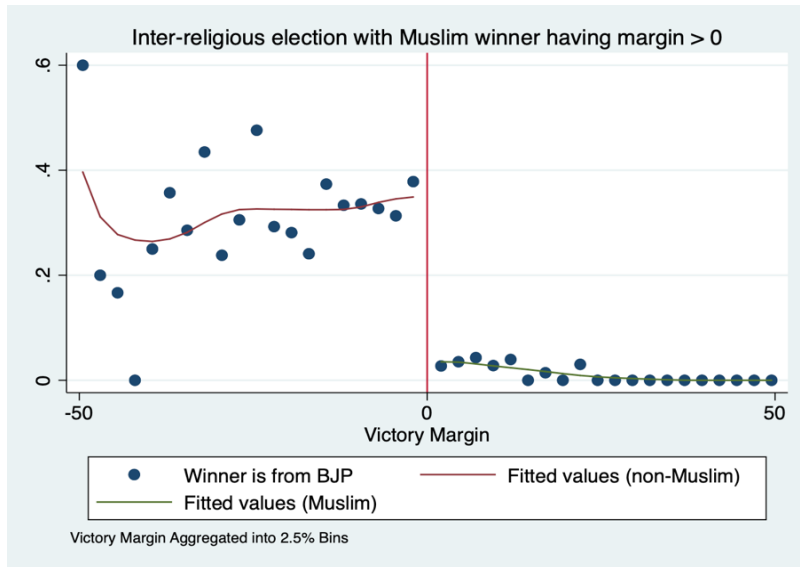
D. Fraction female candidates



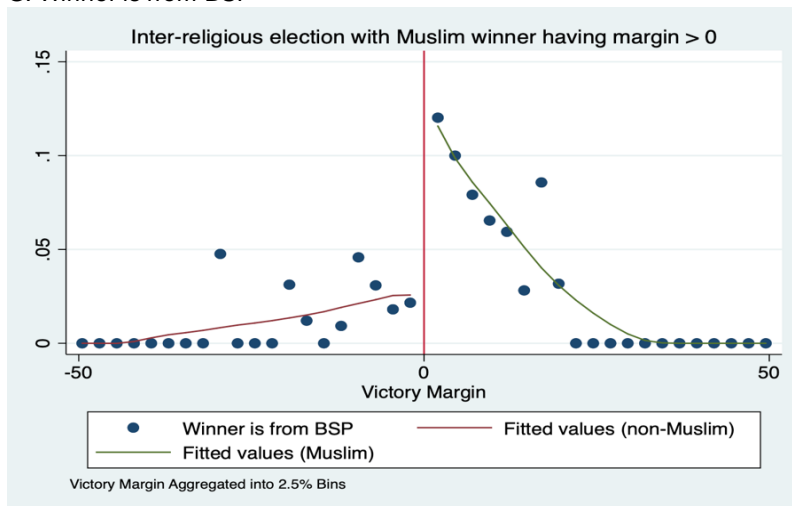
E. Winner is from Congress



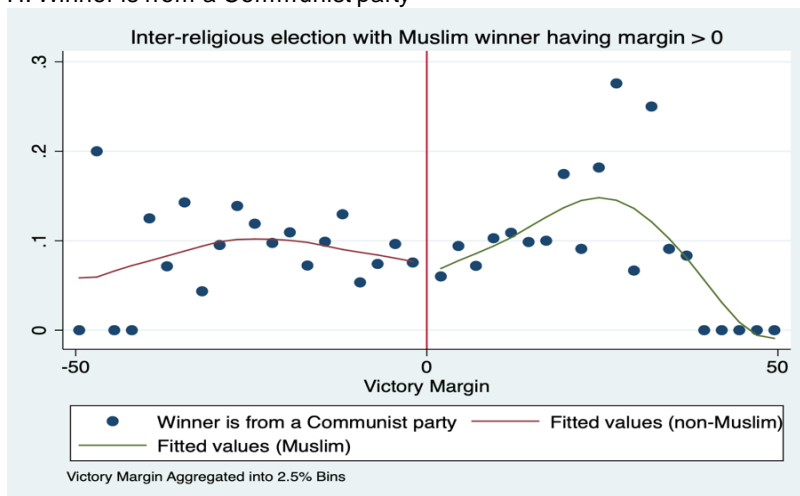
F. Winner is from BJP



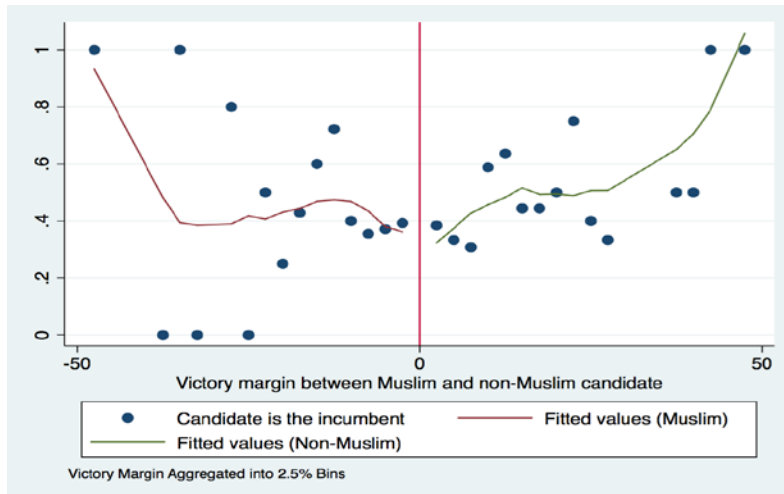
G. Winner is from BSP



H. Winner is from a Communist party



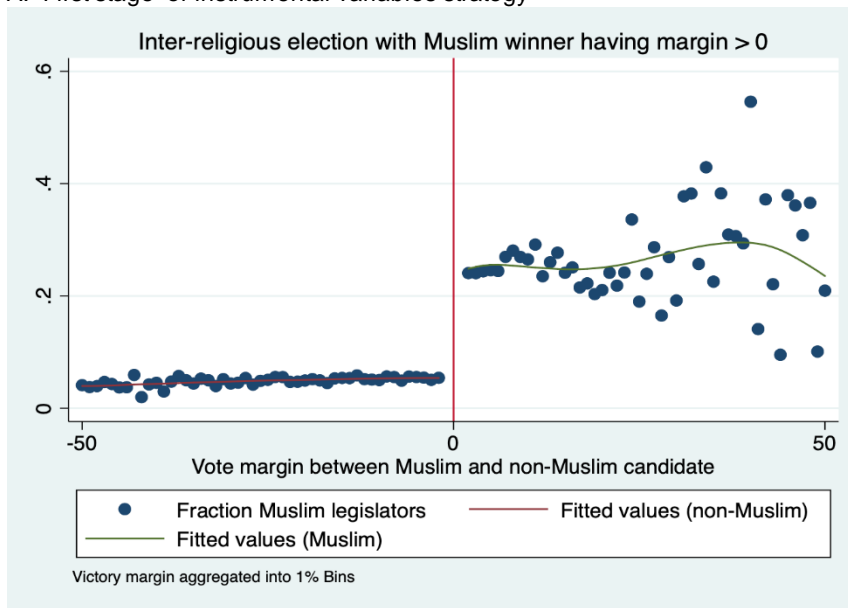
### I. Winner is an incumbent



Source: authors' calculations based on their data set.

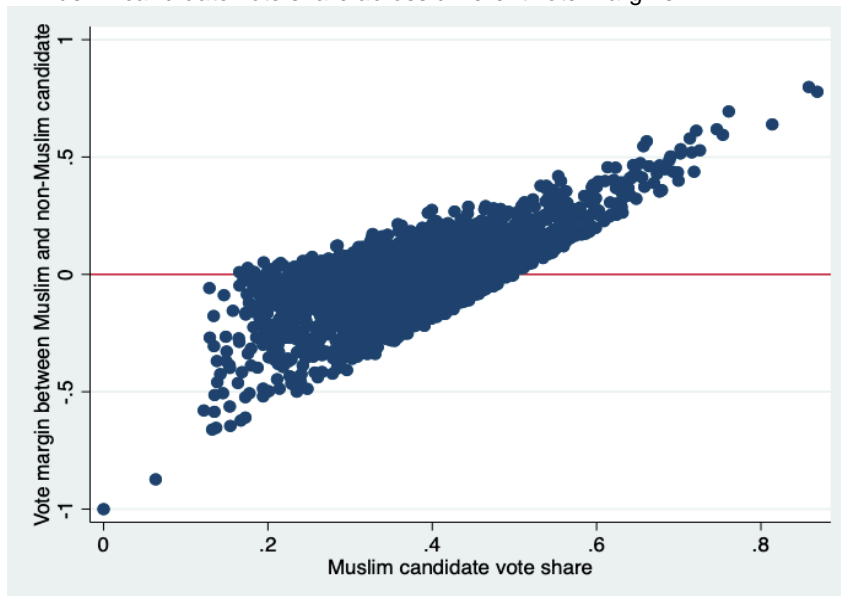
Figure 5: Instrumental variables strategy based on close elections

A. 'First stage' of instrumental variables strategy



Note: the x-axis shows the constituency-level victory margin between Muslims and non-Muslims, defined as the vote share of Muslim candidate(s) minus the vote share of non-Muslim candidate(s) so that a positive margin is associated with a Muslim winning a legislative assembly seat. The y-axis shows the district-level fraction of Muslim legislators.

B. Muslim candidate vote share across different vote margins



Note: figure uses constituency-level data on the overall vote share obtained by the Muslim candidate (x-axis) and the margin of victory between a Muslim and non-Muslim candidate (y-axis). Figure is for constituencies that had inter-religious elections, i.e. a Muslim and non-Muslim candidate as the top two vote-getters. The Muslim candidate wins when the vote margin is greater than zero and loses when the vote margin is less than zero.

Source: authors' calculations based on their data set.

## Appendix

Appendix Table A1: Additional summary statistics

*Panel A: Ethnic violence, alternative samples (means)*

	Regression sample	Drop years of President's Rule	Include election months	Include election months and Jammu and Kashmir
Number of incidents	0.0078	0.0079	0.0077	0.0077
Any religious violence incident	0.0060	0.0061	0.0060	0.0060
Any religious violence incident with at least one injury	0.0037	0.0038	0.0037	0.0037
Any religious violence incident with at least one death	0.0033	0.0033	0.0033	0.0033
Fraction of Muslim legislators in the district	0.0559	0.0560	0.0559	0.0772
#observations	126,296	120,363	128,763	133,569

*Panel B: Ethnic violence and ethnic representation, district-year data*

	#observations	Mean	Std. dev.	Minimum	Maximum
Number of incidents	10,735	0.100	0.698	0	43
Any religious violence incident	10,735	0.059	0.236	0	1
Any religious violence incident with at least one injury	10,735	0.038	0.190	0	1
Any religious violence incident with at least one death	10,735	0.031	0.174	0	1
Fraction of Muslim legislators in the district	10,735	0.056	0.108	0	0.833
Fraction of close inter-religious elections in the district	10,735	0.017	0.048	0	0.500
Fraction of Muslim legislators who win in close elections	10,735	0.008	0.033	0	0.500
Any Muslim legislator (dummy)	10,735	0.333	0.471	0	1
Any close inter-religious election (dummy)	10,735	0.145	0.352	0	1
Any Muslim legislator who won a close inter-religious election (dummy)	10,735	0.074	0.261	0	1

Source: authors' calculations based on their data set.

Appendix Table A2: Muslim politicians and religious violence, annual data

	(1)	(2)	(3)	(4)
	Annual data			
Whole sample	Any incident	# incidents	Any injuries	Any deaths
Fraction of Muslim legislators (ML)	0.0160 (0.150)	-0.534 (0.369)	0.0392 (0.116)	-0.0642 (0.107)
Fraction of close inter-religious elections in the district (TC)	-0.0193 (0.0696)	0.0130 (0.155)	0.0334 (0.0536)	0.0457 (0.0541)
Mean of dep var	0.100	0.059	0.038	0.031
District and year FE	yes	yes	yes	yes
Observations	10,735	10,735	10,735	10,735
R-squared	0.200	0.191	0.178	0.150

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.10. Standard errors in parentheses, clustered at the district-election cycle level. Regressions include district and year fixed effects and control for the party identity of politicians. Regressions exclude the state of Jammu and Kashmir.

Source: authors' calculations based on their data set.