Supplemental Appendix For

The Moderating Effect of Democracy on Climate-Induced Social Conflict: Evidence from Indian Districts

Contents

This appendix proceeds in four parts. In the first part, we provide a detailed discussion of the relevant literature, which we were unable to include in the main paper due to space constraints. The second part reports different summary statistics pertaining to our India district sample, including histograms of the main dependent variable. In the third part, we provide an additional discussion of the data and some of its relevant aspects. The fourth part then reports and discusses a large number of robustness analyses. Finally, we report the results from a mediation analysis.

Theoretical Motivation

Socio-political Conflicts in India

India, notwithstanding the partition of the subcontinent in 1947 along religious lines, remains one of the most ethno-linguistically-diverse nations in the world. The post-independence democratic polity is characterized by incessant ethnic and religious mobilizations across the country (see Harrison, 1960; Kothari, 1970; Brass, 1974; Varshney, 2003; Jaffrelot, 2003; Wilkinson, 2006; Chandra, 2007; Berenschot, 2011). These societal divisions have manifested in a high frequency of episodes of political violence. The country has experienced multiple, primarily ethno-nationalist, insurgencies and accounts for an exceptionally-high portion of the world's violent conflict events (Kauffmann and Kraay, 2016; Allansson, Melander and Themnér, 2017). The prevalence of political violence has spawned a sizable body of works on the subject. Religious or communal – Hindu-Muslim – riots have been the dominant theme in the literature (Brass, 1974; Varshney, 2003; Wilkinson, 2006; Berenschot, 2011). In the immediate aftermath of the independence, language-based divisions garnered sizable attention (Harrison, 1960; Brass, 1965). The focus shifted to India's numerous ethno-nationalist and Maoist insurgencies in recent years (Vadlamannati, 2011; Sarbahi, 2014; Gomes, 2015; Dasgupta, Gawande and Kapur, 2017; Sarbahi, 2017; Mukherjee, 2018; Nair and Sambanis, 2019; Sarbahi, 2021).

Largely missing in the political violence literature is an adequate representation of caste-based violence.[1] This omission is remarkable for a number of reasons. First, scholars have long argued that caste constitutes the most critical fault line in Indian politics and is "everywhere the unit of social action" (Srinivas, 1957, p.548). Caste-based political mobilization has been the subject of numerous studies (Rudolph and Rudolph, 1967; Kothari, 1970; Jaffrelot, 2003; Chandra, 2007; Dunning and Nilekani, 2013). There is a widespread acknowledgment that caste determines inequities and disparities in social justice, development outcomes and

[1] A few outstanding works that touch on the subject are qualitative and focus more broadly on *dalit* identity and marginalization. See, for instance, Gorringe (2005); Rao (2009); Viswanath (2014).

distribution of public goods (Anderson, 2011; Kumar, 2013; Sekhri, 2014; Bagde, Epple and Taylor, 2016; Mosse, 2018).

Second, caste-based violence remains a subject of public debate and policy focus. Despite under-reporting, such violence has consistently received significant coverage in media reports and has formed the basis for numerous central and state government investigation commissions (see Narula, 1999; Lakshmanan and Srinivasulu, 2017). There are statutory commissions for SCs and STs overseeing the implementation of the atrocities laws protecting these groups. Finally, caste and tribal divisions underlie many of the ongoing insurgencies and cases of large-scale political violence. For instance, the Maoist insurgency in central and eastern India derives its support from among the most marginalized groups castes and tribes (Singh, 1995; Chakrabarty and Kujur, 2009). Similarly, Shani (2007) argues that caste conflicts among the Hindus helped fostered Hindu-Muslims religious riots in Gujarat over the last quarter of the 20^{th} century. Even victimization during communal riots is associated with the caste composition of a locality (Gupte, Justino and Tranchant, 2014).

An important strand in the existing literature is the role of electoral dynamics. The resurgence of communal riots in the 1960s, which coincided with an increased contestation in Indian politics, led a number of scholars to emphasize the role of electoral politics and resulting polarization in accounting for the incidence of riots (see Kabir, 1968; Narain, 1970; Hasan, 1982). The best-known articulation of the competitive politics mechanism comes from Paul Brass (1996, 1997, 2003). Unlike previous works, Brass explicitly contends that riots are purposefully orchestrated by political actors. He writes, “large-scale communal riots are often staged events...to produce communal solidarity to gain electoral advantage in a political context in which no other stratagem would work so well” (Brass, 2003, 367). Wilkinson (2006), consistent with Brass’ argument, finds electoral dynamics – measured in terms of closeness of elections in an electoral district and temporal proximity to elections – as an important predictor of riots.

Scholars have sought to identify factors that help ensure communal harmony and moderate the effect of electoral politics. Wilkinson (2006), for instance, demonstrates that the state governments that are dependent on Muslim minority electoral support – states characterized by high party fractionalization, which implies a higher likelihood of dependence on minority support – have a stronger incentive to mobilize the government machinery to curb violence.[2] Berenschot (2011, 2020), while acknowledging the importance of electoral dynamics, identifies the availability of ethnically-homogeneous patronage networks in determining the success of political actors in fomenting political violence. His emphasis is on the facilitative role of ethnically-homogeneous patronage networks as opposed to constraining role of ethnically-diverse associational networks that Varshney (2003) emphasized in his seminal work. Like Varshney (2003), Jha (2013) places an emphasis of inter-ethnic relationships and highlights the long-lasting effects of the medieval overseas trade, which was closely tied to pilgrimage to the Islamic holy sites in the Middle East and monopolized by Muslims. In medieval ports, Muslim traders provided complementary, nonreplicable and nonexpropriable service whose benefits were widely disseminated across the population. We leverage insights provided by these works to develop an argument that incorporates the role of electoral competition to account for the variation in violence against marginalized castes and tribes in the context of environmental stress engendered by droughts.

Droughts, Water Security, and Conflict

Conflicts exacerbated by water scarcity have long been a concern for scholars and policymakers (Starr, 1991; Gleick, 1993; Postel and Wolf, 2001). Droughts feature prominently in recent research on the climate-conflict nexus (see Miguel, 2005; Maystadt and Ecker, 2014; Bagozzi, Koren and Mukherjee, 2017). The UN Convention to Combat Drought and Desertification (1994) defines a drought as "the naturally occurring phenomenon that exists when precipitation has been significantly below normal recorded levels, causing serious hydrological

[2] (Jha, 2013), using fixed effects for colonial provinces and native states, also finds this variable to be negatively associated with riots, but Bohlken and Sergenti (2010) report that the sign of the coefficient changes to positive after adding state fixed effects.

imbalances that adversely affect land resource production systems" (United Nations, 1996, ix). The effect of droughts is particularly pronounced in hydrologically marginal arid and semi-arid countries, especially where a large segment of the population depends on rain-fed agriculture (Falkenmark, 1986; Postel and Wolf, 2001).

For instance, India, with a sizable area under arid and semi-arid conditions, has experienced a drought at least once every three years over the last six decades (Mishra and Singh, 2010). Unlike floods, which are usually of shorter duration and restricted to flood plains, droughts are slow moving, significantly more complex, and are usually more disruptive, enduring, and expansive (Mishra and Singh, 2010; Dai, 2011). Some of the direct effects of droughts are straightforward: sustained depletion of water resources including groundwater, precipitous declines in land-factor production, increased indebtedness, migration, and loss of livestock. But many prominent effects of droughts are indirect and difficult to observe and quantify. These include poor nutrition due to the need to substitute some food types with inferior ones, inadequate supply of safe drinking water, and air-borne and vector-related diseases (see Stanke et al., 2013).

As a result of these linkages, many recent studies examine whether and under what conditions drought – and water insecurity broadly – leads to violence, highlighting several potential pathways. One such pathway is water insecurity's impact on food security, e.g., by reducing agricultural productivity (e.g., Miguel, Satyanath and Sergenti, 2004; Wischnath and Buhaug, 2014; Bellemare, 2015) or reinforcing food insecurity's effects (Koren, Bagozzi and Benson, 2021). Another pathway relates to competition over grazing land and water for consumption, especially in areas with low state presence (Döring, 2020; Detges, 2016, 2017). Droughts also tend to disproportionately affect marginalized sections of the population (Raleigh, 2010; Theisen, Holtermann and Buhaug, 2011), increasing the likelihood of sustained violence among agriculturally dependent and politically excluded groups (Von Uexkull et al., 2016; Ide, 2015). Finally, droughts could induce migration, increasing political pressures in host locations, thereby leading to more violence (Petrova, 2021; Koubi et al., 2021).

One factor that emerges as a key determinant of whether and how water insecurity – due to drought or otherwise – should affect social conflict relates to the socioeconomic factors in which it takes place. For instance, some studies find that any impacts of water insecurity on conflict are much stronger in areas where the state is weak and cannot moderate competition over exhaustive resources (Ide, 2015; Detges, 2016; Döring, 2020) although others find diverging evidence (Coleman and Mwangi, 2015). These findings are in line with recent work highlighting the pacifying role of formal political institutions compared with more traditional systems (e.g., Mustasilta, 2019, 2020; Wig and Tollefsen, 2016; Wig and Kromrey, 2018). It is important to emphasize, however, that almost all these studies are focused on (sub-Saharan) Africa and – sometimes – the Middle East, which could suggest inferential bias with respect to the broader relationship between water insecurity (due to drought or otherwise), socioeconomic development, and social conflict (Adams et al., 2018). Additionally, the focus on development, state presence, and traditional institutions as moderators, while insightful, still falls somewhat short of identifying the role of *formal electoral institutions at the local level*. Nevertheless, these strains of research are directly in line with our aims in this study, as explained in detail in the ensuing section, and as such, they provide a useful research foundation for further theoretical development.

This emphasis on the moderating role of electoral competition with respect to environmental conflict aligns with *country-level* studies that have highlighted their role in determining responses to climate change broadly (Lahsen, 2005; Bättig and Bernauer, 2009; Burnell, 2012). Indeed, Nobel laureate Amartya Sen (1999) has famously argued that democracies do not have famines. The presence of political competition in democratic countries creates a powerful incentive for a strong government response to address adverse effects of precipitation shocks, and avert famines and related catastrophes. A logical extension to the argument that democracies are better at dealing with environmental crises is that the effectiveness of the response will vary *within* countries based on the local capacity of its democratic institutions.

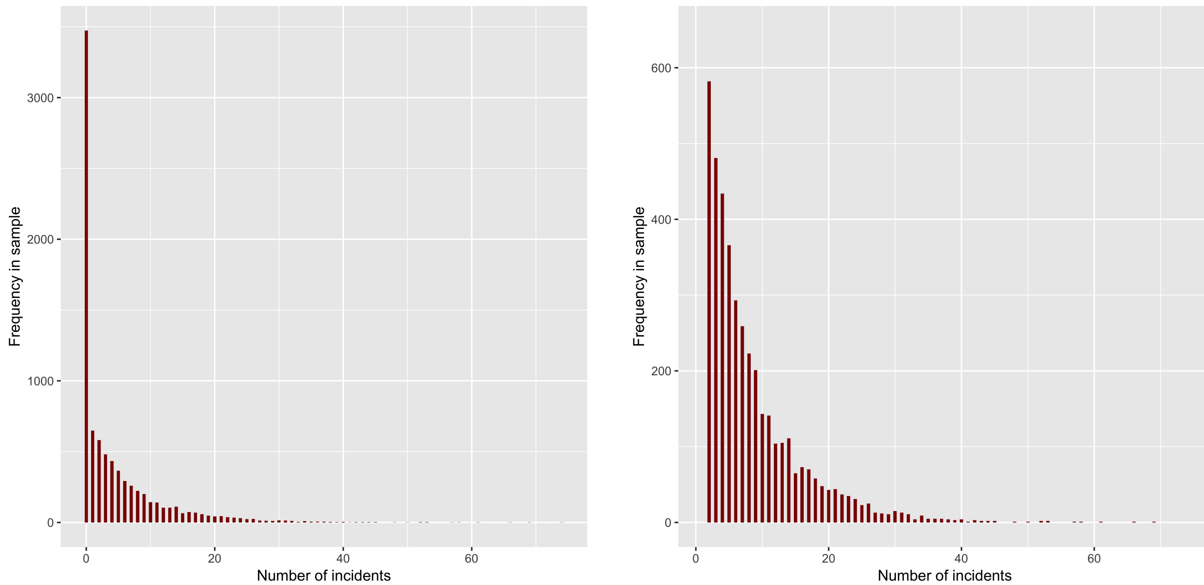
Summary Statistics

Table A1: Summary Statistics of all Independent Variables, 2001-2014

	Min	Median	Mean	Max	Std. Dev.
Social conflict$_{it}$[1]	0	1.098	1.072	4.318	1.087
Social conflict (SC and ST normalized)$_{it}$[1]	0	3.782e-06	1.117e-05	2.924e-04	1.697e-05
Social conflict (hate crimes)$_{it}$[1]	0	0.693	1.404	6.0615	1.603
Drought$_{it}$	0	0	0.040	1	0.196
Elec. compete$_{it}$	1.670	2.650	2.853	8.330	0.774
Nighttime light$_{it}$[1]	0	1.387	1.425	4.159	0.885
Temperature$_{it}$	-12.145	26.266	24.863	35.000	5.430
Reserved seat, SC$_{it}$	0	0	0.245	1	0.430
Reserved seat, ST$_{it}$	0	0	0.168	1	0.374
Population$_{it}$[1]	10.081	14.344	14.149	16.278	1.003
Average elevation[1]	0.693	5.480	5.446	8.530	1.211
Capital dist.[1]	0	13.692	13.365	14.806	1.215
Border dist.[1]	0	12.336	10.401	14.158	4.499
Scheduled caste (% population)	0	15.745	14.861	50.113	8.613
Scheduled tribes (% population)	0	3.382	16.028	98.086	25.906
Spatial lag (mean)$_{it}$	0	3	4.627	43.600	5.187
Spatial lag (max)$_{it}$	0	7	10.25	74	10.514
Spatial lag (min)$_{it}$	0	0	1.198	40	2.520
Elec. compete (hist.)	1.832	2.624	2.730	4.162	0.459
High compete$_{it}$	0	0	0.016	1	0.125
Drought (mild)$_{it}$	0	0	0.137	1	0.344
Drought$_{it-1}$	0	0	0.031	1	0.172
Drought$_{t-2}$	0	0	0.032	1	0.176

All time varying indicators are denoted t.
[1] Natural log.

Figure A1: Histograms of Social Conflict$_{it}$



All sample　　　Zero cases removed

Additional Discussion of the Data

The Dependent Variable

As a new and rarely used indicator, our *Social Conflict*$_{it}$ variable might exhibit some relevant biases, specially about the possibility that some crimes might not be reported, for instance, because the victims fear retribution (including by the police) or being socially stigmatized (e.g., in sexual violence cases). We recognize that it is a possibility, although it is mitigated by two related issues. First, any such reporting biases are likely to be consistent across all district-years in our sample. Moreover, any district and year specific biases are controlled for by our use of fixed effects by district and our inclusion of the time trend and its quadratic term in all our models, while any bias resulting from heterogeneities over time is accounted for by our reliance on district clustered standard errors.

Second, any such reporting bias is mitigated by our decision to (i) focus only on *violent* crimes, which are less likely to be underreported, considering their nature; and (ii) our reliance on an *aggregated* measure of all violent crimes, which helps to reduce the wait of underreported crimes as a share of total crimes included. As a result, we do not believe that these biases are driving the results, especially considering the variation in the impact of electoral competition in the models, which suggests reporting might not be higher where competition is more or less likely; and that drought's effects ar positive in areas with less competition, where we might expect *less*, not more reporting, to take place. Finally, in including controls for whether or not there were specific seats reserved for SC and ST members, we are able to account for some of the remaining variance that might be induced by potential bias. Importantly, any of these potential biases within our indicator are still likely to be low compared with more widely used datasets, such as the Armed Location and Event Dataset (ACLED) or the Georeferenced Event Dataset (GED). These datasets rely on media and human rights organizations reports, which are more likely to suffer missingness compared with police reports, making these datasets – the best in existence – still less useful for analyzing social conflict compared with our own measure.

The Unit of Analysis

As mentioned in the main text, a couple of challenges with respect to our electoral competition indicator and its relation to our unit-of-analysis are worth noting. First, electoral outcome data for the period analyzed are only available at the *electoral constituency* level, which – in India – does not necessarily align with those of administrative districts, our unit of analysis. Although autocorrelation within this independent variable is likely, if anything, to bias our findings toward zero, in the Supplemental Appendix we illustrate that these issues do not impact our results by estimating sets of models that omit all districts with electoral constituencies that straddle district boundaries and by removing different parts of the country that are political outliers (see Table A4 below). Second, the number of administrative districts in India have increased over time as new districts are carved out of existing districts. We address this concern by holding the number of districts (and their boundaries) constant at their 2001 level. The crime data from new districts created between 2001 and 2014 were added to the their original 2001 districts. In a few cases where a new district was carved out of more than one district, we assign crime values to the parent districts in proportion to their respective contribution to the total area of the new district. We also use this approach to determine electoral outcomes for these administrative districts. Thus, for administrative districts that cut across multiple electoral constituencies, we calculate district level measures of electoral outcomes using the weighted sum of their values for the electoral constituencies involved. The weight of an electoral constituency is measured by its share in the total area of the administrative district.

Robustness Models

To evaluate the sensitivity of our findings we estimate a large number of robustness models corresponding to model 4 from the main paper. Table A2 first reports a model that adds a control for population densities in a particular district-year (obtained from official censuses) to illustrate the decision to rely only on nighttime light emissions was sound. The next model then controls for average elevation of the district, distance to the capital (Delhi) and the nearest border, and the percent of the district's population that are SCs and STs. We then use historical values (going back to when records are available) to create an average value of the historical level of electoral competition in a given district, and use that in place of our standard (time varying) $Elec.\ compete_{it}$ variable. The fourth column then normalizes the dependent variable $Social\ conflict_{it}$ by the total number of registered SCs and STs residing in a given district.[3] We the use an alternative dependent variable (and its lag) which operationalizes social conflict at all crimes, violent and nonviolent, against SCs and STs defined specifically as hate crimes under the Protection of Civil Rights Act, 1958 (PCRA).

Turning to Table A3, the first three columns estimates our full specification from the main paper, with the addition of three different spatial lag operationalizations, corresponding to the (i) mean number of social conflict events in adjacent districts, in addition to the adjacent district with the (ii) maximum, and (iii) minimum number of social conflict events. The fourth column then employs a dichotomous variable denoting high electoral competitiveness ($Elec.\ compete_{it} >= 5$) or not. The fifth column then uses a lower (one standard deviation) threshold to operationalize drought. Finally, the sixth column then report model 4 with the addition of one- and two-year drought lags and their interaction with $Elec.\ compete_{it}$.

In Table A4 we address the possibility that our findings are driven by specific districts or sample characteristics. Accordingly, we start by removing all districts with electoral constituencies that cut across other districts. We then remove from our original sample all districts located in the ethnically homologous northeastern states. In the third column, we remove from our original sample all districts that are also 'union territories.' In the fourth column we then remove both union territories and northeastern state districts from our original sample.

In Table A5 we turn to ensure our results to endoegeneity – for instance, because crime

[3]Considering the resulting variable is a fracture, we do not log it.

affect electoral competition – and serial correlation, and to illustrate our theory provides a causal explanation. To this end, we begin by estimating a series of generalized method of moments (GMM) *dynamic* models below (Arellano and Bond, 1991; Blundell and Bond, 1998). A key assumption of these GMM models is that the necessary instruments are "internal" and rely on lagged values of the instrumented variable, *Social conflict*$_{it}$ in our case. The model is accordingly specified as a system of equations, one per time period, where the instruments applicable to each equation differ (in later time periods, additional lagged values of the instruments are available). Because these are panel models, unit fixed effects are canceled, providing a straightforward instrumental variable estimator. We accordingly estimate a set of first-differencing GMM models below, and use a two-step estimation approach, which provides a more robust version of these models and allows us to test whether over-identification is a problem.

Because research also warns us of the perils "instrument proliferation" in such models (Roodman, 2009, 136) and ensure our models can claim exogeneity and avoid over-fitting, we follow Roodman (2009, 148) and "use only certain lags instead of all available lags for instruments" by limiting the *Social conflict*$_{it}$ lags used for instrumentation to a two-year period ($t - 2$ to $t - 4$).[4] We then estimate a "deep lag" model by including all available dependent variable lags ($t - 2$ and beyond) as internal instruments in the next GMM model. The third column reports a model that includes only a linear time trend to illustrate that our findings are not driven by the reliance on a quadratic time trend (as higher r^2 value for the same number of observations illustrates, including the quadratic term improves overall model fit). Finally, we estimate a model that interacts district fixed effects with quadratic splines of time trend, which allows us to identify unit-specific time trends. This specification is empirically analogous to a synthetic control method (Abadie, Diamond and Hainmueller, 2010) and was used in other recent studies with a similar subnational focus (e.g., Carey and Horiuchi, 2017). Importantly, the sign and significance of our variables of interest hold

[4]We begin from $t - 2$ due to the inclusion of $t - 1$ in the right-hand side of the model.

in both GMM and in model that interacts district fixed effects and quadratic polynomials. This not only illustrates a very high standard of robustness for our theory, but also provides additional evidence to suggest our findings are *causal*, namely that our interaction provides a quasi-treatment with respect to social conflict. Finally, we report a Poisson count model to illustrate our results are not driven by our reliance on a log version of the dependent variable.[5] Indeed, our findings crucially hold across *every model and nearly every specification* in Tables A2–A5 (to at least the $p < 0.1$ levels), suggesting a robust – and causal – viability of our broad theoretical argument.

[5]We used a Poisson model due to our reliance on unit of analysis fixed effects, which induce bias and prevent converged in negative binomial models.

Table A2: Determinants of Social Conflict in Indian Districts, Robustness I

	Population	**No Dist. FEs**		**DV Robustness**	
		Controls	**Historical**	**Norm. DV**	**Hate crimes**
	(4)	**(5)**	**(6)**	**(7)**	**(8)**
$Drought_{it}$	0.365***	0.479***	0.538**	4.082e-06**	0.608***
	(0.116)	(0.142)	(0.238)	(1.596e-06)	(0.176)
$Elec.\ compete_{it}$	0.138***	0.051***	0.029*	1.690e-06***	0.028
	(0.020)	(0.013)	(0.017)	(3.060e-07)	(0.021)
$Drought_{it} \times Elec.\ compete_{it}$	−0.130***	−0.199***	−0.234***	−1.310e-06***	−0.169***
	(0.038)	(0.048)	(0.086)	(4.997e-07)	(0.059)
$Nighttime\ light_{it}$[1]	0.690***	−0.025*	0.026**	9.233e-06***	−0.043
	(0.046)	(0.014)	(0.012)	(9.682e-07)	(0.065)
$Temperature_{it}$	−0.122***	0.009***	0.010***	−1.856e-06***	0.150***
	(0.019)	(0.002)	(0.001)	(3.323e-07)	(0.026)
$Reserved\ seat,\ SC_{it}$	0.025	−0.0001	0.022	6.748e-07	0.067
	(0.036)	(0.022)	(0.020)	(8.720e-07)	(0.046)
$Reserved\ seat,\ ST_{it}$	0.033	−0.058***	−0.061***	1.066e-06*	0.128**
	(0.041)	(0.022)	(0.018)	(5.963e-07)	(0.056)
DV_{it-1}	0.108***	0.668***	0.724***	0.091***	0.433***
	(0.019)	(0.014)	(0.012)	(0.029)	(0.015)
$Population_{it}$[1]	−0.797***	0.095***			
	(0.297)	(0.013)			
Elevation[1]		0.042***			
		(0.010)			
Capital dist.[1]		−0.024**			
		(0.012)			
Border dist.[1]		0.012***			
		(0.002)			
% Pop. SCs		0.003*			
		(0.001)			
% Pop. STs		0.0002			
		(0.001)			
$Time\ trend_{it}$	0.137***	0.166***	0.171***	1.148e-06***	0.228***
	(0.013)	(0.010)	(0.010)	(1.703e-07)	(0.019)
$Time\ trend_t^2$	−0.011***	−0.012***	−0.012***	−1.053e-07***	−0.019***
	(0.001)	(0.001)	(0.001)	(1.080e-08)	(0.001)
Constant		−1.819***	−0.517***		
		(0.255)	(0.063)		
Observations	7,662	7,662	7,662	7,662	7,662
R^2	0.712	0.594	0.583	0.623	0.705
Adjusted R^2	0.688	0.593	0.583	0.591	0.680

Note: *p<0.1; **p<0.05; ***p<0.01. Values in parentheses are robust standard errors clustered by district. Fixed effects by district were included in each regression (excluding district FEs in models 6 and 7), although not reported.

[1] In natural log form.

Table A3: Determinants of Social Conflict in Indian Districts, Robustness II

	Spatial Lags			EV Robustness		
	Mean	Max	Min	High comp.	Mild drought	Lag. drought
	(9)	(10)	(11)	(12)	(13)	(14)
$Drought_{it}$	0.233**	0.321***	0.326***	0.016	0.270***	0.243
	(0.116)	(0.117)	(0.117)	(0.042)	(0.073)	(0.164)
$Drought_{it-1}$						0.337**
						(0.155)
$Drought_{t-2}$						0.486***
						(0.144)
$Elec.\ compete_{it}$	0.088***	0.113***	0.122***	0.213**	0.152***	0.167***
	(0.019)	(0.020)	(0.020)	(0.090)	(0.021)	(0.023)
$Drought_{it} \times Elec.\ compete_{it}$	−0.089**	−0.116***	−0.119***	−0.478***	−0.116***	−0.099**
	(0.038)	(0.038)	(0.038)	(0.124)	(0.025)	(0.049)
$Drought_{it-1} \times Elec.\ compete_{it}$						−0.094*
						(0.055)
$Drought_{t-2} \times Elec.\ compete_{it}$						−0.164***
						(0.050)
$Nighttime\ light_{it}$[1]	0.374***	0.548***	0.601***	0.706***	0.686***	0.604***
	(0.045)	(0.045)	(0.046)	(0.046)	(0.046)	(0.048)
$Temperature_{it}$	−0.077***	−0.108***	−0.108***	−0.107***	−0.100***	−0.183***
	(0.018)	(0.019)	(0.018)	(0.018)	(0.019)	(0.020)
$Reserved\ seat,\ SC_{it}$	0.033	0.030	0.029	0.028	0.032	0.006
	(0.036)	(0.037)	(0.037)	(0.038)	(0.037)	(0.036)
$Reserved\ seat,\ ST_{it}$	0.030	0.046	0.028	0.026	0.030	0.026
	(0.046)	(0.045)	(0.043)	(0.045)	(0.042)	(0.042)
DV_{it-1}	0.100***	0.105***	0.109***	0.109***	0.110***	0.086***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.020)
$Spatial\ lag\ (mean)_{it}$	0.091***					
	(0.006)					
$Spatial\ lag\ (max)_{it}$		0.023***				
		(0.002)				
$Spatial\ lag\ (min)_{it}$			0.092***			
			(0.013)			
$Time\ trend_{it}$	0.082***	0.104***	0.106***	0.129***	0.114***	0.190***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.015)
$Time\ trend_t^2$	−0.007***	−0.009***	−0.010***	−0.011***	−0.010***	−0.014***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Observations	7,623	7,623	7,623	7,662	7,662	7,073
R^2	0.749	0.727	0.725	0.709	0.713	0.712
Adjusted R^2	0.728	0.704	0.701	0.685	0.688	0.685

Note: *p<0.1; **p<0.05; ***p<0.01. Values in parentheses are robust standard errors clustered by district. Fixed effects by district were included in each regression, although not reported.

[1] In natural log form.

Table A4: Determinants of Social Conflict in Indian Districts, Robustness III

	One Elec. Dist. (15)	No NE (16)	No UT (17)	No NE and UT (18)
$Drought_{it}$	0.427***	0.338**	0.369***	0.322**
	(0.151)	(0.140)	(0.117)	(0.142)
$Elec.\ compete_{it}$	0.132***	0.159***	0.137***	0.159***
	(0.025)	(0.022)	(0.021)	(0.022)
$Drought_{it} \times Elec.\ compete_{it}$	−0.138***	−0.114**	−0.130***	−0.107**
	(0.049)	(0.048)	(0.038)	(0.049)
$Nighttime\ light_{it}$[1]	0.587***	0.772***	0.705***	0.794***
	(0.070)	(0.049)	(0.047)	(0.049)
$Temperature_{it}$	−0.088***	−0.138***	−0.125***	−0.144***
	(0.023)	(0.020)	(0.019)	(0.021)
$Reserved\ seat,\ SC_{it}$	−0.067	0.032	0.031	0.031
	(0.050)	(0.037)	(0.038)	(0.038)
$Reserved\ seat,\ ST_{it}$	0.079**	0.012	0.041	0.015
	(0.039)	(0.058)	(0.043)	(0.060)
DV_{it-1}	0.094***	0.115***	0.111***	0.118***
	(0.030)	(0.019)	(0.019)	(0.019)
$Time\ trend_{it}$	0.074***	0.126***	0.124***	0.130***
	(0.015)	(0.012)	(0.011)	(0.012)
$Time\ trend^2_t$	−0.007***	−0.012***	−0.011***	−0.012***
	(0.001)	(0.001)	(0.001)	(0.001)
Observations	3,508	6,973	7,441	6,752
R^2	0.719	0.692	0.705	0.683
Adjusted R^2	0.689	0.666	0.680	0.656

Note: *p<0.1; **p<0.05; ***p<0.01. Values in parentheses are robust standard errors clustered by district. Fixed effects by district were included in each regression, although not reported.

[1] In natural log form.

Table A5: Determinants of Social Conflict in Indian Districts, Robustness IV

	GMMs		Temporal		Count
	Shallow lags	**Deep lags**	**Linear time**	**Polynom. inter.**	
	(19)	**(20)**	**(21)**	**(22)**	**(23)**
$Drought_{it}$	0.219	0.174	0.126	0.283**	0.567***
	(0.235)	(0.222)	(0.114)	(0.130)	(0.140)
$Elec.\ compete_{it}$	0.018	0.018	0.162***	0.113***	0.163***
	(0.012)	(0.012)	(0.022)	(0.020)	(0.016)
$Drought_{it} \times Elec.\ compete_{it}$	−0.155*	−0.143*	−0.107***	-0.111***	-0.222***
	(0.082)	(0.077)	(0.038)	(0.043)	(0.053)
$Nighttime\ light_{it}$[1]	−0.010	−0.012	0.684***	0.831***	0.749***
	(0.018)	(0.016)	(0.046)	(0.043)	(0.030)
$Temperature_{it}$	0.006***	0.007***	−0.052***	-0.179***	-0.139***
	(0.002)	(0.002)	(0.019)	(0.021)	(0.016)
$Reserved\ seat,\ SC_{it}$	0.020	0.022	0.035	0.060	0.060***
	(0.038)	(0.038)	(0.037)	(0.060)	(0.022)
$Reserved\ seat,\ ST_{it}$	−0.085***	−0.096***	0.032	0.19**	0.065
	(0.033)	(0.031)	(0.042)	(0.085)	(0.042)
DV_{it-1}	0.757***	0.753***	0.091***	-0.005	0.010***
	(0.016)	(0.016)	(0.020)	(0.015)	(0.001)
$Time\ trend_{it}$			−0.052***	0.113***	0.117***
			(0.003)	(0.009)	(0.008)
$Time\ trend_t^2$				−0.008***	-0.010***
				(0.003)	(0.001)
Constant				0.968***	-5.429
				(0.335)	(3.330)
Observations	7,662	7,662	7,662	7,662	7,662
R^2	0.361	0.362	0.698	0.752	
Adjusted R^2			0.673	0.706	
Sargan	424.38***	442.76***			
AR(1)	-10.37***	-9.968***			
Akaike Inf. Crit.					33,007

Note: *p<0.1; **p<0.05; ***p<0.01. Values in parentheses are robust standard errors clustered by district. Fixed effects by district were included in the last two columns, although not reported.

[1] In natural log form.

Mediation Analysis

It is important to emphasize that our theory focuses on a *moderated* relationship, where drought and electoral competition moderate each other's effects at the local level, not a *mediated* one, where the effect of exogenous drought works only through electoral competition as the mediator. However, to explore if evidence for a mediated relationship exists, below we report a set of mediation analysis models corresponding to the full specification from the main paper (Model 3). Here, we use the econometric method proposed by Baron and Kenny (1986) to test whether electoral competitions *mediates* the effects of exogenous drought on social conflict. A support for the mediation hypothesis would mean that (i) our *exogenous* independent variable, $Drought_{it}$, has a *positive and statistically significant* effect on $Elec.\ compete_{it}$; (ii) $Elec.\ compete_{it}$ will have a *positive and statistically significant* relationship with $Social\ conflict_{it}$; and (iii) when included in the conflict model alongside $Elec.\ compete_{it}$, $Drought_{it}$ should have *no statistically significant and noticeable effect* on $Social\ conflict_{it}$.

The estimates of these mediation analysis are reported in Table A6. In line with the mediation hypothesis, the results suggest that drought indeed noticeably and significantly (to the $p < .05$ level) increases the level of electoral competitions in a given district during a given year. They also suggest that electoral competition, in turn, also noticeably and significantly (to the $p < .01$ level) increases the rate of social conflict. However, once we account for electoral competition, drought's effect become insignificant and even negative. In line with our *moderated* hypothesis, this suggests that the two components of our interaction ($Drought_{it}$ and $Elec.\ compete_{it}$) are not only individually – that is, absent of their interaction – are associated with higher conflict rates, but also that these effects maybe conditional: *drought's impacts are conditional on the degree electoral competition.* Again, while Table A6 is not sufficient for us to conclude that clearly a mediated relationship exists, the results do suggest it is a possibility. This outlines new directions for future research that seeks to better understand the relationship between climate, local political institutions, and social conflict.

Table A6: Determinants of Social Conflict in Indian Districts, 2001–2014

	Elec. compete$_{it}$	***Social conflict$_{it}$***
Drought$_{it}$	0.068**	−0.007
	(0.034)	(0.041)
Elec. compete$_{it}$	–	0.129***
		(0.020)
Nighttime light$_{it}$[1]	0.103**	0.696***
	(0.047)	(0.046)
Temperature$_{it}$	0.092***	−0.117***
	(0.018)	(0.019)
Reserved seat, SC$_{it}$	−0.036	0.031
	(0.069)	(0.037)
Reserved seat, ST$_{it}$	−0.124	0.037
	(0.082)	(0.042)
DV_{it-1}	0.001	0.109***
	(0.013)	(0.019)
Time trend$_{it}$	0.082***	0.118***
	(0.010)	(0.011)
Time trend$^2_{it}$	−0.003***	−0.011***
	(0.001)	(0.001)
Observations	7,662	
R^2	0.687	0.712
Adjusted R^2	0.660	0.687

Note: *p<0.1; **p<0.05; ***p<0.01. Values in parentheses are robust standard errors clustered by district. Fixed effects by district were included in each regression, although not reported.

[1] In natural log form.

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