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ABSTRACT

Within-Group Inequality and Caste-Based Crimes in India*

We examine how within-group inequality, by influencing the group bias of state institutions, affects the cost-benefit calculus of individuals engaging in identity-assertive behaviour, that results in police complaints regarding hate crimes. We develop a two-stage contest model of between-group conflict, where the relative influence of a group over institutions, determined by an initial contest, affects subsequent hierarchy-establishing interaction between individuals belonging to opposing groups. Applying this model to caste conflict in India, we find that greater inequality among non-Scheduled Caste (non-SC) Hindus reduces the registered rate of crimes against SCs by non-SC Hindus, as well as the conviction rate for these crimes. Greater inequality among SCs increases both rates. Using state-level annual crime and household consumption data over 2005-2021, we find empirical support for these hypotheses. Between-group inequality does not appear to matter for either the rate of crimes against SCs or the conviction rate. Our analysis suggests that greater inequality within marginalized groups might increase reporting and punishment of aggression against them, thereby serving a protective function.

JEL Classification: D72, D74, J71, J78, Z13

Keywords: caste conflict, social hierarchy, discrimination, hate crimes, India

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1. Introduction

A large literature, building on Becker (1957), addresses how individual cost-benefit calculus may sustain or undercut socio-economic discrimination. Attempts to discriminate, and counter-attempts to resist them, produce micro-level conflicts – decentralized 'identitarian violence' or 'hate crimes' – along racial, religious, linguistic, or caste-based fault-lines. However, the cost-benefit structure, within which individuals engage in such identity-based micro-conflicts, is itself often determined by a prior process of collective political action by antagonistic groups. For example, broader political contestations around the US Civil Rights movement, by impacting both the content and enforcement of anti-discrimination legislation, critically shaped incentives to commit or resist individual acts of racial discrimination, and thus racial conflict at the individual, micro level. Relative success in these contestations may be affected by the distribution of wealth/income within the contending blocs. Yet, economic analyses of identity-driven hate crimes and discrimination usually abstract from both within-group inequality and prior political processes of collective action and group conflict. We seek to address this lacuna in the literature, within the context of crimes against a traditionally marginalized group – 'scheduled castes' (SCs) – committed by members of other Hindu castes, in India. We develop a theoretical model, where greater inequality within the non-SC Hindu caste bloc reduces the registered rate of crimes against SCs and the conviction rate for such crimes. Greater within-SC inequality increases both. This happens because greater inequality with a group increases its influence over the police and judiciary, affecting the reporting and registration of such crimes, as well as conviction. We offer evidence consistent with these predictions. Thus, our analysis suggests that greater inequality within marginalized groups might increase reporting and punishment of aggression against them, thereby serving a protective function; greater inequality within dominant groups might have the opposite effect.

India's caste system, a defining feature of Hinduism, is perhaps the world's longest surviving social hierarchy. Traditionally, Hindu society has been segmented into a complex ranking of various castes, based on notions of ritual purity. Brahmins were at the apex, followed by other 'upper' castes and the intermediate castes ('other backward classes' or OBCs), while the so-called 'scheduled' castes (SCs) constituted the bottom of the hierarchy. Norms of ritual purity and pollution, which underlie the system, include the idea that individuals belonging to other castes would be 'polluted' by coming into physical contact with those born into the SC category.[1] Affirmative action measures and protective legislation to benefit SCs were introduced soon after Independence. However, discrimination and marginalization of these communities remain pervasive.[2]

[1] For overviews, see Ambedkar (1946), Béteille (1971), Dumont (1970), Gandhi (1982) and Sharma (1990). Economic models of the system have been developed by Akerlof (1970), Scoville (1996) and Bidner and Eswaran (2015).

[2] See Shah *et al.* (2006), Deshpande (2011), Mosse (2018), Munshi (2019) and Dasgupta and Pal (2021) for discussions. Scheduled Tribes (STs) often face disadvantages similar to those faced by SCs, and are covered by

Extensive, and often violent, conflicts between SCs and upper castes or OBCs constitute one of the most salient features of Indian politics. These conflicts have both macro and micro dimensions. At the macro-level, state-wide, or even country-wide, agitations are undertaken by contending caste organizations to influence public policy. Such agitations, organizations and mobilizations influence the extent to which governance institutions - the legislature, bureaucracy, police and the judiciary - reflect broad caste-bloc interests.[3] These macro-level conflicts can be seen as determining the institutional balance of caste power, within whose framework micro-level, i.e., localized caste conflicts occur between individuals or small groups belonging to SC and upper/OBC caste blocs. Such conflicts typically occur due to the efforts of upper caste or OBC individuals to enforce traditional behavioural norms of hierarchy, deference and exclusion in daily interaction, including exclusive use of public resources and facilities, and efforts by SCs to resist, amend or invert those norms.[4] The macro-level conflicts condition the cost-benefit structure within which caste-embedded individuals decide whether

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the same affirmative action measures and protective legislation as SCs. The social location of STs in relation to the traditional Hindu caste hierarchy is however different from that of SCs – STs are located largely outside that hierarchy, while SCs are located at its bottom. We leave STs out of the analysis in this paper partly for simplicity, partly due to their small numbers, and partly to highlight the difference in their social location vis-`a-vis SCs.

3 Examples include the following. At least fourteen people were killed on April 2 2018, hundreds injured and thousands arrested, in violent nation-wide protests organized by SC organizations against a Supreme Court order on the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act. The protestors perceived the judicial order, which imposed certain safeguards against arrest under the Act, as diluting its provisions. This mobilization led to India's Parliament passing a bill which overturned the Supreme Court order. This led to a fresh round of counter protests, this time by upper caste groups. These groups charged the government with ignoring the concerns of upper-caste people, who they claimed lived in fear of being harassed using the provisions of the Act. Multiple upper caste groups called for a country-wide general strike on September 6, 2018, which again saw significant participation and violence in many states. Earlier, in 2016, thousands of members of the dominant Maratha community had undertaken protest marches across the state of Maharashtra, demanding, among other things, a review and amendment of the SC/ST Act. See also Teltumbde (2018).

4 To illustrate, actions by SCs considered assertive by other castes at the micro, i.e., individual, neighborhood or village level typically include using common facilities such as village well, temples or roads, refusing to carry out traditional caste duties such as disposing of sewage and carcasses, not being available on call for domestic or field labor, not being sufficiently deferential in social interactions, and adopting traditional identity markers of upper castes. Such actions by SCs are perceived as challenging their traditional subordination, and are often met with assertive counter-actions by other castes, typically involving symbolic humiliation and violence. Such counter-assertive acts of humiliation and violence are perceived as restoring the traditional normative caste hierarchy – the rules of its moral universe. Actions deemed assertive or provocative enough when carried out by SCs to merit a violent response by other castes can include such seemingly trivial acts as riding horses at weddings (e.g., https://www.deccanherald.com/india/scs-have-right-to-ride-horses-734098.html), sporting a mustache (https://article-14.com/post/killed-for-sporting-a-moustache-dalits-in-rajasthan-s-feudal-villages-face-rising-tide-of-caste-violence-624cf9afb65f5), sitting cross-legged, wearing 'royal' shoes (https://www.bbc.com/news/world-asia-india-44517922) etc. See also Gettleman and Raj (2018) and Teltumbde (2018). Pai (2013) studies resistance by SCs to traditional norms of deference and subordination, and the renegotiation or inversion of such norms.

and how much to engage in micro-level caste conflict. Our broad objective is to explicate this interaction, both theoretically and empirically.

We build a two-period contest model of caste interaction. There are two groups in our model – SCs and others (upper castes and OBCs). Each group is cleaved into rich and poor segments according to wealth endowments. In the first period, all individuals can potentially participate in a contest between the two caste blocs. This contest determines the extent to which state institutions (such as the police and the judiciary) reflect the interests of each caste bloc – or the caste shares.[5] In the second period, each individual is randomly matched with another from the population. If two individuals from different caste blocs are matched, then they engage in a contest to determine the extent to which their interaction will reflect traditional norms of deference and subordination on part of SCs, when facing upper castes or OBCs. Each person engages in caste-assertive actions, with the outcome determined by the relative magnitude of such actions, according to a standard, ratio-form, contest success function. The expected marginal cost to such action for non-SC individuals is lower, the greater the control of that caste bloc over state institutions. We find that greater inequality within either community, in the sense of a mean-preserving rise in the spread of wealth endowments, increases its equilibrium share of institutions, thereby increasing the aggregate caste-assertive action committed by its members, and reducing that committed by its antagonist. The proportion of complaints by SCs that are registered by the police is an increasing function of the institutional share of SCs, as is the conviction rate. We interpret the product of the registration rate and the per capita assertive action suffered by SC individuals as reflecting the rate of crimes against SCs registered by the police. Our model implies that a rise in internal inequality among non-SCs will reduce the registered rate of crimes against SCs and the conviction rate for such crimes, while a rise in internal inequality among SCs will increase both. However, our model offers no strong theoretical reasons to expect any robust relationship between the crime rate and between-group inequality. We test these predictions with state-level annual data from India.

In 1989, India's Parliament passed legislation to prevent offences against SCs and STs by members of other communities. The Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act (SCST Act), 1989 was passed on 11 September 1989 and came into force on 30 January 1990. The rules were notified on 31 March 1995. The 1989 Act and 1995 rules underwent substantial amendments in 2013, 2014, 2015, 2018, and 2019 – primarily, existing offences were rephrased and new ones added. Crimes against SCs/STs by individuals from other communities are registered under the SCST Act, alongside relevant sections of the Indian Penal Code (IPC) and Special and Local Laws

[5] Recent contest-theoretic models of between-group conflict for influence over state institutions or public policy include Dasgupta (2017), Dasgupta and Guha Neogi (2018), and Bakshi and Dasgupta (2018, 2020, 2022). Of these, only the model in Bakshi and Dasgupta (2022) has a two-stage structure. Theirs is however a model of between and within-group contests – there is no within-group contest in the model developed here.

(SLL).[6] Annual state-level data regarding the rate of crimes registered under the SCST Act is available from the National Crime Record Bureau, and provides the primary measure of hate crimes committed against SCs and STs by members of other communities. We utilize this data-set, along with household-level consumption expenditure data from country-wide sample surveys for the years 2005, 2007, 2009, 2011 and 2017-2021,[7] to examine whether the registered rate of crimes against SCs, and the conviction rate for such crimes, are systematically associated with consumption inequality among SCs, among non-SC/ST Hindus, and between these two caste blocs.

We consider three inequality measures within each caste bloc, i.e. SCs and non-SC/ST Hindus: the average consumption of the top 25% as a proportion of the average consumption of the group, the within-group Gini measure, and the within-group Theil measure. As a measure of between group inequality, we consider the ratio of the average consumption of SCs and that of non-SC/ST Hindus. We find empirical support for the hypotheses generated by our model. Inequality within the non-SC/ST Hindu bloc is negatively and significantly associated with the registered rate of crimes against SCs and the judicial conviction rate, while inequality among SCs is positively and significantly associated with both rates, according to almost all of the many alternative empirical specifications we examine. Thus, upper caste or OBC individuals tried for crimes against SCs are more likely to be acquitted when their caste bloc is more unequal, but less likely when the SC bloc is internally more unequal. These results are consistent with our theoretical finding that greater inequality within a group generates greater influence of that group within state institutions, thereby affecting individual cost-benefit calculations, and thus decentralized caste crimes. They suggest that greater inequality within marginalized groups might increase reporting and punishment of aggression against them, while greater inequality within dominant groups might have the opposite effect. We find no significant relationship between between-group inequality and the registered crime rate, or the conviction rate. We also find evidence that lower inequality among non-SC/ST Hindus leads to greater supply of police personnel, which appears consistent with greater reporting of anti-SC crimes.

Our analysis contributes to at least three different strands of the literature on issues surrounding wealth inequality, group power and inter-group conflict.

First, a growing literature seeks to identify how collective caste power affects individual behaviour and economic outcomes. Anderson (2011) and Iverson *et al.* (2014) consider the effect of caste divisions and caste power on household income of lower castes in villages dominated by upper castes. Dasgupta and Pal (2021) examine how village-level caste power affects individual decisions to practise untouchability. Bailwal and Paul (2024) investigate how the identity of the dominant caste

[6] IPC crimes include violent crimes, or crimes against the body. SLL crimes with regard to SCs include insult or humiliation, land occupation, restricting SCs from the use of public space or passages, social boycott, etc.

[7] Choice of these years has been dictated by the availability of consumption inequality data.

group within a village affects learning outcomes of SC children. We extend this line of enquiry by highlighting how the relative influence of contending caste-blocs over state institutions, such as the police and the judiciary, might constitute a key determinant of both individual incentives to commit hate crimes against SCs, and the institutional response to such crimes.

Second, we contribute to the literature on the drivers of discrimination against SCs. Chauchard (2014) examines whether political quotas for SCs reduce discriminatory intentions against them, while Girard (2018) studies how the exclusion of SCs from the use of public roads is affected by such quotas. Aneja and Ritadhi (2022) examine whether the representation of SCs in government can reduce the SC murder rate. Mukherjee *et al.* (2020) examine how political quotas for SCs affect the allocation of village-level public goods. Our analysis shares the same broad objective – to identify factors that might reduce discrimination against SCs – but differs in its focus on how caste power is refracted through institutional bias, instead of affirmative action or governmental representation, in the context of hate crimes against SCs. Bros and Couttenier (2015) draw attention to the role of violence in the enforcement of norms of untouchability, but do not investigate how caste power might influence the extent and consequences of such violence. Sharma (2015) and Kabiraj (2023) examine hate crimes against SCs as well, and identify wealth inequality between SCs and other castes as a key determinant of such crimes. We extend this line of research by highlighting wealth inequality *within* caste-blocs as a key determinant of both the prevalence of hate crimes against SCs and the judicial response to such crimes. While Sharma (2015) is the contribution most closely related to ours, our identification of within-group, rather than between-group, wealth inequality as the key driver of hate crimes against SCs demarcates our contribution. Indeed, as already mentioned, we find that, once within-group inequality is taken into account, between-group inequality ceases to be significantly associated with anti-SC hate crimes.

Empirical research often fails to find any robust relationship between overall (i.e., country-wide) inequality and conflict (e.g., Lichbach 1989, Fearon and Laitin 2003 and Collier and Hoeffler 2004; see Østby 2013 for a survey). More disaggregated investigations, focusing on inter-personal inequality *within* groups fare better. Østby *et al.* (2009) find a positive and significant relation between within-region inequalities and conflict onset using data from a sample of 22 Sub-Saharan African countries. Kuhn and Weidmann (2015) introduce a global data set on within-group inequality using nightlight emissions and find that greater economic inequality within an ethnic group significantly increases the risk of conflict. Huber and Mayoral (2019), analyzing cross-country data, find a robust positive association between the level of inequality within a group and the severity of civil war, measured using battle deaths. Bulutgil and Prasad (2023) offer evidence from India that low within-group inequality dampens the likelihood and frequency of Hindu-Muslim communal riots. These empirical findings highlight the possibility of a causal relationship between inequalities within well-defined social groups, cleaved along 'ethnic' (i.e., non-class identity) divides such as race, language, religion or caste, and conflicts among such communities. Theoretical support for this view is provided

by Esteban and Ray (2011), who show that greater internal inequality might make a group more aggressive against another group, and Cubel and Sánchez-Pagés (2020), who develop a model of between-group conflict where equilibrium winning probabilities are a function of the groups' Atkinson indices of inequality. In identifying wealth inequality within caste-blocs as a key determinant of the intensity of caste conflict, as measured by the rate of hate crimes against SCs, we add to this literature.

Section 2 sets up our theoretical model of caste conflict and identifies the empirically testable hypotheses generated by it. Our data-sets and empirical models are discussed in Section 3. In sections 4, 5 and 6, we report our regression results. Section 7 concludes. Detailed proofs of our main theoretical propositions are presented in an appendix.

2. Model

Consider a society of population size n; $n \in \{4,5,\dots\}$. Let $N = \{1,2,\dots,n\}$ represent the set of all individuals. N is partitioned into two groups – S ('scheduled' castes or SCs) and G (upper castes and OBCs) - with population shares r_S and r_G respectively; $r_S + r_G = 1$. A generic S individual is endowed with wealth W_S; W_G denotes the wealth of a generic G individual. G is equally divided between rich (R) and poor (P) members, with wealth endowments $\overline{W}_G$ and $\underline{W}_G$ respectively; $\overline{W}_G > \underline{W}_G > 0$. Thus, $W_G \in \{\overline{W}_G, \underline{W}_G\}$. Let G_R and G_P denote, respectively, the set of all rich and poor members of G. S too is equally divided between rich and poor individuals, with wealth endowments $\overline{W}_S$ and $\underline{W}_S$ respectively; $\overline{W}_S > \underline{W}_S > 0$, so that $W_S \in \{\overline{W}_S, \underline{W}_S\}$. Let S_R and S_P denote, respectively, the set of all rich and poor members of S. Every individual has 1 unit of leisure.

All individuals live for two periods and are expected utility maximizers. In period 1, the two groups engage, in decentralized fashion, in a political contest to determine the degree to which a group has influence over the state machinery. Group influence determines the extent to which the state machinery enforces laws to protect the group S in the second period. Let x_i denote the political effort, measured in efficiency units, provided by individual i. The degree to which group $g \in \{S, G\}$ influences the state machinery is given by the Tullock (1980), or ratio-form, contest success function:

$$p_g = \frac{X_g}{X} \text{ if } X > 0;$$

$$= \frac{1}{2} \text{ otherwise.} \qquad (1)$$

where $X_g = \sum_{i \in g} x_i$ is the total political effort, measured in efficiency units, exerted by the group, $X = X_S + X_G$. All individuals choose their political effort simultaneously in period 1. The marginal cost of political effort to any individual in group g ($g \in \{S, G\}$), measured by utility loss from forgone leisure, is ${r_g}^{\theta} T_g(W_g)$, where W_g is the individual's wealth and r_g is the population share of the individual's

group, $\theta \in \Re$. The functions T_S, T_G are both positive and finite: for all $W \in \Re_{++}$, $T_S(W), T_G(W) \in \Re_{++}$. They are also both differentiable and strictly monotone, i.e., for every $g \in \{S, G\}$: [either $T_g'(W) > 0$ throughout, or $T_g'(W) < 0$ throughout].

The marginal cost of political effort may be affected by group size. The effect of group size on political productivity is iso-elastic – this elasticity is captured by the parameter θ. Community-wide economies of scale, reflecting the size advantage conferred by the political process in an electoral democracy, is implied by $\theta < 0$. Alternatively, larger groups may face greater coordination costs (Olson 1965), reducing individual conflict productivity. This holds if $\theta > 0$. Efficiency in converting leisure to political action may even be independent of group size: then, $\theta = 0$. An individual's cost of political effort may also depend on her wealth. If greater wealth implies greater possession of social and human capital which increases political productivity of effort, so that a unit of political effort in efficiency units requires a lower sacrifice of leisure (or the marginal utility of leisure is lower due to greater possession of substitute goods), then $T_g'(W) < 0$. If greater wealth provides greater access to complementary goods which increase the marginal utility of leisure, then $T_g'(W) > 0$. We only rule out the possibility, through the assumption of strict monotonicity, that the marginal effect of wealth on the cost of political effort for either group reverses sign as wealth changes. Note that the sign of the marginal effect of wealth on the cost of political effect may however vary across groups: $T_S'(W)$ and $T_G'(W)$ need not have the same sign. This permits the possibility that different trajectories of historical evolution or group-specific social norms may lead to wealth accumulation affecting acquisition of social, human or cultural capital in different ways across different caste groups. In one caste bloc, this may be associated with greater acquisition of political productivity-augmenting social capital, whereas, in another, wealth accumulation may increase the marginal cost of political effort, due to greater acquisition of consumer goods which increase the marginal utility of leisure.

In period 2, each individual is randomly matched with a member of society (including himself). Thus, the number of *G* individuals who get matched with an *S* individual is $(1 - r_G)r_G n$, which is also the number of *S* individuals who achieve a *G* match. If an *S* individual is matched with a *G* individual, then both of them simultaneously engage in caste-assertive behavior, i.e., take actions which together establish a caste-based social and normative hierarchy of domination between them. The net benefit to an *S* individual, from engaging in caste-assertive behavior when matched with a G individual, is:

$$u_{SG} = DF(y_s, y_G) - y_s L_S; \tag{2}$$

where y_s is the magnitude of assertive actions undertaken by the S individual and y_G is that of assertive actions by the *G* individual matched with her. L_S is the marginal cost of assertive action by S, $L_S \in \Re_{++}$. L_S may be interpreted partly as a psychic cost, generated due to the internalization of traditional caste

norms of subordination and subservience by S individuals.[8] An additional, material source of costs suffered by SC individuals from engaging in assertive action in village contexts may be social ostracism, or economic boycott, by other castes.[9]

$$F(y_S, y_G) = \frac{y_S}{y_S + y_G} \text{ if } y_S + y_F > 0;$$

$$= \frac{1}{2} \text{ otherwise.} \quad (3)$$

F, lying between 0 and 1, measures the extent to which an S individual dominates behavioral interaction between her and a G individual. S can take assertive or symbolic actions to improve the extent of her dominance, or, equivalently, her location in the implicit normative caste hierarchy. Likewise, G individuals can take actions that improve their location vis-à-vis an S individual. Assertive actions combine to generate a caste hierarchy, in the manner given by (3). D captures the benefit from completely dominating that interaction, $D > 0$.

The expected net benefit of caste-assertive action, to a G individual when matched with an S individual is given by:

$$u_{GS} = D[1 - F(y_S, y_G)] - y_G p_S L_G; \quad (4)$$

where p_S is given by (1) and determined by inter-group contestation in period 1; $F(y_S, y_G)$ is given by (3) and $L_G \in \Re_{++}$.

Like S individuals, G individuals too internalize traditional caste-norms prescribing the superiority and domination of G over S. Consequently, they suffer no psychic cost from engaging in caste-assertive action. However, engaging in caste-assertive action lays them open to the possibility of being subjected to legal sanctions. The marginal cost entailed by such actions is L_G, which is determined by the legal code and therefore exogenous. Legal sanctions are however enforced by the police, courts and the administration only to the extent that the S group has influence over the state machinery in the society. Thus, the probability that caste-assertive actions by a G individual will be subjected to legal sanction is p_S, implying an effective, i.e., expected, marginal cost of $p_S L_G$.

[8] That the oppressed internalize the values of their oppressors, even when they challenge them, is a common theme in studies of economic or colonial-racial subjugation. See, for example, Freire (2005, chapter 1): "The oppressed … are at one and the same time themselves and the oppressor whose consciousness they have internalized" (p. 48). Fanon (1967) foregrounded an analogous psychological phenomenon in the context of race and colonial subjugation – in his diagnosis of the neurosis of wanting-to-be-white. He wrote: "If there is an inferiority complex, it is the outcome of a double process: primarily, economic; subsequently, the internalization—or, better, the epidermalization—of this inferiority" (Fanon 1967, p.11).

[9] We abstract from this explicitly modeling this because of tractability considerations.

Caste-assertive action cannot occur if an S individual is matched with another S individual, or if a G individual is matched with another G individual.

First consider period 2. Assuming a positive p_S, the first order conditions yield:

$$D\left(\frac{y_G}{(y_S+y_G)^2}\right) = L_S. \tag{5}$$

$$D\left(\frac{y_S}{(y_S+y_G)^2}\right) = p_S L_G. \tag{6}$$

Combining, and using the superscript E to denote equilibrium values, we get the equilibrium conditions:

$${y_S}^E = \frac{p_S L_G D}{(L_S+p_S L_G)^2}; \tag{7}$$

$${y_G}^E = \frac{L_S D}{(L_S+p_S L_G)^2}. \tag{8}$$

Using (2)-(4) and (7)-(8), the equilibrium pay-off to an S individual in period 2 when matched with a G individual is:

$${u_{SG}}^E = D\left(\frac{p_S L_G}{L_S+p_S L_G}\right)^2; \tag{9}$$

whereas that of the G individual is:

$${u_{GS}}^E = D\left(\frac{L_S}{L_S+p_S L_G}\right)^2. \tag{10}$$

The probability that an S individual is matched with a G individual is r_G. Analogously, the probability that a G individual is matched with an S individual is $1-r_G$. Hence, using (9), the expected utility of an S individual in period 1 is:

$$V_S = r_G D\left(\frac{p_S L_G}{L_S+p_S L_G}\right)^2 - x_i {r_S}^\theta T_S(W_S). \tag{11}$$

Using (10), the expected utility of a G individual in period 1 is:

$$V_G = (1-r_G) D\left(\frac{L_S}{L_S+p_S L_G}\right)^2 - x_i {r_G}^\theta T_G(W_G). \tag{12}$$

All individuals simultaneously choose their political effort allocations in period 1 to maximize their respective expected utilities given by (11) and (12), subject to the political contest technology defined by (1). Using (11) and (12), the marginal pay-offs from political effort are:

$$\frac{\partial V_S}{\partial x_i} = 2 r_G D\left(\frac{p_S L_G}{L_S+p_S L_G}\right)\left(\frac{L_S L_G}{(L_S+p_S L_G)^2}\right)\left(\frac{X_G}{X^2}\right) - {r_S}^\theta T_S(W_S); \tag{13}$$

$$\frac{\partial V_G}{\partial x_i} = 2 r_S D\left(\frac{L_S}{L_S+p_S L_G}\right)\left(\frac{L_S L_G}{(L_S+p_S L_G)^2}\right)\left(\frac{X_S}{X^2}\right) - {r_G}^\theta T_G(W_G). \tag{14}$$

Recall that, for every $g \in \{S.G\}$, either [$T_g{}'(W) < 0$ throughout or $T_g{}'(W) > 0$ throughout]. Then, the direction of the change in the expected marginal utility of political action, due to an increase in wealth, is either always positive or always negative. More formally, (13) and (14) yield:

for every $g \in \{S, G\}$: [$\frac{\partial V_g}{\partial x_i \partial W_g} > 0$ if $T_g{}'(W) < 0$; and $\frac{\partial V_g}{\partial x_i \partial W_g} < 0$ if $T_g{}'(W) > 0$].

It is evident that $p_S \in (0,1)$ in equilibrium. The following lemma is then immediate.

Lemma 1. Let $X_{g_k} = \sum_{i \in g_k} x_i$. In any subgame-perfect Nash equilibrium: (i) $X_G, X_S > 0$, and (ii) for every $g \in \{S, G\}$: [[$X_g = X_{g_R}$ if $T_g{}'(W) < 0$] and [$X_g = X_{g_P}$ if $T_g{}'(W) > 0$]].

By Lemma 1, only one type of individuals participates in political contestation from either group. This is the *R* type if the cost of political action declines in wealth for that group, and the *P* type otherwise. Assuming an interior solution, and noting (13) and (14), the first order conditions then yield the equilibrium group political influence:

$$(1 - {p_S}^E) = \left(\frac{1-r_G}{r_G}\right)^{1+\theta} \left(\frac{T_S(W_S)L_S}{T_G(W_G)L_G}\right); \tag{15}$$

where, for all $g \in \{S, G\}$: [$W_g = \overline{W}_g$ if $T_g{}'(W) < 0$] and [$W_g = \underline{W}_g$ if $T_g{}'(W) > 0$].

Recall that the representative *S* individual is matched with a *G* individual with probability r_G. Then, by (8), the equilibrium value of expected assertive action by a G individual suffered by an *S* individual on average, i.e., the per capita assertive action suffered by the *S* group, is:

$${Y_G}^E = r_G D \left(\frac{L_S}{(L_S + {p_S}^E L_G)^2}\right). \tag{16}$$

The per capita assertive action committed by the *S* group in equilibrium by (7), is:

$${Y_S}^E = \frac{r_G D}{\left(\frac{L_S}{\sqrt{{p_S}^E L_G}} + \sqrt{{p_S}^E L_G}\right)^2}. \tag{17}$$

We wish to focus on a scenario where *G* individuals dominate *S* individuals at least minimally, i.e., $y_s < y_G$ in equilibrium. This is the most likely outcome in reality.[10] Second, in real life scenarios, greater

[10] Using data from a nationally representative sample of nearly 37,000 households, Malhotra (2022) found that, in 2011, a scheduled caste household was around 40% more likely, on average, to report attacks/threats than any upper caste group, even in within-village comparisons. A scheduled caste household was more likely to report attacks/threats relative to others, in especially those villages where discriminatory caste traditions were practiced, or where living arrangements are caste-segregated within the village. This is suggestive of upper caste and OBC domination of SCs in most rural contexts.

assertive action by *S* individuals is typically conflict-escalatory - it is associated with greater assertive action by *G* individuals (recall the discussion and examples in footnote 4). Since $-\frac{\partial F(y_S,y_G)}{\partial y_G}=\frac{y_S}{(y_S+y_G)^2}$, $-\frac{\partial F(y_S,y_G)}{\partial y_G}$ increases in y_S if, and only if, $y_S<y_G$. Thus, conflict-escalatory assertive action by *S* individuals requires $y_S<y_G$ in our model. Hence, to endogenously ensure this as the equilibrium outcome, we impose the following restriction.

Assumption 1. $1<\left(\frac{L_S}{L_G}\right)\left[\frac{1}{2}+\left(\frac{1-r_G}{r_G}\right)^{1+\theta}\left(\frac{\min\{T_S(\overline{W}_S),T_S(\underline{W}_S)\}}{\min\{T_G(\overline{W}_G),T_G(\underline{W}_G)\}}\right)\right]$.

As shown in the proof of Lemma 2 in appendix A, Assumption 1 implies that the expected cost of caste-assertive action is higher for *S* individuals in equilibrium, i.e., $\left(\frac{L_S}{{p_S}^E L_G}\right)>2$. This in turn, by (7)-(8), implies ${y_S}^E<{y_G}^E$, so that (a) *S* individuals are dominated, and (b) greater assertive behavior by them brings forth an escalatory assertive response by *G* individuals.

In the next section, we shall subject official data regarding crimes against SCs to scrutiny. The data we have provide the per capita rates of crimes under various categories committed against SCs that have been registered. It is generally accepted that only a small proportion of crimes committed against SC individuals are registered by the police. In our model, p_S is the probability that assertive action by upper castes or OBCs would receive legal sanction. We assume that:

$$p_S=k(r_G)\rho_R\rho_V; \tag{18}$$

where ρ_R is the probability that such assertive action will be registered by the police (the registration rate), ρ_V is the probability that assertive action against SCs registered and charge-sheeted by the police will be sentenced by the judicial system (the conviction rate) and $k(r_G)$ is the charge-sheeting rate; $k'(r_G)<0$ and $k(r_G)\in[0,1]$ for all $r_G\in[0,1]$. Thus, the charge-sheeting rate is assumed to be independent of both within-group and between-group inequality, but increasing in the SC population share.[11] Since a crime against SCs is registered by the police as the outcome of pressure and counter-pressure by the SC victim and the non-SC perpetrator, it is reasonable to assume that the registration rate reflects the outcome of the period 2 assertion contest between SC and non-SC individuals. Thus, using (7) and (8), in equilibrium:

[11] This assumption has an empirical justification - this is what we find in our data-set.

$$\rho_R{}^E = \frac{y_S{}^E}{y_S{}^E + y_G{}^E} = \frac{p_S{}^E L_G}{L_S + p_S{}^E L_G}; \tag{19}$$

and, using (18) and (19),

$$\rho_V{}^E = \frac{L_S + p_S{}^E L_G}{L_G k(r_G)}. \tag{20}$$

Since, by Assumption 1, $\left(\frac{L_S}{p_S{}^E L_G}\right) > 2$, using (19), $\rho_R{}^E < \frac{1}{3}$. Furthermore, by Assumption 1 and (20),

$$\rho_V{}^E = \frac{L_S + p_S{}^E L_G}{L_G k(r_G)} < \frac{3L_S}{2L_G k(r_G)}.$$

Thus, given Assumption 1, $\rho_V < 1$ if $\frac{L_S}{L_G} \leq \frac{2k(r_G)}{3}$. We assume that this is indeed the case. Recalling (16) and (19), the per capita magnitude of assertive action suffered by SCs which is registered as hate crimes against them, which we identify with the *registered rate of crimes* against SCs, then is:

$$C_S{}^E = \rho_R{}^E Y_G{}^E = \left(\frac{L_G}{L_S + p_S{}^E L_G}\right) p_S{}^E Y_G{}^E. \tag{21}$$

Proposition 1. Let Assumption 1 hold. Let $w_G = \frac{\overline{W}_G + \underline{W}_G}{2}$, $\Delta = \overline{W}_G - w_G$, $w_S = \frac{\overline{W}_S + \underline{W}_S}{2}$, and $\ddot{\Delta} = \overline{W}_S - w_S$. Then:

(a) $\frac{dC_S{}^E}{d\Delta}, \frac{dY_S{}^E}{d\Delta} < 0$ and $\frac{dY_G{}^E}{d\Delta} > 0$;

(b) $\frac{dC_S{}^E}{d\ddot{\Delta}}, \frac{dY_S{}^E}{d\ddot{\Delta}} > 0$ and $\frac{dY_G{}^E}{d\ddot{\Delta}} < 0$];

(c) if $\theta \geq -1$, then $\frac{dC_S{}^E}{dr_g}, \frac{dY_S{}^E}{dr_g} > 0$; if $\theta = -1$, then $\frac{dY_G{}^E}{dr_g} > 0$;

(d) if $T_S{}' < 0$ (resp. > 0) then $\frac{dC_S{}^E}{dw_S}, \frac{dY_S{}^E}{dw_S} > 0$ (resp. < 0)] and $\frac{dY_G{}^E}{dw_S} < 0$ (resp. > 0);

(e) if $T_G{}' < 0$ (resp. > 0) then $\frac{dC_S{}^E}{dw_G}, \frac{dY_S{}^E}{dw_G} < 0$ (resp. > 0)] and $\frac{dY_G{}^E}{dw_G} > 0$ (resp. < 0).

Proof. See appendix A.

By Proposition 1(a), a mean-preserving increase in wealth inequality *within G* reduces the registered rate of crimes against *S* (C_S^E). Proposition 1(b) states that a mean-preserving increase in wealth inequality *within S* increases C_S^E.[12] By Proposition 1(c), a rise in the population share of S reduces C_S^E

[12] If the inequality in Assumption 1 is reversed, then $\frac{dC_S{}^E}{d\Delta} > 0$ and $\frac{dC_S{}^E}{d\ddot{\Delta}} < 0$. A weaker version of Assumption 1 suffices to ensure $\frac{dY_S{}^E}{d\Delta} < 0$ and $\frac{dY_S{}^E}{d\ddot{\Delta}} > 0$. Irrespective of whether Assumption 1 is satisfied or violated, $\frac{dY_G{}^E}{d\Delta} > 0$ and $\frac{dY_G{}^E}{d\ddot{\Delta}} < 0$.

provided the population-weighted marginal cost of political action ($r^{\theta+1}T(W)$) is non-decreasing in group size. By Proposition 1(d), a spread-preserving increase in the mean wealth of S increases the crime rate registered if the marginal cost of political action declines in wealth within S (so that only the rich in S participate in political action). It reduces that rate otherwise (i.e., if only the poor in S participate in political action). Opposite effects hold for a spread-preserving increase in the mean wealth of G (Proposition 1(e)). In every case, the per capita assertive action committed by S (${Y_S}^E$) moves in the same direction as the crime rate. Per capita assertive action suffered by S (${Y_G}^E$) moves in a direction opposite to that of the registered rate of crimes against SCs when within-group or between-group inequality changes (Proposition 1, parts (a), (b), (d) and (e)).

As proved in Lemma 2 in appendix A, Assumption 1 implies that ${Y_S}^E$ is monotonically increasing in ${p_S}^E$. Then, noting equations (15) and (17), Proposition 1 implies the following corollary.

Corollary 1.

(a) $\frac{d{p_S}^E}{d\Delta} < 0$;

(b) $\frac{d{p_S}^E}{d\ddot{\Delta}} > 0$;

(c) if $\theta \geq -1$, then $\frac{d{p_S}^E}{dr_G} \geq 0$; $\frac{d{p_S}^E}{dr_G} < 0$ otherwise.

(d) if ${T_S}' < 0$ (resp. > 0) then $\frac{d{p_S}^E}{dw_S} > 0$ (resp. < 0);

(e) if ${T_G}' < 0$ (resp. > 0) then $\frac{d{p_S}^E}{dw_G} < 0$ (resp. > 0).

By Corollary 1, the degree of influence over state institutions, such as the police and the judiciary, exerted by the SC bloc increases when SCs become internally more unequal, and declines when the non-SC bloc becomes internally more unequal. So long as θ is relatively high (even if negative), such influence does not rise as the population share of SCs rises; it rises otherwise. Recall that this determines the extent to which assertive action committed against SCs is sanctioned by the legal system in our model. It is through this channel that within-group inequality influences individual caste-assertive behavior in our model, and therefore the rate of crimes against SCs. SC influence over state institutions may rise or fall with a spread-preserving rise in the average wealth of either community, depending on how the marginal cost of engaging in political action responds to an increase in wealth.

Remark 1. By Proposition 1(a), greater internal inequality within *G* makes that group more aggressive, as in Esteban and Ray (2011) - it engages in greater assertive behavior (${Y_G}^E$) against *S*. Analogously, by Proposition 1(b), greater internal inequality within *S* makes it engage in greater assertive behavior against *G*: ${Y_S}^E$ rises in consequence.

Remark 2. Mitra and Ray (2014) present a theoretical model where increase in the wealth of a community expands aggressive actions against it by another community. Our model generates ambiguous conclusions with regard to this relationship. By Proposition 1(d), ${Y_G}^E$ increases as S individuals become wealthier when ${T_S}' > 0$, but it decreases when ${T_S}' < 0$. By Proposition 1(e), ${Y_S}^E$ increases as G individuals become wealthier when ${T_G}' > 0$, but it declines when ${T_G}' < 0$. It follows that our model does not restrict the direction of the impact of an increase in between-group inequality on either registered assertive action, or assertive action actually committed. These effects can be either positive or negative, depending on how wealth change affects the marginal cost of political action (i.e., the signs of ${T_S}'$ and ${T_G}'$). Furthermore, if wealth affects the marginal cost of political action in opposite ways across caste blocs (so that ${T_S}'{T_G}' < 0$), then the impact of between-group inequality on assertive action is of indeterminate sign for both registered assertive action and assertive action actually committed. This is so because, by Proposition 1((d) and (e)), within-group spread-preserving (i.e., constant $\ddot{\Delta}$) rises in mean S wealth and such (i.e., constant Δ) reductions in mean G wealth affect assertive action in opposite ways when ${T_S}'{T_G}' < 0$. By Corollary 1((d) and (e)), the ambiguity affects the sign of the impact on the degree of equilibrium SC control over institutions - p_S^E. Thus, we do not have any a priori theoretical grounds for hypothesizing that a rise in between-group inequality will affect registered assertive action suffered by the *S* group (or assertive action committed by it), or the extent of its institutional control, in either a positive or a negative direction.

Lastly, by Corollary 1(a), 1(b) and (20),

$$\frac{d{p_V}^E}{d\Delta} < 0, \frac{d{\rho_V}^E}{d\ddot{\Delta}} > 0. \tag{21}$$

Proposition 1 ((a) and (b)) and (21) yield the following hypotheses.

H_1: A rise in wealth inequality among non-SC/ST Hindus is associated with a fall in the registered rate of crime against SCs.

H_2: A rise in wealth inequality among SCs is associated with a rise in the registered rate of crime against SCs.

H_3: A rise in wealth inequality among non-SC/ST Hindus is associated with a fall in the conviction rate for crimes against SCs.

H_4: A rise in wealth inequality among SCs is associated with a rise in the conviction rate for crimes against SCs.

These are the primary hypotheses that we will test in our empirical analysis. Recall that, as discussed in Remark 2, our theoretical model leaves open the sign of any association between wealth inequality between SCs and non-SC/ST Hindus and the registered rate of crime against SCs, or the conviction rate thereof. Our theoretical model also leaves open the sign of any association between the SC population share and the registered crime rate or the conviction rate: this may be positive or negative, depending on the parameter θ and the size of the first derivative of the charge-sheeting function $k(r_G)$.

Upper caste and OBC organizations sometimes argue that a significant proportion of the cases registered under the SCST Act are false or frivolous, lodged by SCs to harass or blackmail members of other communities. We can permit this possibility by assuming that some proportion, α, of assertive action by SCs takes the form of false cases registered against other castes. Then, the registered crime rate in equilibrium is given by:

$$C_S^{E^*} = C_S^{E} + \alpha \rho_R{}^E Y_S^E;$$

where $\alpha \in [0,1]$. Recalling (19), it follows from Proposition 1((a) and (b)) and Corollary 1((a) and (b)) that $C_S^{E^*}$ moves in the same direction as C_S^{E} as either Δ or $\ddot{\Delta}$ changes. Hence, the testable hypotheses H_1 and H_2 are implied by our model regardless of whether the registered crime rate is interpreted as C_S^{E} or $C_S^{E^*}$. The conviction rate would not be significantly affected either if most false complaints filed by SCs are thrown out before the charge-sheeting stage – an empirically reasonable assumption. Then the hypotheses H_3 and H_4 would remain unchanged as well. Thus, the possibility of false complaints by SCs can be accommodated in our model without altering its primary empirical implications.

3. Data and methodology

We now proceed to subject our theoretical analysis to empirical scrutiny.

3.1. Data

We compile state-level panel data over 2005-2021 using multiple official sources. Using household monthly per capita expenditure data, we construct three alternative inequality indices. For this, we utilize household expenditure data from the national Employment Unemployment Survey (EUS),

available for 2005, 2007, 2009 and 2011. Since there was no EUS thereafter, we use the Periodic Labour Force Survey (PLFS) data available from 2017 onwards. We use household expenditure data from PLFS for 2017, 2018, 2019, 2020 and 2021. While PLFS publishes quarterly data, we use the average for the year for each round of PLFS between 2017-2021 to make them comparable with the annual EUS expenditure data. Although there are some concerns about the comparability of EUS and PLFS consumption expenditure data, our consumption inequality measures are all relative measures. Thus, any scale differences across the data sets are eliminated by our inequality measures. We do not therefore view comparability as a serious problem. We construct three inequality indices - inequality between the top quartile and the rest, the Gini index and Theil's index – separately for non-SC/ST (upper caste and OBC) Hindus and SCs. These are explained in Section 3.2.

Our outcome measures pertain to (i) crime rates against SCs, and (ii) the conviction rate for such crimes. These data come from the National Crime Record Bureau (NCRB) for all the relevant 9 years between 2005-2021 (see below). We consider the rates of crimes against SCs registered under the SCST Act, both alongside sections of the Indian Penal Code (IPC) and otherwise; we also add them up to get the aggregate rate of crime against SCs. Our data-set also provides the judicial conviction rate for all crimes against SCs, which we use as our other outcome measure.

We match NCRB state-level crime and conviction data with state-level expenditure data generated from EUS/PLFS unit level expenditure data for the years 2005, 2007, 2009, 2011 and then 2017-2021. This gives rise to a sample of 324 state-year level observations over 2005-2021 for 36 states, though there are some missing observations. As controls, we use variables derived from multiple, publicly available, sources. We collect state-level illiteracy and literacy rates at various levels, and unemployment rates, from EUS/PLFS. We use state-level SC population shares and rural population shares from Census 2011 and Census 2001. We use per capita real (inflation-adjusted) net state domestic product (NSDP) figures available from the EPW Research Foundation. We also use a state-level variable – the number of police personnel per 100,000 population - capturing police capacity, available annually from the Bureau of Police Research and Development.

Our data structure differs from that of Sharma (2015), who used two period district-level panel data. She matched aggregated district-level crimes for 2001-2005 with 2004/5 National Sample Survey (NSS) expenditure data. For the second period, she matched aggregated 2006-10 crime data with 2009-10 NSS expenditure data. The argument was that this aggregation overcomes the problem of many districts reporting zero crime in a single year. Our state-level panel data over a longer time horizon helps avoid zero crime observations. Sharma (2016) does not consider the judicial conviction rate at all.

Apart from the judicial conviction rate for all crimes against SCs, our key outcome variables are the following measures of crime against SCs:

(i) State-level IPC crimes against SCs (SC_IPC); (ii) state-level non-IPC crimes against SCs (SC_woIPC). (iii) Total crimes against SCs is the sum of IPC and non-IPC crimes. Indian Penal Code (IPC) crimes include violent crimes, or crimes against the body - IPC crimes are the sum of murder, rape, kidnap, hurt, dacoity, robbery, arson and other IPC crimes. Category (i) consists of crimes against SCs registered under the SCST Act, alongside relevant IPC sections. Category (ii) - non-IPC crimes - include crimes registered under the SCST Act, alongside relevant provisions of Special and Local Laws (SLL) rather than the IPC. SLL crimes with regard to SCs include matters such as insult or humiliation, land occupation, restricting SCs from the use of public space or passages, social boycott, etc. We also consider the total IPC (Ccrimerat_IPC) and IPC+SLL (Ccrimert_IPCSLL) cognizable crime rates as a control variable.

Panels a and b of Table 1 summarize the descriptive statistics for the conviction rate, and the various crime and inequality variables that we constructed. It follows from Table 1 that the means of SC inequality indices are smaller than those for the non-SC/ST Hindu group. The average value of the IPC crime rate against SCs is much higher than that of non-IPC crimes against SCs. The average conviction rate for crimes against SCs is far lower than – only about two fifths of – the average conviction rate for all crimes.

Insert Table 1

3.2. Empirical Model

We operationalise the theoretical model to determine crime against SCs, C_{ST}, for the s-th state in year t empirically using state-level panel data with state and year fixed effects ϕ_s and τ_t as follows:

$$C_{ST} = \beta_0 + \beta_1 Ineq_{st} + \beta_2 SCIneq_{st} + \beta_3 SCPopsh_{st} + \beta_4 X_{st} + \phi_s + \tau_t + u_{st} \quad (22)$$

Our key explanatory variables are measures of wealth inequality Ineq for Hindu non-SC/ST group, SCIneq for SCs and the SC population share SCPopsh. We use three measures of inequality among non-SC/ST Hindus and among SCs, namely, i2 (see below), Gini and Theil's measure, with regard to vertical inequality in the distribution of monthly per capita consumption expenditure (mpce) for the two groups. We calculate mpce from EUS for 2005, 2007, 2009 and 2011 and from PLFS for 2017-2021. Given the castes of the households in both NSS/PLFS data-sets, we are able to generate mpce for Hindu non-sc/st households and also SC households. We use this information to generate the following inequality measures:

i2= (mpce_hindu_nonscst_q4/ mpce_hindu_nonscst) where mpce_hindu_nonscst_q4 is the mpce for the top quartile of Hindu non-SC/ST group; mpce_hindu_nonscst is the average mpce for all Hindu non-SC/ST population.

Gini: Gini coefficient in the distribution of Hindu non-SC/ST mpce

We generate Theil's index as follows: Consider a population of persons (or households ...), i = 1,...,n, with income y_i, and weight w_i. Let f_i = w_i / N, where N = SUM w_i. (In what follows all sums are over all values of whatever is subscripted.) When the data are unweighted, w_i = 1 and N = n. Arithmetic mean mpce for hindu non-sc/st group is m. Suppose there is an exhaustive partition of the population into mutually-exclusive subgroups k = 1,...,K.
Theil's index = SUM f_i (y_i / m) log(y_i / m)

We also construct the corresponding inequality measures for the SC group as additional controls in Equation (22):

i2_sc= (mpce_sc_q4/ mpce_sc)

Here mpce_sc is the average mpce for all SCs and mpce_sc_q4 is the average mpce for the top quartile of SCs in the distribution of mpce_sc.

Gini_sc: Gini coefficient in the distribution of mpce for the SC

Theil_sc: Theil index for the distribution of mpce for SC.

We not only include all internal inequality indices for Hindu non-sc/st group (i2, Gini and Theil), but also for the SC group (i2_sc, Gini_sc and Theil_sc) in alternative specifications depending on the choice of the inequality index.

In view of H_1 and H_2, we expect $\beta_1 < 0$ and $\beta_2 > 0$. We use our state-level panel to test the validity of these hypotheses after accounting for several control variables to minimise the unobserved heterogeneity of the estimates. In the baseline model, other control variables X include SC mpce as share of Hindu non-SC/ST mpce (i1), which captures between-group inequality and is the key explanatory variable in Sharma (2016). In addition, we include total cognizable crime rate in the state, net inflation-adjusted state domestic product per capita, illiteracy rate among rural males, primary literacy rate among rural males, unemployment rate per 1000 rural male and the rural population share. We choose these controls for the rural sector because crime against SCs is predominantly rural in nature. All regressions also include controls for state and year fixed effects to respectively account for the unobserved state-level time-invariant and time-varying factors common for all states. Panel c of Table 1 summarises the descriptive statistics for these control variables.

One can, however, be concerned about the possibility of simultaneity between the outcomes and the right-hand side variables. To minimise any potential simultaneity bias of these estimates, we estimate equation (23) and equation (23'), where we include one year lagged values of the right hand side variables, with C_{ST} denoting the crime rate as before and V_{ST} the corresponding conviction rate.

$$C_{ST} = \delta_0 + \delta_1 Ineq_{st-1} + \delta_2 SCIneq_{st-1} + \delta_3 SCPopsh_{st-1} + \delta_4 X_{st-1} + \phi_s + \tau_t + u_{st} \quad (23)$$

$$V_{ST} = \delta'_0 + \delta'_1 Ineq_{st-1} + \delta'_2 SCIneq_{st-1} + \delta'_3 SCPopsh_{st-1} + \delta'_4 X_{st-1} + \phi'_s + \tau'_t + u'_{st} \quad (23')$$

Equations (23) and (23') are our preferred empirical models for determining crimes against Scs and also the judicial conviction rates for crimes against SCs respectively. All standard errors are clustered at the state-level. As before, we focus on testing the validity of hypotheses H_1, H_2, H_3 and H_4: whether $\delta_1, \delta'_1 < 0$ and $\delta_2, \delta'_2 > 0$.

4. Results: Crime rates

In this section, we analyse the estimates of Equation (22) and Equation (23) using alternative inequality measures, namely, i2, Gini and Theil with a view to test the validity of hypotheses H_1 and H_2.

Estimates of Equation (22)

Table 2 summarises the estimates of Equation (22) using contemporaneous right-hand side variables. Columns (1)-(3) respectively show estimates of SC_IPC, SC_woIPC and SC_IPCSLL using i2 inequality measure. Columns (3)-(6) and columns (7)-(9) respectively show the corresponding estimates of SC_IPC, SC_woIPC and SC_IPCSLL using Gini and Theil's measures inequality.

Insert Table 2

First consider inequality within the non-SCST Hindu group from Table 2. H_1 leads us to expect a negative and statistically significant coefficient for all measures of such inequality. Our expectation is supported by the estimate of all inequality measures (i2, Gini and Theil) for determining the rate of crimes against SCs registered under the SCST Act, along with sections of the IPC, as well as the overall crime rate. The coefficients for the crime rate without IPC are insignificant. However, the rates of such crimes are quite low relative to crimes with IPC. Thus, the data broadly support H_1. Now consider measures of inequality among the SC population. H_2 leads us to expect a positive and statistically significant coefficient for such measures. The coefficients for crime with IPC and overall crime are

indeed positive and significant for the i2_SC measure – the average consumption of the top quartile among SCs expressed as a proportion of average SC consumption. The coefficients are however not significant for the other two measures of intra-SC inequality. Thus, we have only weak support for H_2.

The coefficients for the variable i1SC – inequality between SCs and non-SCs – are insignificant for all measures of crime and inequality, in contrast to the finding of Sharma (2016).

The population share of SCs has a negative and significant effect on the overall SC crime rate when within-group inequality is measured by i2, but not otherwise. The estimated coefficients of SCpopsh are negative and statistically significant for determining SC_woIPC irrespective of the choice of the inequality measure.

Among other controls, greater literacy (illiteracy) among rural males is associated with a significantly higher (lower) crime against SCs. Higher unemployment among rural male is also associated with a positive and significant coefficient for the overall rate of crimes against SCs.

However, as noted earlier, these baseline estimates are likely to be biased because of potential simultaneity. Hence, we next move on to consider the estimates of Equation (23), which remains our preferred specification.

Estimates of Equation (23)

Table 3 shows the estimates of Equation (23) for all three crime indices using alternative inequality indices: i2 (columns 1-3), Gini (columns 4-6) and Theil (columns 7-9).

Insert Table 3

As before, there is confirmation of hypotheses H_1 – the coefficient estimates of the within group inequality indices are all negative and statistically significant for SC_IPC and SC_IPCSLL irrespective of the choice of the inequality index. As before, the estimated coefficient, although negative, remains statistically insignificant for non-IPC crime against SCs, which could be attributed to its low numbers. There is now strong support for hypothesis H_2 as well – all indices of within-SC inequality are significantly and positively associated with the IPC and total crime rates.

As before, the lagged value of i1SC remains statistically insignificant in all columns. The estimated coefficient of SCpopsh is negative in all columns, but statistically significant for determining SC_woIPC and SC_IPCSLL using i2 and Gini indices. The corresponding coefficient using the Theil index is only significant for SC_woIPC.

In sum, the lagged model strongly supports both H_1 and H_2.

Robustness test

Using Equation (23) as our preferred model, we conduct a robustness test. We include additional control for total IPC and SLL cognizable crime rate to account for the crime situation in the state and check if H_1 and H_2 still hold. Table 4 estimates include additional control for cognizable IPC and SLL crime rate and reaffirms the validity of both H_1 and H_2. For both IPC crimes and overall crimes, the estimated coefficients of all inequality indices for non-SCST Hindus are negative and significant, while those for SCs are all positive and significant.

Insert Table 4

Between-group inequality remains insignificant in every case; so is SCpopsh with regard to IPC and total crime against SCs.

In all the cases considered in Tables 3-4, the primary literacy rate among rural males has a positive and significant effect on the reported rates of both IPC and overall crimes against SCs. A higher primary literacy rate overall probably captures a higher SC literacy rate relative to other castes, since gains in literacy are achieved by schooling previously unschooled sections of the population, who are disproportionately SCs. If so, the positive and significant effect is explained by more effective collective SC political action in consequence of higher literacy, and therefore greater individual SC assertion, leading to a higher reporting and registration rate for crimes against them.

In sum, we find strong support for the hypotheses H_1 and H_2 under our preferred specification Equation (23), regardless of the inequality measure considered, with and without control for the overall crime rate.

5. Results: Conviction rate

We now present the estimates of our preferred specification, Equation (23'), to examine the validity of hypotheses H_3 and H_4.

The results are presented in Tables 5 and 6. Table 5 shows the estimates of judicial conviction rates for crimes against SCs using the baseline specification with lagged explanatory variables as in Table 3. Table 6 additionally controls for lagged values of overall crime rate and overall judicial conviction rate.

Insert Tables 5 and 6

In all cases, the conviction rate for registered crimes against SCs is negatively, and significantly, associated with inequality among non-SC/ST Hindus. Thus, our results strongly support hypothesis H_3. The coefficient for inequality among SCs is positively and significantly associated with the conviction rate in all cases as well. Thus, we get empirical support for hypothesis H_4 as well.

Between-group inequality remains insignificant in all cases, while the SC population share has a positive and significant effect on the conviction rate for crimes against SCs in all cases. Thus, though (as discussed in section 4) the evidence for the relationship between SC population share and crime rates is mixed, the SC population share turns out to have a positive and significant effect on the conviction rate, irrespective of the regression specification.

In all the cases considered in Tables 5-6, the primary literacy rate among rural males has a positive and significant effect on the conviction rate for crimes against SCs, analogous to the finding for crime rates mentioned in Section 4. The illiteracy rate within this group has a negative and significant effect in all cases except one. As argued earlier, a higher primary literacy rate overall probably captures a higher SC literacy rate relative to other castes. The positive and significant effect on conviction is then explained by more effective SC political action in consequence of higher literacy, and therefore greater SC influence on the police and the judiciary. The negative and significant effect of the illiteracy rate has a parallel explanation.

6. Results: Internal inequality and police capacity

In our theoretical model, greater inequality among non-SC/ST Hindus reduces the registered rate of crimes against SCs because it reduces the registration/reporting of such crimes. Lower inequality among SCs has the same effect. Lower reporting is likely to be associated with fewer police personnel – lower police capacity to record crimes. We therefore check whether lagged internal inequality is indeed associated with police capacity, measured by the natural log of the number of police personnel per 100,000 population. The results are presented in Table 7 below.

Insert Table 7

Table 7 shows that greater lagged inequality among non-SC/ST Hindus leads to fewer police personnel per 100,000 population. The estimated coefficient is negative for all three inequality measures, and significant for two (Gini and Theil's indices). The estimated coefficient for intra-SC inequality is

positive in all cases, though not significant. These findings appear consistent with significantly greater reporting/registration of crimes against SCs in consequence of lower inequality among non-SC/ST Hindus.[13]

7. Conclusion

This paper examines how within-group inequality, by influencing the group bias of state institutions, affects the decentralized cost-benefit calculus of individuals, with regard to identity-assertive behaviour that results in police complaints regarding hate crimes. We develop a two-stage contest model of between-group conflict, where the relative group influence over state institutions, determined in the first period, affects decentralized hierarchical interaction between individuals belonging to opposing groups in the second period. Applying this model to caste conflict in India, we find that greater inequality among upper caste and OBC Hindus might reduce the registered rate of crimes against SCs committed by such individuals, as well as the conviction rate for anti-SC crimes. Conversely, greater inequality among SCs increases both the registered crime rate and the conviction rate. Using state-level annual crime and household consumption data from India over the period 2005-2021, we find robust empirical support for these hypotheses. Between-group inequality does not appear to matter for either the crime rate against SCs or the conviction rate. We find a higher SC population share to be positively and significantly associated with the conviction rate for crimes against SCs, though the results for the crime rate are mixed. Greater primary literacy among rural males is associated with a positive and significant effect on both the registered crime rate and the conviction rate.

Iyer *et al.* (2012) find that an increase in female representation in local government induces a large and significant rise in documented crimes against women in India. They suggest that this increase is driven primarily by greater reporting, rather than greater incidence, of such crimes. Our finding, that within-group inequality affects the registered rate of crimes against SCs and the conviction rate for such crimes in the same direction, has a similar interpretation. In conjunction with our theoretical analysis, these empirical findings suggest that a higher rate of crimes against SCs is driven by greater reporting and registration of such crimes, brought about by greater assertion and contestation of traditional norms by SCs at the individual/local, or micro, level. Greater local-level SC assertion and contestation in turn is facilitated by greater within-SC inequality (or lower inequality among upper castes and OBCs) at the state level. This, through macro-level political contestation, makes punitive institutions, such as the police and the judiciary, more sensitive or sympathetic to SC individuals engaged in local conflicts with those from other castes. Registration of crimes against SCs rises in consequence, increasing the

[13] We did not find any significant effect of police capacity on the conviction rate, suggesting that the channels through which internal inequality and SC population share affect conviction may be different.

documented crime rate, as well as the conviction rate. We find evidence that lower inequality among upper castes and OBCs leads to greater supply of police personnel, which appears consistent with greater reporting and registration of anti-SC crimes.

Our analysis carries important implications for understanding between-group conflict and identity-driven hate crimes in different contexts. It suggests that within-group, rather than between-group, inequality might constitute the key determinant of hate crimes, when state institutions such as the police and the judiciary are open to capture by the contending identity groups. Our analysis also suggests that greater inequality within marginalized groups might serve a protective function: it might reduce identity-assertive violence or discrimination against members of that group and increase the effective prosecution of such crimes. It thus offers a justification for nurturing a better-off (even rich) segment among traditionally marginalized groups – an elite or 'creamy layer'. This is a matter of much interest in debates over affirmative action policies in India and elsewhere.[14] Conversely, reduction of inequality within dominant groups might improve policing and enhance the security of marginalized groups. Lastly, expansion of education among marginalized groups might increase the reporting and effective prosecution of crimes against them. We look forward to the application of our framework to identitarian hate crimes in contexts other than caste in India.

Appendix A

We shall prove Proposition 1 via the following lemma.

Lemma 2. Let Assumption 1 hold. Then: $\frac{dC_S{}^E}{dp_S{}^E}, \frac{dY_S{}^E}{dp_S{}^E} > 0$ and $\frac{dY_G{}^E}{dp_S{}^E} < 0$.

Proof of Lemma 2. By Assumption 1:

$$\left(\frac{L_S}{2L_G}\right) > 1 - \left[\left(\frac{1-r_G}{r_G}\right)^{1+\theta}\left(\frac{L_S \min\{T_S(\overline{W}_S), T_S(\underline{W}_S)\}}{L_G \min\{T_G(\overline{W}_G), T_G(\underline{W}_G)\}}\right)\right].$$

By (15),

[14] For example, in a recent (2024) judgement, the Supreme Court of India permitted states to create sub-classifications within the SC and ST categories, for implementing sub-quotas in affirmative action programs for the most marginalized communities within these categories. This overturned an earlier judgement requiring the states to view these categories as homogeneous. In so doing, the judgement explicitly recognized significant intra-SC inequality – it created space for reducing such inequalities through sub-quotas. Many SC/ST organizations oppose the judgement – they organized country-wide street protests on 21 August 2024. Our results offer one possible, novel justification for such opposition.

$$p_S{}^E = 1 - \left(\frac{1-r_G}{r_G}\right)^{1+\theta} \left(\frac{L_S \min\{T_S(\overline{W}_S), T_S(\underline{W}_S)\}}{L_G \min\{T_G(\overline{W}_G), T_G(\underline{W}_G)\}}\right).$$

Combining,

$$\left(\frac{L_S}{L_G}\right) > 2p_S{}^E. \tag{N1}$$

(N1) implies:

$$\frac{1}{L_G} > \frac{2p_S{}^E}{L_S}. \tag{N2}$$

From (16) and (21),

$$C_S{}^E = L_G L_S r_G D \left(\frac{1}{\left(\frac{L_S}{p_S{}^{E\frac{1}{3}}} + p_S{}^{E\frac{2}{3}} L_G \right)^3} \right). \tag{N3}$$

Let $a = p_S{}^{E\frac{1}{3}}, Z = \frac{L_S}{a} + a^2 L_G$. Then $\frac{dZ}{da} = 2aL_G - \frac{L_S}{a^2}$, so that $\frac{dZ}{da} < 0$ iff $\frac{2p_S{}^E}{L_S} < \frac{1}{L_G}$. Therefore, by (N2),

$$\frac{dC_S{}^E}{dp_S{}^E} > 0.$$

From (17),

$$Y_S{}^E = \frac{r_G D}{\left(\frac{L_S}{\sqrt{p_S{}^E L_G}} + \sqrt{p_S{}^E L_G} \right)^2}.$$

Let $b = p_S{}^{E\frac{1}{2}}, \ddot{Z} = \frac{L_S}{a\sqrt{L_G}} + a\sqrt{L_G}$. Then $\frac{d\ddot{Z}}{da} = \sqrt{L_G} - \frac{L_S}{a^2\sqrt{L_G}}$, so that $\frac{d\ddot{Z}}{da} < 0$ iff $\frac{p_S{}^E}{L_S} < \frac{1}{L_G}$. Therefore, by (N2),

$$\frac{dY_S{}^E}{dp_S{}^E} > 0.$$

It follows from (16) that:

$$\frac{dY_G{}^E}{dp_S{}^E} < 0. \blacksquare$$

Proof of Proposition 1. Let Assumption 1 hold.

(a) Recalling (15), by Lemma 1,

$$\text{if } T_G{}' < 0, \text{ then } [(1 - p_S{}^E) = \left(\frac{1-r_G}{r_G}\right)^{1+\theta} \left(\frac{T_S(W_S)L_S}{T_G(w_G+\Delta)L_G}\right)];$$

if $T_G' > 0$, then $[(1 - {p_S}^E) = \left(\frac{1-r_G}{r_G}\right)^{1+\theta} \left(\frac{T_S(W_S)L_S}{T_G(w_G-\Delta)L_G}\right)]$.

Hence, in either case,

$$\frac{d{p_S}^E}{d\Delta} < 0. \tag{N4}$$

Using (N3),

$$\frac{d{C_S}^E}{d\Delta} = \frac{d{C_S}^E}{d{p_S}^E}.\frac{d{p_S}^E}{d\Delta}. \tag{N5}$$

Recalling Lemma 2 and (N4), $\frac{d{C_S}^E}{d{p_S}^E}.\frac{d{p_S}^E}{d\Delta} < 0$. Hence, (N5) implies:

$$\frac{d{C_S}^E}{d\Delta} < 0.$$

In an exactly analogous manner, Lemma 2 and (N4) together imply $\frac{d{Y_S}^E}{d\Delta} < 0$ and $\frac{d{Y_G}^E}{d\Delta} > 0$.

(b) The proof of Proposition 1(b) is analogous to that of Proposition 1(a) and is therefore omitted.

(c) By (15), [if $\theta \geq -1$, then $\frac{d{p_S}^E}{dr_G} \geq 0$]. By (N3),

$$\frac{d{C_S}^E}{dr_G} = \frac{d{C_S}^E}{d{p_S}^E}.\frac{d{p_S}^E}{dr_G} + L_G L_S D \left(\frac{1}{\left(\frac{L_S}{{p_S}^{E^{\frac{1}{3}}}} + {p_S}^{E^{\frac{2}{3}}} L_G \right)^3} \right). \tag{N6}$$

Lemma 2 and (N6) together therefore imply:

$$\text{if } \theta \geq -1, \text{ then } \frac{d{C_S}^E}{dr_G} > 0. \tag{N7}$$

Analogously, Lemma 2 and (17) imply:

$$\text{if } \theta \geq -1, \text{ then } \frac{d{Y_S}^E}{dr_G} > 0.$$

Noting that, by (15), [if $\theta = -1$, then $\frac{d{p_S}^E}{dr_G} = 0$], it follows from Lemma 2 and (16) that:

$$\text{if } \theta = -1, \text{ then } \frac{d{Y_G}^E}{dr_G} > 0.$$

(d) Recalling (15), by Lemma 1,

$$\text{if } T_S' < 0, \text{ then } [(1 - {p_S}^E) = \left(\frac{1-r_G}{r_G}\right)^{1+\theta} \left(\frac{T_S(w_S+\ddot{\Delta})L_S}{T_G(W_G)L_G}\right)];$$

if $T_S' > 0$, then $[(1 - {p_S}^E) = \left(\frac{1-r_G}{r_G}\right)^{1+\theta} \left(\frac{T_S(w_S - \ddot{\Delta})L_S}{T_G(W_G)L_G}\right)]$.

Then,

$$\text{if } {T_S}' < 0, \text{ then } \frac{d{p_S}^E}{dw_S} > 0. \tag{N8}$$

Using (N3),

$$\frac{d{C_S}^E}{dw_S} = \frac{d{C_S}^E}{d{p_S}^E} . \frac{d{p_S}^E}{dw_S}.$$

Recalling Lemma 2, it follows from (N8) that:

$$\text{if } T_S' < 0, \text{ then } \frac{d{C_S}^E}{dw_S} > 0.$$

Analogously, using Lemma 2, (16) and (17), we get:

$$\text{if } {T_S}' < 0, \text{ then: } [\frac{d{Y_S}^E}{dw_S} > 0 \text{ and } \frac{d{Y_G}^E}{dw_S} < 0].$$

By an analogous argument:

$$\text{if } T_S' > 0, \text{ then: } [\frac{d{C_S}^E}{dw_S}, \frac{d{Y_S}^E}{dw_S} < 0 \text{ and } \frac{d{Y_G}^E}{dw_S} > 0].$$

(e) The proof of part (e) is similar to that of part (d) and is therefore omitted. ■

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TABLES

Table 1. Variable definitions and descriptive statistics

			(a) Crime variables	
Definitions	**Variable**	**Obs**	**Mean**	**Standard dev.**
IPC crime against SC	SC_IPC	305	6.8092	12.6791
Other crime against SC	SC_woIPC	307	1.5678	2.6888
IPC+SLL crime against SC	SC_IPCSLL	304	8.4148	13.1633
Inequality for Hindu upper caste			**(b) Key explanatory variables**	
Inequality for top quartile	i2	316	2.3437	0.7549
Gini inequality index	Gini	318	0.4393	0.2327
Theil's inequality index	Theil	318	4.8594	13.1998
			(c) Control variables	
Inequality for top quartile SC	i2_sc	300	2.0087	0.7709
Gini inequality index, SC	GiniSC	311	0.3209	0.2453
Theil's inequality index, SC	TheilSC	311	3.8668	11.5003
SC mpce relative to hindu non-sc/st	i1SC	315	0.7799	0.2415
All cognizable crime rate	Ccrimert_IPCSLL	320	378.8553	376.6201
SC population share	SCpopsh	318	0.1173	0.0839
Real NSDP per capita	NSDPPc	296	94585.9	59294.67
Literate primary rural male	literate_primary_rural_male	320	24.6075	10.7528
Not literate rural male	not_literate_rural_male	320	18.4531	10.1961
Unemployment rate rural male	UnempRate_Male_Rural	318	1.7045	2.2883
Rural population share	Ruralpopsh	318	0.6366	0.2125
Judicial conviction rate, crimes against SCs	SC_conviction	215	21.4214	23.2501
Judicial conviction rate, all crime	Conviction_Rate_ALL	317	52.5226	28.1408
Police capacity per 100,000 population	Police_per_100000pop	236	349.3228	301.0871

Table 2. Baseline estimates of crime against SC

VARIABLES	(1) SC_IPC	(2) SC_woIPC	(3) SC_IPCSLL	(4) SC_IPC	(5) SC_woIPC	(6) SC_IPCSLL	(7) SC_IPC	(8) SC_woIPC	(9) SC_IPCSLL
i2	-3.1974***	-0.0274	-3.1822***						
	(0.757)	(0.143)	(0.722)						
i2_sc	1.3476*	0.0476	1.3675*						
	(0.787)	(0.163)	(0.752)						
Gini				-9.5764***	0.1140	-9.5300***			
				(2.609)	(0.411)	(2.525)			
GiniSC				2.4187	-0.2242	2.3623			
				(2.554)	(0.452)	(2.526)			
Theil							-8.9197**	0.0378	-9.0321***
							(3.258)	(0.598)	(3.209)
TheilSC							0.5639	-0.0532	0.5865
							(0.940)	(0.178)	(0.949)
i1SC	2.3501	0.1796	2.9495	2.1479	0.1183	2.6525	2.1568	0.1294	
	(1.885)	(0.522)	(2.224)	(1.308)	(0.438)	(1.628)	(1.340)	(0.438)	
SCpopsh	-201.3605	-59.4508*	-274.2059**	-159.6002	-54.2890*	-229.6521	-138.4749	-53.2224*	-208.3849
	(131.776)	(32.106)	(131.369)	(138.169)	(30.272)	(137.189)	(142.217)	(29.925)	(140.814)
Ln(NSDPPc)	11.8417	0.4849	11.9566	8.8217	0.1797	8.7369	7.8718	0.1892	7.8165
	(8.507)	(1.411)	(8.319)	(8.716)	(1.310)	(8.814)	(8.421)	(1.316)	(8.519)
literat_primary_rural_male	0.2238**	-0.0064	0.2185**	0.2318**	-0.0111	0.2265**	0.1946	-0.0090	0.1920*
	(0.099)	(0.025)	(0.097)	(0.106)	(0.024)	(0.105)	(0.117)	(0.025)	(0.111)
not_literate_rural_male	-0.4063*	0.0596	-0.3424	-0.4655**	0.0527	-0.4073*	-0.4503**	0.0497	-0.3925*
	(0.213)	(0.036)	(0.215)	(0.209)	(0.036)	(0.212)	(0.213)	(0.036)	(0.219)
UnempRate_Male_Rural	0.0559	0.0076	0.0846**	0.0488	0.0068	0.0763**	0.0489	0.0066	0.0758**
	(0.035)	(0.006)	(0.034)	(0.034)	(0.006)	(0.033)	(0.035)	(0.005)	(0.033)
Ruralpopsh	30.8917	-3.8315	23.2500	16.1308	-5.6244	7.4169	7.2845	-5.7729	-1.1967
	(47.682)	(7.771)	(42.809)	(45.148)	(7.638)	(40.886)	(41.628)	(7.253)	(38.061)
Intercept	-761.5497	-133.6367	-864.3170	-822.0094	-126.4505	-926.6060	-721.0116	-120.8363	-828.4396
	(771.617)	(146.983)	(783.765)	(806.571)	(150.980)	(829.902)	(788.477)	(145.442)	(817.984)
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	298	299	297	303	304	302	303	304	302
R-squared	0.422	0.076	0.492	0.411	0.075	0.479	0.408	0.075	0.475
Number of state	32	32	32	32	32	32	32	32	32

The table shows the estimates of crimes against SCs. Key explanatory variables are indices of vertical inequality among upper caste Hindus. Columns (1)-(3) show estimates using i2, columns ((4)-(6) show those using Gini and columns (7)-(9) use Theil's index. All standard errors are clustered around the state. Robust standard errors are in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 3. Baseline estimates with lagged right hand side variables

VARIABLES	(1) SC_IPC	(2) SC_woIPC	(3) SC_IPCSLL	(4) SC_IPC	(5) SC_woIPC	(6) SC_IPCSLL	(7) SC_IPC	(8) SC_woIPC	(9) SC_IPCSLL
$i2_{t-1}$	-2.4022***	-0.0341	-2.4108***						
	(0.719)	(0.131)	(0.679)						
$i2\_sc_{t-1}$	2.5012**	0.0271	2.4431**						
	(0.958)	(0.174)	(0.892)						
$Gini_{t-1}$				-6.1085**	0.0185	-6.0676***			
				(2.260)	(0.423)	(2.145)			
$GiniSC_{t-1}$				6.3610**	0.0345	6.2377**			
				(2.936)	(0.549)	(2.739)			
$Theil_{t-1}$							-11.689***	-0.4318	-12.0902***
							(3.428)	(0.644)	(3.213)
$TheilSC_{t-1}$							3.0432**	0.1080	3.1077***
							(1.114)	(0.219)	(1.041)
$i1SC_{t-1}$	-1.1239	-0.1227	-1.4563	-1.1809	-0.1795	-1.5126	-1.5505	-0.1913	-1.8921
	(1.717)	(0.280)	(1.761)	(1.351)	(0.223)	(1.381)	(1.218)	(0.226)	(1.244)
$SCpopsh_{t-1}$	-2.6927	-1.897***	-4.6665*	-2.4677	-1.868***	-4.437*	-2.2515	-1.87***	-4.2232
	(2.758)	(0.560)	(2.560)	(2.739)	(0.543)	(2.560)	(2.688)	(0.536)	(2.510)
$Ln(NSDPPc)_{t-1}$	1.1463	-0.8622	-0.2775	0.5733	-0.9993	-0.9565	1.1607	-0.9601	-0.3452
	(6.772)	(1.266)	(6.836)	(7.030)	(1.199)	(7.114)	(6.856)	(1.190)	(6.942)
$lit\_primary\_rural\_male_{t-1}$	0.4128***	-0.0094	0.4063***	0.4136***	-0.0073	0.4102***	0.431***	-0.001	0.435***
	(0.117)	(0.037)	(0.109)	(0.119)	(0.040)	(0.111)	(0.124)	(0.039)	(0.116)
$not\_literate\_rural\_male_{t-1}$	-0.2098	0.0421	-0.1790	-0.2217	0.0398	-0.1907	-0.2233	0.0391	-0.1942
	(0.200)	(0.031)	(0.197)	(0.192)	(0.030)	(0.189)	(0.193)	(0.029)	(0.191)
$UnempRate\_Male\_Rural_{t-1}$	0.0537	-0.0033	0.0525	0.0517	-0.0011	0.0531	0.0502	-0.0013	0.0514
	(0.035)	(0.004)	(0.034)	(0.033)	(0.005)	(0.034)	(0.034)	(0.005)	(0.034)
$Ruralpopsh_{t-1}$	22.219	-7.8592	10.2653	16.8403	-7.5344	5.3873	11.407	7.353	0.033
	(53.929)	(9.270)	(48.632)	(53.385)	(8.713)	(48.360)	(49.735)	(8.471)	(44.717)
Intercept	-2837.54***	-233.86	-3096.29***	-2847.42***	-237.17	-3115.15***	-2664.5***	-242.85	-2,939.39***
	(782.111)	(159.765)	(764.934)	(795.375)	(165.116)	(777.587)	(738.735)	(160.8)	(726.085)

State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	267	268	266	271	272	270	271	272	270
R-squared	0.390	0.072	0.446	0.382	0.067	0.438	0.382	0.067	0.439
Number of state	32	32	32	32	32	32	32	32	32

The table shows the estimates of crimes against SCs using lagged explanatory variables. Key explanatory variables are indices of vertical inequality among upper caste Hindus. Columns (1)-(3) show estimates using i2, columns ((4)-(6) show those using Gini and columns (7)-(9) use Theil's index. All standard errors are clustered around the state. Robust standard errors are in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 4. Estimates of crimes against SC with additional control for lagged cognizable crime rates

VARIABLES	(1) SC_IPC	(2) SC_woIPC	(3) SC_IPCSLL	(4) SC_IPC	(5) SC_woIPC	(6) SC_IPCSLL	(7) SC_IPC	(8) SC_woIPC	(9) SC_IPCSLL
$i2_{t-1}$	-2.082***	-0.079	-2.141***						
	(0.707)	(0.141)	(0.685)						
$i2\_sc_{t-1}$	2.366**	0.046	2.331**						
	(0.910)	(0.168)	(0.852)						
$Gini_{t-1}$				-4.955**	-0.1114	-5.0684**			
				(2.256)	(0.466)	(2.211)			
$GiniSC_{t-1}$				5.9036**	0.0853	5.8463**			
				(2.785)	(0.539)	(2.608)			
$Theil_{t-1}$							-10.097***	-0.6510	-10.76***
							(3.399)	(0.685)	(3.234)
$TheilSC_{t-1}$							2.7352**	0.1503	2.851***
							(1.071)	(0.219)	(1.005)
$i1SC_{t-1}$	-1.0517	-0.1330	-1.3917	-0.7845	-0.2234	-1.1662	-1.1416	-0.2470	-1.547
	(1.637)	(0.287)	(1.693)	(1.265)	(0.227)	(1.320)	(1.213)	(0.226)	(1.259)
$Ccrimert\_IPCSLL_{t-1}$	0.0033	-0.0005	0.0028	0.0034	-0.0004	0.0029	0.0031	-0.0004	0.0026
	(0.003)	(0.001)	(0.003)	(0.003)	(0.001)	(0.003)	(0.003)	(0.001)	(0.003)
$scpopsh_{t-1}$	-1.3801	-2.0841***	-3.5606	-1.1599	-2.0147***	-3.3038	-1.0422	-2.0317***	-3.2113
	(2.614)	(0.544)	(2.567)	(2.581)	(0.524)	(2.552)	(2.506)	(0.516)	(2.477)
$Ln(NSDPPc)_{t-1}$	1.7956	-0.9560	0.2787	1.2581	-1.0769	-0.3520	1.5492	-1.0138	-0.0095
	(6.488)	(1.298)	(6.638)	(6.811)	(1.234)	(6.967)	(6.674)	(1.209)	(6.819)
$lit\_primary\_rural\_male_{t-1}$	0.389***	-0.0060	0.3861***	0.384***	-0.0040	0.3846***	0.4008***	0.0033	0.410***
	(0.114)	(0.038)	(0.106)	(0.115)	(0.042)	(0.107)	(0.120)	(0.041)	(0.112)
$Not\_literate\_rural\_male_{t-1}$	-0.2132	0.0426	-0.1816	-0.2204	0.0396	-0.1893	-0.2255	0.0394	-0.1957
	(0.199)	(0.030)	(0.197)	(0.190)	(0.029)	(0.188)	(0.193)	(0.029)	(0.190)
$UnempRate\_Male\_Rural_{t-1}$	0.0600	-0.0042	0.0578	0.0577*	-0.0017	0.0583*	0.0555	-0.0020	0.0558
	(0.035)	(0.005)	(0.035)	(0.034)	(0.005)	(0.034)	(0.034)	(0.005)	(0.034)
$Ruralpopsh_{t-1}$	30.1026	-8.9911	16.9786	24.6699	-8.4158	12.2593	18.7659	-8.3653	6.2731

	(51.117)	(9.919)	(45.995)	(50.574)	(9.284)	(45.693)	(47.586)	(9.046)	(42.786)
Intercept	-2749.6***	-246.45	-3021.9***	-2752.3***	-247.88	-3032.3***	-2609.1***	-250.43	-2892.7***
	(761.99)	(160.5)	(751.98)	(773.61)	(165.9)	(763.65)	(728.93)	(161.31)	(720.1)
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	267	268	266	271	272	270	271	272	270
R-squared	0.395	0.075	0.449	0.388	0.069	0.442	0.387	0.070	0.442
No. of states	32	32	32	32	32	32	32	32	32

The table shows the estimates of crimes against SCs after controlling for overall crime rates and using all lagged explanatory variables. Key explanatory variables are indices of vertical inequality among upper caste Hindus. Columns (1)-(3) show estimates using i2, columns ((4)-(6) show those using Gini and columns (7)-(9) use Theil's index. All standard errors are clustered around the state. Robust standard errors are in in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 5. Estimates of judicial conviction rates against SC crimes

VARIABLES	(1) SC_conviction	(2) SC_conviction	(3) SC_conviction
$i2_{t-1}$	-6.2288**		
	(2.398)		
$i2\_sc_{t-1}$	3.6552*		
	(2.067)		
$Gini_{t-1}$		-20.0065**	
		(7.600)	
$GiniSC_{t-1}$		10.5515*	
		(5.533)	
$Theil_{t-1}$			-33.0865**
			(15.126)
$TheilSC_{t-1}$			7.2587**
			(3.514)
$i1SC_{t-1}$	-20.9670	-21.3344	-22.4772
	(22.037)	(22.599)	(21.352)
$scpopsh_{t-1}$	10.2774**	10.1638**	11.1166**
	(4.333)	(4.306)	(4.459)
$lnNSDPPc_{t-1}$	-3.6606	-5.0840	2.6166
	(12.081)	(11.836)	(14.477)
$lit\_primary\_rural\_male_{t-1}$	1.6937**	1.6800***	1.8080***
	(0.611)	(0.597)	(0.621)
$not\_literate\_rural\_male_{t-1}$	-1.1606*	-1.1473*	-1.0675
	(0.617)	(0.627)	(0.646)
$UnempRate\_Male\_Rural_{t-1}$	0.0085	0.0065	0.0139
	(0.095)	(0.086)	(0.086)
$Ruralpopsh_{t-1}$	36.2941	31.2264	37.2312
	(49.776)	(47.898)	(51.517)
Intercept	-1,538.9743	-1,661.9476	-937.2330
	(1,032.430)	(1,037.847)	(1,025.417)
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	204	205	205
R-squared	0.207	0.205	0.209
Number of state	27	27	27

The table shows the baseline estimates of judicial conviction rates for crimes against SCs using lagged explanatory variables. Key explanatory variables are indices of vertical inequality indices among upper caste Hindus. Columns (1)-(3) show estimates using i2, Gini and Theil's index respectively. All standard errors are clustered around the state. Robust standard errors are in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 6. Estimates of judicial conviction rates against SC crimes, controlling for overall crime and conviction rates

VARIABLES	(1) SC_conviction	(2) SC_conviction	(3) SC_conviction
$i2_{t-1}$	-6.8259**		
	(2.748)		
$i2\_sc_{t-1}$	4.0666*		
	(2.298)		
$Gini_{t-1}$		-21.8782**	
		(8.674)	
$GiniSC_{t-1}$		11.6187*	
		(6.074)	
$Theil_{t-1}$			-37.6515**
			(17.049)
$TheilSC_{t-1}$			8.2882**
			(3.958)
$i1SC_{t-1}$	-14.6107	-15.2844	-15.8002
	(22.704)	(23.088)	(21.635)
$scpopsh_{t-1}$	14.7132**	14.4167**	15.6894**
	(6.416)	(6.296)	(6.490)
$lnNSDPPc_{t-1}$	-1.2951	-2.6761	6.1259
	(10.710)	(10.579)	(13.069)
$Ccrimert\_IPCSLL_{t-1}$	-0.0036	-0.0033	-0.0039
	(0.006)	(0.005)	(0.005)
Conviction_Rate_ALL	28.3055	27.2086	29.2788
	(17.681)	(17.026)	(17.422)
$lit\_primary\_rural\_male_{t-1}$	1.6183***	1.5979***	1.7528***
	(0.544)	(0.533)	(0.578)
$not\_literate\_rural\_male_{t-1}$	-1.0742**	-1.0624*	-0.9717*
	(0.507)	(0.521)	(0.543)
$UnempRate\_Male\_Rural_{t-1}$	0.0074	0.0001	0.0059
	(0.087)	(0.076)	(0.075)
$Ruralpopsh_{t-1}$	30.2307	25.3110	31.3744
	(33.020)	(32.509)	(36.503)
Intercept	-1,211.5626	-1,345.5269	-536.2300
	(955.842)	(983.031)	(927.761)
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	204	205	205
R-squared	0.233	0.230	0.237
Number of state	27	27	27

The table shows the estimates of judicial conviction rates for crimes against SCs after controlling for overall crime rates and overall conviction rates, using all lagged explanatory variables. Key explanatory variables are indices of vertical inequality indices among upper caste Hindus. Columns (1)-(3) show estimates using i2, Gini and Theil's indices respectively. All standard errors are clustered around the state. Robust standard errors are in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 7. Estimates of police capacity

VARIABLES	(1) lnpolice_lakh	(2) lnpolice_lakh	(3) lnpolice_lakh
$i2_{t-1}$	-0.0271		
	(0.020)		
$i2\_sc_{t-1}$	0.0129		
	(0.021)		
$Gini_{t-1}$		-0.1340*	
		(0.068)	
$GiniSC_{t-1}$		0.0587	
		(0.063)	
$Theil_{t-1}$			-0.1427*
			(0.076)
$TheilSC_{t-1}$			0.0255
			(0.023)
$i1SC_{t-1}$	-0.0047	0.0112	0.0065
	(0.025)	(0.033)	(0.034)
$Ccrimert\_IPCSLL_{t-1}$	-0.0000	-0.0000	-0.0000
	(0.000)	(0.000)	(0.000)
$scpopsh_{t-1}$	0.1357***	0.1332***	0.1365***
	(0.044)	(0.044)	(0.045)
$lnNSDPPc_{t-1}$	-0.0385	-0.0683	-0.0482
	(0.130)	(0.148)	(0.150)
$lit\_primary\_rural\_male_{t-1}$	0.0002	0.0014	0.0008
	(0.002)	(0.002)	(0.002)
$not\_literate\_rural\_male_{t-1}$	0.0008	0.0011	0.0004
	(0.005)	(0.005)	(0.005)
$UnempRate\_Male\_Rural_{t-1}$	0.0009	0.0006	0.0006
	(0.001)	(0.001)	(0.001)
$Ruralpopsh_{t-1}$	-0.2361	-0.4431	-0.4800
	(0.604)	(0.719)	(0.721)
Constant	-13.6527	-17.5425	-13.0608
	(11.152)	(10.688)	(10.937)
State & Year dummies	Yes	Yes	Yes
Observations	215	218	218
R-squared	0.183	0.175	0.171
Number of state	32	32	32

The table shows the estimates of police capacity per 100,000 population after controlling for overall crime rates, using all lagged explanatory variables. Key explanatory variables are indices of vertical inequality indices among upper caste Hindus and SC population share . Columns (1)-(3) show estimates using i2, Gini and Theil's indices respectively. All standard errors are clustered around the state. Robust standard errors are in parentheses: *** p<0.01, ** p<0.05, * p<0.1.