

Persecuted Minorities and Defensive Cooperation

Contributions to Public Goods by Hindus and Muslims in Delhi Slums

Melani Cammett
Harvard University
mcammett@g.harvard.edu

Poulomi Chakrabarti
Queen's University/ Harvard University
pchakrabarti@fas.harvard.edu

David Romney
Brigham Young University
david.romney@byu.edu

April 11, 2023

Abstract

How does intergroup inequality, specifically minority experiences of persecution, affect contributions to local public goods? Based on an original survey experiment and qualitative research in slums in Delhi, we examine how Hindus and Muslims respond to social norms around promoting cooperation on community sanitation. Mainstream theories of development predict greater willingness to contribute to public goods in more homogeneous areas. In contrast to the “diversity-deficit hypothesis” however, we find that social accountability mechanisms are more effective among Muslims, a group that routinely faces discrimination and violence in India. We propose that this reflects “defensive cooperation,” or a set of coping strategies developed by minorities to navigate a hostile sociopolitical environment. Our findings point to a new mechanism that helps to enforce prosocial norms and, hence, public goods provision in multiethnic contexts.

1 Introduction

Muslims in India, a minority group that has been a longstanding target of violence in the country, have witnessed a surge of violence in the last few years. The governing Bharatiya Janata Party (BJP), which renewed its hold on power in the 2019 national elections in India, ran its campaign on a strong Hindu nationalist agenda imbued with anti-Muslim rhetoric. Within weeks of reassuming office, the BJP government removed the special autonomy of the Muslim-majority state of Jammu and Kashmir and passed a new citizenship law designed to fast-track Indian citizenship for migrants from neighboring countries of all religions except Islam, provoking massive demonstrations throughout India. Protests in Delhi escalated into one of the worst episodes of Hindu-Muslim riots in three decades, with widespread accusations that the police aided Hindu mobs ([Delhi Minorities Commission, 2020](#)). Beyond violence, the persecution of Muslims as a religious minority affects their everyday lives. This article focuses on a key aspect of their daily experiences: How does the status of Indian Muslims as a persecuted minority shape the nature of engagement in their communities, and particularly their contributions to community welfare?

This question has implications for the dynamics of local public goods provision in diverse areas. A large body of work in the social sciences explores the apparent "diversity deficit," or the finding that socioeconomic outcomes tend to be inferior in more ethnically mixed settings ([Alesina and Ferrara, 1999](#); [Banerjee et al., 2005](#)).¹ Efforts to identify the mechanisms underlying the negative association between diversity and public goods provision highlight the role of social norms in driving prosocial behavior ([Habyarimana et al., 2007](#)). Most research in this vein, however, focuses on the role of ethnic heterogeneity, while the role of inequality between groups remains largely overlooked. We draw on insights from social psychology to argue that social norms produce differential effects for majority and minority groups. Minorities – and, especially, persecuted minorities – face the additional burden of adhering to perceived expectations from the majority group, which in turn

¹In line with standard social science applications, we use the term “ethnicity” to encompass diverse identity-based cleavages, including religious or sectarian identity, and understand it to refer to “descent-based” attributes that may be malleable in the long term but structure politics and social interactions in meaningful ways ([Chandra, 2006](#)).

shapes norms of ingroup policing to protect the group image in a hostile sociopolitical environment. We propose that this underlies a tendency towards "defensive cooperation," or a set of coping strategies adopted by minority group members that makes them more willing to contribute to local public goods than their neighbors from the majority group.

In a survey experiment in slum settlements in Delhi, we assess the differential effects of social accountability on Muslim versus Hindu willingness to contribute to a common good, specifically drainage and sewage, in their neighborhoods. The informal accountability mechanisms that we test work either through psychological processes in response to intergroup competition, or through social networks to monitor and sanction individual behavior. In our experimental manipulation, we presented respondents with a hypothetical neighborhood initiative to hire a private firm to clean and maintain drains in the community. Importantly, this initiative required the support of a supermajority of the community in order to be implemented. Participants were then exposed to a favorable testimonial from a nearby resident about the hypothetical drainage scheme and a description of what, if any, social consequences there would be for those who do not contribute. We randomized aspects of the testimonial and accountability descriptions to test distinct types of informal accountability mechanisms, and measure results using an index of five measures of participants' willingness to contribute to the initiative.

The dominant diversity deficit hypothesis would predict that cooperative behavior is more likely to arise in relatively homogeneous, majority Hindu or Muslim neighborhoods. However, we find that Muslims exhibit greater willingness to contribute to the initiative in response to the treatments across the board, whereas treated Hindus are no more willing to contribute than those in the control group. These results hold after accounting for a host of relevant factors, including levels of religious diversity, the strength of social ties, gender, socioeconomic status, and other factors.

Our findings suggest a new explanation for compliance with and enforcement of social norms regarding public goods provision – notably, membership in a persecuted minority group. We propose that the higher propensity of Muslims to respond to accountability mechanisms is a manifestation of defensive cooperation, which serves as a protective coping mechanism in a hostile sociopolitical

environment. Rather than religiosity or cultural distinctiveness, exploratory evidence as well as ethnographic accounts from Indian Muslim communities indicate that enhanced ingroup policing may ensure greater contributions to the collective good among Muslims. In particular, we find that upper-caste Muslims and those who feel a greater sense of obligation to ingroup members contribute at high rates while other types of Muslims exhibit no differences from Hindu respondents.

In the next section, we discuss the dynamics of public goods provision in diverse contexts in general, present the logic of our core argument, and elaborate the hypotheses tested in the paper. Next, we introduce the context of the research, outline our data and methods, and describe the main results. A subsequent section presents exploratory analyses supporting our claim that persecuted minorities engage in defensive cooperation. In the conclusion, we summarize our key theoretical contributions and lay out a research agenda on persecuted minorities and intergroup relations.

2 Persecuted Minorities and Public Goods Provision

Studies across different contexts overwhelmingly find that ethnic diversity impedes public goods provision (Alesina and Ferrara, 1999; Banerjee et al., 2005) – a negative relationship that has been described as the "most powerful hypothesis in political economy" (Banerjee et al., 2005, p. 639). Efforts to identify the underlying mechanisms driving this relationship at the micro-level point to the role of social norms and networks in coordinating ingroup collective action and sanctioning non-contributors (Habyarimana et al., 2007). Social norms, or "standards of behavior based on widely shared beliefs about how individual group members ought to behave in a given situation" (Bernhard et al., 2006, p. 217), serve as a form of accountability mechanism: When people are held accountable for their behavior to those whose opinions they care about, they behave more in line with those individuals' expectations (Lerner and Tetlock, 2002). Social norms can be particularly effective in the provision and maintenance of public goods and common pool resources that require cooperation from community members (Habyarimana et al., 2007; Ostrom, 1990).²

²In line with the literature on diversity and development, we use the term "public goods" to refer to our outcome of interest. Strictly speaking, much of the literature actually focuses on common pool resources, or a system in which it is costly but possible to exclude some from making use of the benefits of its resources. Examples include irrigation systems, fishing grounds, or forests as well as the drainage and sanitation scheme in our study (Ostrom, 1990).

Existing research suggests that social norms can be enforced through different ways that include both beliefs or behavioral expectations from co-ethnics, and social resources to facilitate collective action. First, research in psychology suggests that ingroup members are more likely to cooperate under conditions of intergroup competition. Individuals have been shown to compensate for ingroup behavior as a way of protecting group image or status through a mechanism called the *black sheep effect* (Gino et al., 2009; Gino and Galinsky, 2012). A second way of enforcing social norms is via horizontal social networks, through actions such as public shaming and gossip among community members (Björkman and Svensson, 2009; Banerjee et al., 2019; Panagopoulos, 2010). We refer to this as *horizontal accountability* since it operates among citizens of relatively equal standing. Third, community leaders and other local elites may be instrumental in driving collective action around public goods provision at the local level. Such *vertical accountability* mechanisms can improve the supply of public goods in a variety of contexts (Baldwin, 2015; Auerbach, 2016; Thachil, 2017). Local elites generally command the respect of citizens and serve as brokers for citizen access to public and private resources.³

The diversity deficit thesis is increasingly being challenged by recent studies contending that the apparent association between heterogeneity and inferior development is a "statistical artifact" (Bharathi et al., 2018) that masks other socioeconomic or political phenomena driving low investment in public welfare and related outcomes. Scholars in particular have emphasized that inequality between groups is a better predictor of public goods outcomes than ethnic diversity per se (Baldwin and Huber, 2010; Alesina et al., 2016). Most of this work examines welfare provision at the macro-level, based on the underlying logic that diversity deficit is endogenous to a variety of historical factors related to state-building and group-based settlement (Singh and vom Hau, 2016; Wimmer, 2020). In their research on Brazil for example, Kustov and Pardelli (2018) distinguish between the effects of diversity and the share of disadvantaged groups, which are often collinear. They find that the negative effects of diversity are largely confined to homogeneous areas with marginalized

³To be sure, hierarchical social relations are often associated with clientelism and elite capture of public service delivery, resulting in unequal provision and inferior quality public goods (Bardhan and Mookherjee, 2012; Khemani, 2015).

Afro-descendants, who historically settled in more remote areas with inferior state capacity (Pardelli and Kustov, 2022). These works suggest that contemporary intergroup economic disparities may in fact reflect historical discrimination against and even the persecution of marginalized groups. Although a handful of studies have examined the effects of ascriptive discrimination on political mobilization (Oskooii, 2016, 2020; Schildkraut, 2005) and ethnic conflict (Wimmer et al., 2009), the role of minority status in public goods provision is less clear.

We expand on the concept of intergroup differences beyond the economic realm by highlighting how the dynamics of majority-minority relations may shape the provision of public goods in diverse contexts.

2.1 Persecution and Defensive Cooperation

Ethnic minorities are often subject to exclusion and even persecution in many parts of the world. For example, discrimination against minorities in employment and housing has been widely documented (Banerjee et al., 2009; Bertrand and Mullainathan, 2004; Susewind, 2017). In extreme cases, minorities are perceived as a threat and become targets of violence, sometimes with state backing, including routine victimization at the hands of law enforcement agencies (Gayer and Jaffrelot, 2012; Soss and Weaver, 2017). How does the experience of marginalization and even persecution shape contributions to public goods by members of targeted minority groups?

We build on insights from studies of minority political behavior to better understand the effects of minority status on social accountability mechanisms shaping public goods provision at the micro-level. We conceptualize minority status not just in terms of demographic weight, but as a function of historical discrimination and persecution. Muslims in contemporary India and in many Western countries, Blacks in the United States, the Roma people in Europe, and Arabs in Israel, among others, fit this description. We argue that social accountability mechanisms are likely to produce differential effects in the majority and minority group due to the nature of unequal intergroup relations. The political behavior of persecuted minorities is shaped by real and perceived threats from the majority, leading them to develop distinct forms of ingroup policing (Fearon and

Laitin, 1996). In his analysis of “everyday peace” in conflict-affected societies, for example, Mac Ginty (2014, p. 554) argues that minorities “may go out of their way to avoid giving offence and to be deliberately polite to outgroup members” in order to maintain calm by regulating behavior within the group. Minority groups have also been shown to have stronger ingroup trust and social networks (Uslaner, 2002). Individuals embedded in these networks are likely to have a greater sense of obligation to their community and develop tools that enhance the willingness and ability to monitor and sanction defectors (Habyarimana et al., 2007). Such social norms may serve as a coping mechanism against exclusion and persecution and, in turn, can facilitate cooperative behavior and elicit enhanced contributions by members of minority groups to communal public goods. We call this behavior *defensive cooperation*.

Our preregistered hypotheses largely focused on the direct effects of social accountability mechanisms, however, we find that Muslims - but not Hindus - increase their propensity to contribute to local public goods in response to such accountability primes.⁴ Existing research provides insights on how social norms may be mediated by minority status.

Members of persecuted groups may anticipate that an ingroup failure could result in negative attention from the majority (Ditlmann et al., 2017). They may hence seek to protect their group’s reputation by compensating for the underperformance of ingroup members through contributions to public goods via a mechanism akin to the *black sheep effect*. A field experiment in Germany, for example, found that minorities sanctioned fellow minorities at higher rates as compared to majority “natives” for violating the *same* social norms (Winter and Zhang, 2018). Similarly, Black Americans who identify more strongly with their community are more likely to police fellow group members who conform with negative stereotypes (Jefferson, 2018). The “politics of respectability” serves as a defense mechanism against racist stereotypes (Higginbotham, 1993, p. 187).

Discrimination itself can generate greater cohesion within minorities (Padilla, 1985; Tajfel and Turner, 1986), which can give rise to stronger ingroup social networks and trust and enhance the

⁴The pre-registered study focused on accountability treatments at different levels of localized diversity. Although we included heterogeneous effects by religious identification in our pre-analysis plan, emphasizing Muslim minority status, it was not our central hypothesis.

effectiveness of *horizontal accountability* measures (Granovetter, 1973; Lust and Rakner, 2018; Ostrom, 1990). Based on a study of Muslims in West Bengal and Hindus in Bangladesh, Gupta et al. (2018) conclude that the minority group in both contexts shows positive bias regarding ingroup trustworthiness. Social cohesion may also bolster ties between residents and leaders in minority groups, thus strengthening the effectiveness of *vertical accountability* mechanisms. A lab-in-the-field coordination game in India, for example, found that Muslim leaders improve cooperation in Muslim majority towns while Hindu leaders cannot elicit similar levels of performance from Hindu participants (Bhalotra et al., 2018).

The literature on intergroup relations exhibits some empirical support for the concept of defensive cooperation. In their meta-analysis of studies in over forty conflict-affected countries, Bauer et al. (2016) find that exposure to violence increases ingroup prosocial behavior and altruism. These effects are not driven by economic incentives or changes in beliefs about the outgroup; rather, external threats influence ingroup social norms of cooperation. Non-violent threats have also been shown to generate ingroup cooperative behavior. Muslims in the US and UK who experience social exclusion, for example, are more likely to be involved in civic activities with fellow low-status ingroup members (Oskooii, 2016, 2020). Ethnographic accounts of Muslim politics in India further suggest that such cooperation is largely driven by elites in the community who feel a sense of obligation to co-religionists (Williams, 2015; Pahwa, 2023).

2.2 Hypotheses

Our study assesses the willingness of community members to contribute to a hypothetical collective scheme to improve drainage systems in slum areas, contingent on different accountability mechanisms.

Based on existing research and our theory, we present two distinct overarching hypotheses. The first relates to the conventional diversity deficit argument and the second, in line with the logic of defensive cooperation, holds that social accountability has distinct effects on Muslim versus Hindu respondents:

- *Hypothesis 1 - Social Accountability*: Respondents exposed to accountability treatments will contribute more to the collective drainage scheme.
- *Hypothesis 1a - Diversity * Social Accountability*: Respondents in homogeneous areas will have higher effect estimates.
- *Hypothesis 2 - Persecuted minority * Social Accountability*: Muslims will contribute more to the collective drainage scheme than Hindus in response to social accountability mechanisms.

3 Context: Hindu-Muslim Relations in India

We focus on the city of Delhi, India, which has a long and, at times, fraught history of Hindu-Muslim relations. Estimated at 172 million people, India's Muslim population is the third largest in the world, making India the largest Muslim-minority country. Hindu-Muslim relations in independent India have been strongly shaped by the dynamics of 20th century religious nationalism in the subcontinent. Ideological differences between Muslim and secular nationalists led to the partition of British India and the creation of Pakistan in 1947, displacing millions of people. As the largest religious minority and with the formation of Pakistan as a Muslim homeland, Muslims are the main ideological adversary of Hindu nationalism, the political ideology of the ruling BJP. At its core, Hindu nationalism is based on the belief that Hindus should have cultural and political primacy in India (Varshney, 2003).

While the current political vitriol against Muslims is unprecedented in recent history, Muslims have long been the target of discrimination and violence, generating insecurity, displacement, segregation, and loss of property and life (Varshney, 2003). More than ten thousand people are estimated to have been killed in Hindu-Muslim riots since independence (Wilkinson, 2004), while Muslim loyalty to India is continuously questioned by elements of the state, media, and the political class (Gayer and Jaffrelot, 2012). The precarious position of Muslims is also reflected in relative socioeconomic conditions. On average, Muslims are poorer, less educated, and less connected to the formal sector (Government of India, 2006). Moreover, intergenerational mobility for Muslims

has declined over time, while other marginalized groups have experienced notable gains (Asher et al., 2017), in part because, unlike other minorities, Muslims do not benefit from affirmative action policies. They are underrepresented in elected bodies and the bureaucracy, and their marginalization in the police and judiciary, in particular, has made them vulnerable to anti-terrorist measures that disproportionately target innocent Muslim men (Gayer and Jaffrelot, 2012).

Our research site, the capital city of Delhi, is one of the major historical centers of Islamic culture and politics in South Asia. Though the city lost about two-thirds of its Muslim population during the partition (Gayer, 2012), Muslims still comprise about 13% of Delhi, roughly mirroring that of India as a whole. Delhi features one of the highest levels of Muslim segregation in India, an indication of relatively weak intergroup social ties (Susewind, 2017). Muslim underrepresentation in the bureaucracy and law enforcement agencies is particularly acute in the city: Only 7 of 124 judges appointed to the Delhi High Court since 1966 are Muslim and, at 2.3%, Muslim representation in the local police force is among the lowest in India. Muslims in Delhi are also poorer and less educated than the overall population (Gayer, 2012), and therefore more likely to reside in slums, which house about half of Delhi's 18 million residents and are the sites of this study.⁵

Delhi's slums, like many poverty-ridden areas in the world, are characterized by inferior public goods provision (Banerjee et al., 2012; GNCTD, 2006; Heller et al., 2015). According to a 2012 survey of over 3,000 slum-dwelling households in Delhi, for example, only 14% have a private tap or toilet. About 60% of households had no specific outlet for drainage from their home, a figure that is even higher for the poorest households (72%), while 90% of those with a drain say that it emits bad smells or overflows (Banerjee et al., 2012).

We focus on drainage and sewage for several reasons. First, they are among the most strained public services: Storm water drainage is at less than 50% capacity in Indian cities (Ministry of Urban Development, 2012). In Delhi in particular, drainage is one of the most contentious public

⁵Estimates of Delhi's slum population vary by the criteria used to define a slum. While government reports in 2008-2009 estimated this population at 580,000 households or about 10% of the city (Banerjee et al., 2012), the Delhi Human Development Report uses a broader definition of slums that includes 45% of the population (GNCTD, 2006). A recent study argues that more than 60% of Delhi's population lives in informal settlements with inadequate public service provision (Heller et al., 2015).

goods, with residents often negotiating with municipal workers or paying collectively for a private organization to regularly clean out drain gullies (Heller et al., 2015) – an arrangement that informed the design of this research. Further, according to some surveys, access to water and sanitation is the greatest source of discontent among slum dwellers (Banerjee et al., 2012). Most respondents in our study rated the quality of drainage in their neighborhood poorly. Drainage is therefore contextually relevant and important.

Second, from a theoretical perspective, storm water drainage is a case of a (near) pure public good – or at least a common pool resource – that cannot be addressed by individual, uncoordinated solutions. Heavy rainfall and the accumulation of garbage cause drains to clog and in turn affect the well-being of the whole community, particularly because drains are interconnected and pass through entire slum neighborhoods, including in small trenches immediately adjacent to private homes. Thus, by design, drainage requires cooperation to resolve blockages. Residents may thoroughly clear the portion of the drain crossing underneath the threshold of their homes, but if they do not coordinate with upstream neighbors, their hard work will be for naught. For precisely this reason, our fieldwork revealed that residents sometimes band together to clean their drains on their own initiative or engage a private provider to do so (see Figure 1; also see Appendix Section 1).

Further, although the municipal government is supposed to maintain drainage in slum settlements, in practice the municipality is often either incapable or unwilling to carry out its official duties. During fieldwork in multiple sites, we witnessed piles of trash that municipal workers had extracted and placed alongside drains in order to dry it out before collection and removal at the periphery of settlements (again, see Figure 1). However, interior drains in settlements remained clogged with trash and organic waste and local residents claimed that municipal workers rarely if ever venture inside the slums to attend to public infrastructure needs. Because drainage is effectively managed by the community rather than a state-provided public good, social accountability mechanisms play an especially critical role in cooperation around its maintenance (Habyarimana et al., 2007; Ostrom, 1990). The context of drainage in Delhi slum settlements is therefore particularly well suited to study the effects of social accountability norms around cooperation and the ways in which



(a) Internal drains run next to houses, often close to sources of water supply, thus contaminating drinking water.



(b) Garbage and plastic bags clog drains. Blockage in one section can lead to overflows throughout the settlement.



(c) Even after mild rainfall, flooding due to blockages is not uncommon.

Figure 1: Condition of Drainage in selected Sites

intergroup relations condition contributions to the collective good.

4 Data and Methods

To explore our questions, we use a large-scale ($n = 3,843$) survey experiment informed by extensive qualitative field research. In this section, we describe the site selection and survey administration processes, the survey itself, and sample characteristics.

4.1 Site Selection and Survey Administration

Before designing and administering the survey, a team of field researchers from a research institute in Delhi, the Centre for Policy Research (CPR), aided us in gathering qualitative data on 20 communities or *bastis* in nine slum settlements across Delhi.⁶ The sites were selected on the basis of their ethnic composition (see Appendix Section 2). This preliminary fieldwork, conducted for over three months, generated twenty-six detailed reports that covered the demographic characteristics,

⁶The larger sites are administratively categorized as “informal settlements” by government agencies. *Bastis* refer to smaller organic communities within the settlements (see Appendix Section 1). Our survey confirms that residents considered residents in their *Basti* as their neighbors (see Appendix Section 7.1.7).

quality of infrastructure and public services, political and social life, and local leadership in the selected communities (see Appendix Section 1). We learned that slum residents favor low-cost, private options over free, public services offered by government agencies and non-governmental organizations (NGOs).⁷ Hence, our survey centers on interest in a hypothetical private drain cleaning company. The fieldwork allowed us to select five sites that varied in terms of religious composition but were largely similar to each other in other respects, such as socioeconomic characteristics, age of settlements, and condition of public services. We piloted the instrument in three *bastis* to improve the clarity and relevance of the survey questions.

A second firm, Across Research and Communications (ARC), implemented the survey. Together with an administrator from the survey firm and representatives from CPR, we trained a team of 25 enumerators on the instrument, recruitment strategy, and location characteristics (see Appendix Section 3). Because the survey focused on household decisions, enumerators were instructed to interview the head of household, who is typically male because of prevailing social norms. Overall, the response rates varied between approximately 30 and 80 percent across seventeen sub-settlements/*bastis*.

4.2 Experimental Treatments

Participants answered a battery of questions before viewing the experimental manipulations. Pre-treatment questions assessed a variety of topics, including basic demographic characteristics, location of residence, religion and religiosity,⁸ networks with political and voluntary institutions, strength of social ties, political participation, and the state of the drainage system in the neighborhood. Respondents were randomly assigned and then exposed to one of six experimental manipulations. All began with an offer by a drain cleaning company. To avoid deception, the offer was described as hypothetical throughout the manipulation.⁹ Respondents were told that the company was interested

⁷After a new municipal policy eliminated fees at community toilet complexes (CTCs) in one of the slums, residents complained that the cleanliness of the toilets declined. Further, residents viewed NGOs as money-making schemes for well-connected locals aiming to extract funds from the government and foreign donors rather than to promote community welfare.

⁸At this point, respondents who were neither Muslim nor Hindu were dropped.

⁹For a discussion of this and other ethical issues we considered in our design, see Section 4.5 of the Appendix.

in gauging interest among residents of the participant's sub-settlement (specified by name). They were told that there would be a monthly subscription fee of Rs. 150 per household (about US \$0.70);¹⁰ and that two-thirds of local residents had to sign up for the service before it could be implemented.

After this, the treatment texts diverged. In the control, the enumerator introduced a hypothetical testimony from someone whose neighborhood was offered the drain cleaning service. The testimony-giver praised the service but also noted that it was *not* implemented in his neighborhood (the “underperforming” neighborhood) because some residents (whom he named) did not want to contribute. He then noted that the program was implemented in an adjoining neighborhood where enough residents (again, a few were named) contributed. In the control, the names mentioned by the testimony-giver were half Muslim and half Hindu, and participants were told that their contribution or lack thereof would be private.

Two dimensions of the control text were altered for the treatments. The first was an accountability dimension, aimed at encouraging participation based on horizontal or vertical accountability. For horizontal accountability, participants were told that neighbors would be made aware of individuals who did not contribute. A list of six names was read as an example of people who were singled out in a different neighborhood. For vertical accountability, participants were told that a local leader (*Pradhan*)¹¹ would identify non-contributors. The second dimension tapped into the “black sheep” effect, which was primed by altering the testimony based on the religious identity of the participant. For Hindus, the names of the “underperforming” community and residents were obviously Hindu and those of the successful community were obviously Muslim. In two treatment conditions combining accountability mechanisms and the black sheep prime, similar adjustments were made to the list of residents singled out as non-contributors.¹²

After the manipulation, we included a check on participants' knowledge of the drain cleaning initiative to gauge whether participants understood the informational aspect of the intervention. Five

¹⁰A pilot study indicated that Rs. 150 was a non-negligible but reasonable amount for residents to cover.

¹¹A *pradhan* is an informal slum leader who acts as an intermediary between the formal government and the urban poor.

¹²Appendix Section 4.2 provides the full treatment text.

outcome questions immediately followed the treatment, each measured on a 1–4 scale, with higher levels indicating more positive responses:

- *Benefit*—Would this program be beneficial for your neighborhood?
- *Interest*—Given this scenario, how interested would you be, overall, in the program?
- *Fee*—How likely would you be to pay the monthly fee?
- *Contract*—Would you be willing to sign a six-month contract for this service?
- *Influence*—How likely would you be to try to get your neighbors to sign up for the program?

Finally, the survey ended with a battery of questions unlikely to be affected by, or unnecessary for, the experimental manipulation. These included questions about education, socioeconomic status, and political leaning and knowledge.

4.3 Sample Characteristics

The sample includes 3,843 participants across the six treatments, from a minimum of 615 to a maximum of 668 (see Table 1). Overall, as illustrated in Table 2, participants in our sample demonstrated a high need for drain cleaning and expressed strong interest in the proposed service. On a scale of 1 to 5, participants rated the quality of drainage in their neighborhoods at a dismal 1.82. Additionally, on average, 23% of participants indicated that they had a problem with drainage in the last year that required the help of someone other than themselves. In the control condition, participants' interest in the program registered at 2.95 on a 1 to 4 scale, indicating that, on average, participants were very interested in the program. Table 2 provides an overview of the demographic characteristics and other basic information of the sample.

Hindus and Muslims in our sample are similar to each other for most of the characteristics we measure, though there are a few small differences. Muslims rated the quality of drains in their communities slightly higher, at 1.87 compared to 1.81 for Hindus, while a larger proportion of Muslims reported having an issue with their drains that necessitated others' help, with 32% of

Table 1: Treatment Group Sizes

Treatment	N
Control	667
Horizontal Accountability	635
Vertical Accountability	649
Black Sheep	615
Horizontal Accountability + Black Sheep	630
Vertical Accountability + Black Sheep	647

Muslims saying this occurred in the last two years compared to 20% of Hindus. Table 5 presents models with controls for these slight differences between the two groups.

5 Results

How did the treatments affect participants’ interest in the drainage program? Did neighborhood diversity and religious identity affect the outcomes? We begin by examining the overall effects of social accountability mechanisms (Hypothesis 1). Respondent ratings on the five outcomes – benefit, interest, willingness to pay a fee, enter a contract, and influence neighbors to sign up – are combined to generate a single outcome measure called *Index of Favorability toward Drainage Program*.¹³ Table 4 shows that the effect size for the combined treatment is small and statistically insignificant. Analyses of the separate treatments, presented in Appendix Section 6.1, generate comparable results.

Next, we turn to treatment effects by neighborhood diversity (Hypothesis 1a). We construct a fine-grained and highly accurate measure of diversity through data on the geolocation of survey enumerators. GPS coordinates were automatically recorded through Qualtrics in the tablets and manually entered by looking up the location in a navigation application. We estimate the proportion of Hindus and Muslims within a 100-meter radius (equivalent of a few streets) of each respondent based on the geocoordinates of other, nearby survey participants. We then use this distribution to compute the level of diversity around each individual, using the [Montalvo and Reynal-Querol](#)

¹³This decreases concerns about multiple testing and is justifiable because of similarity across outcomes and high internal consistency ($\alpha = 0.89$).

Table 2: Sample Demographic Characteristics, Overall and by Religious Identification

Variable	Overall	Hindus	Muslims
Demographics			
Gender (1 = Female, 0 = Male)	0.20	0.19	0.21
Married (1 = Married, 0 = Other)	0.91	0.90	0.92
Age	38.43	37.97	39.91
Home Ownership (1 = Own Residence, 0 = Other)	0.82	0.81	0.84
People Per Room in Residence	3.36	3.27	3.64
Education Level (1-10 Scale)	3.90	4.22	2.90
Employment Status (1 = Employed)	0.84	0.84	0.82
% Mid-Tier Assets (Bike, Cooler, Fridge)	0.48	0.48	0.48
% High-Tier Assets (Vehicle, Computer, AC)	0.18	0.16	0.24
Financial Hardship Index (1 = More Hardship)	0.25	0.23	0.32
Religiosity/Social Ties			
Private Religious Practice (1 = Never, 5 = Daily)	4.25	4.26	4.20
Public Religious Practice (4 Items, 1–5 Scale)	3.77	3.67	4.08
Religious Ties Index (2 Items, 1–3 Scale)	2.18	2.17	2.23
General Social Ties (0-1 Scale)	0.89	0.88	0.91
Helpfulness Index (1-4 Scale)	3.11	3.11	3.12
Forgo Wages Index, Family (1-3 Scale)	2.79	2.81	2.74
Forgo Wages Index, Others (1-3 Scale)	2.25	2.25	2.23
Political Factors			
General Political Trust Index (6 Items, 1–4 Scale)	2.18	2.26	1.94
Local Political Trust Index (3 Items, 1-4 Scale)	1.92	1.95	1.79
Network in State Institutions (7 Items, 1 = Any)	0.15	0.14	0.17
Political Participation, 2015 (6 Items)	0.16	0.16	0.16
Involvement in Local Organizations (1 = Any)	0.06	0.06	0.08
Caste			
Caste Level (0 = Lower, 1 = Upper)	0.32	0.23	0.61
Diversity			
Hindu-Muslim Diversity within 100 Meters (0–1 Index)	0.40	0.34	0.59
Neighborhood and Enumerator			
Years Residing in Settlement	20.63	19.79	23.33
Consider Self Citizen of Delhi (1 = Yes)	0.93	0.93	0.96
Quality of Drainage (1-5)	1.82	1.81	1.87
Drainage Problem Requiring Help (1 = Yes)	0.23	0.20	0.32
% Hindu Enumerator	0.96	0.96	0.97

(2005) polarization index.¹⁴ Table 4 shows that the interactive effects of diversity is statistically insignificant.¹⁵ In contrast to the existing literature (Habyarimana et al., 2007; Miguel and Gugerty, 2005), we do not find evidence that social accountability norms affect cooperation nor do we find support for the diversity deficit hypothesis.

Finally, we examine treatment effects by the religious identification of the respondent (Hypothesis 2). Table 3 shows that the effect size for Hindus is -0.02 and insignificant. For Muslim respondents, the effect of the treatments is 0.18 and statistically significant ($p = <0.01$).¹⁶ Constituting approximately 6.5% of the 1 to 4 scale used for the outcome index, this effect size is substantively significant and similar in magnitude to other important predictors of favorability toward the drainage program. For instance, one question in our survey asks participants to rate the quality of their drainage on a 1 (poor) to 5 (great) scale. In a regression of the outcome index on this drainage quality question, a move from the 25% to 75% quantile response (i.e., from a 1 to a 3 on the scale) corresponds to a negative change in the favorability index of similar magnitude to the treatment effect for Muslims.

Figure 2 presents the treatment effects by the five outcomes of interest for Hindus (solid line) and Muslims (dashed line). Three main patterns stand out. First, the potential burden associated with each outcome determines patterns across the panels; moving from questions that require little effort (e.g., “Would this program benefit you?”) to those that require greater commitment (e.g., “Would you be willing to sign a 6-month contract?”) corresponds with a 20% decrease. Second, Muslims have a lower baseline response to our outcome measures in the control group. The treatments have the effect of bringing Muslims up to or slightly surpassing the responses of Hindus.¹⁷ As we explore in Section 7.3, however, this baseline difference, is driven by upper-caste Hindus and

¹⁴ $RQ = 4\pi_1\pi_2$, where π_1 and π_2 are the proportion of the respective groups. The index ranges from 0–1; 1 indicating complete polarity (half of each group), and 0 indicating complete homogeneity. See Appendix Section 5.7.

¹⁵Additionally, the effect is in the opposite direction of what was predicted. This may arise because our diversity measure is higher in locations with more Muslims since they are a minority. Our results remain consistent when we consider alternate radii (50 and 150 meters); see Appendix Section 7.2.1.

¹⁶When considering p-value adjustment for the three hypothesis tests in our paper, a Benjamini-Hochberg correction produces a p-value of 0.02.

¹⁷Two factors mitigate against ceiling effects in this context: The baseline gap between Hindus and Muslims even for outcomes where both group averages are far from the “ceiling” of the measure, and a Tobit model (see Appendix Section 7.1.5) accounting for floor/ceiling effects estimates a larger Hindu-Muslim difference than we report here.

Table 3: Regression of Favorability toward Drainage Program, by Religion

	Dependent Variable: Index of Favorability
Constant	2.76*** (0.02)
Treatments (Combined)	−0.02 (0.03)
Muslim	−0.13*** (0.04)
Treatments (Combined) x Muslim	0.18*** (0.06)
Observations	3,832
R ²	0.003
Adjusted R ²	0.002
Residual Std. Error	1.16 (df = 3828)
F Statistic	3.90*** (df = 3; 3828)

Muslims. Lower-caste Hindus and Muslims report comparable baseline outcomes. Third, and most importantly, Muslim participants respond to the treatments positively across the board, while Hindu participants show little to no change in the outcomes.¹⁸

5.1 Robustness Checks

Our experiment passes standard checks of robustness. Because of the use of multiple enumerators and randomization in the field, there are minor imbalances in the size of each treatment group (see Table 1), but an omnibus balance test (Hansen and Bowers, 2008) indicates no significant imbalances, whether the treatments are examined separately or combined (see Appendix Section 7.1.1). On average, each treatment was administered in less than 30 seconds for each condition, with differences of only 1 or 2 seconds between them (see Appendix Section 7.1.3). Further, the amount of time it took to administer the survey in the control and treatment conditions was similar. The vast majority of participants passed our manipulation checks – 89% correctly noted the proportion of their

¹⁸Appendix Section 6.2 presents the treatments and outcomes separately.

Table 4: Regression of Favorability toward Drainage Program, by Diversity

	Dependent Variable: Index of Favorability	
	(1)	(2)
Constant	2.73*** (0.02)	2.71*** (0.03)
Treatments (Combined)	0.03 (0.03)	−0.02 (0.04)
Diversity		0.04 (0.06)
Treatments (Combined) x Diversity		0.10 (0.09)
Observations	3,832	3,810
R ²	0.0003	0.002
Adjusted R ²	0.0000	0.001
Residual Std. Error	1.17 (df = 3830)	1.17 (df = 3806)
F Statistic	1.11 (df = 1; 3830)	2.19* (df = 3; 3806)

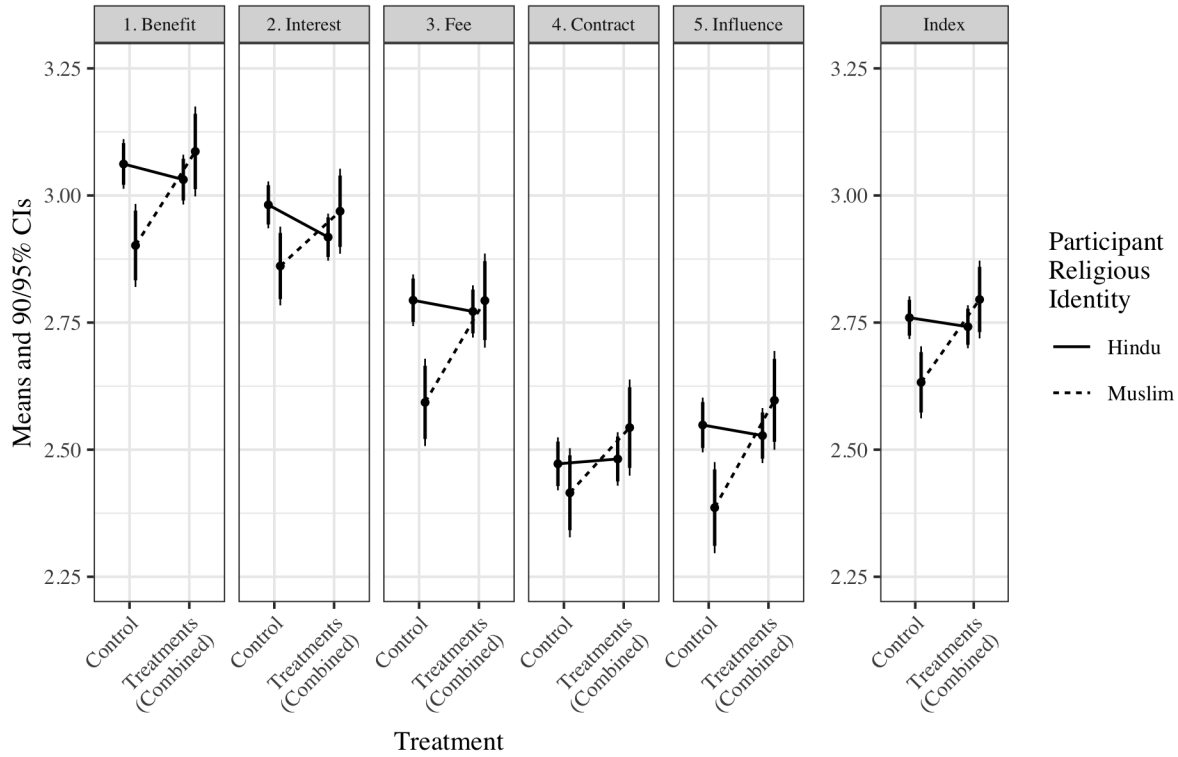


Figure 2: Effect of Combined Treatments on Favorability toward Drainage Program, by Religion

neighbors who would need to pay the fee, and 95% correctly identified Rs.150 as the enrollment fee. Participants who incorrectly answered these questions were told the correct answers afterwards and were not excluded based on their responses to these checks. The results do not change if those who did not pass are dropped from the analysis. Lastly, only two participants, or less than 0.1% of the sample, correctly identified the purpose of the experiment in a final question probing the perceived reason for the study. The results remain the same without these participants (see Appendix Section 7.1.2). Since the religion of the enumerator can potentially influence responses, we account for enumerator effects in Section 7.1.6 of the Appendix.

A second set of robustness checks centers on the heterogeneous effects we probe. Religious identity is, of course, not randomly assigned, and other factors correlated with religious identity could account for the findings. Scholars of urban politics further emphasize the salience of regional identity in collective action in Indian slums, especially among migrant workers (Auerbach and Thachil, 2018; Jha et al., 2007). We therefore conduct analyses to account for potential alternative

explanations, including demographic controls, levels of religiosity and social ties, political factors, diversity based on caste and religion, and measures of citizenship.¹⁹ Our findings hold in each of these models, as seen in Table 5 (see Appendix Section 6.3 for the full model).

Finally, we examine the effects of diversity in greater depth Section 7.2 of the Appendix. In addition to testing the interactive effects of alternative measures of diversity, we also explore how the structure of diversity may affect our findings. Specifically, we consider two scenarios. First, we consider *egoist behavior*, or the likelihood that individuals contribute more to public goods if they primarily live among ingroup members, thereby channelling benefits largely to coethnics (Habyarimana et al., 2007). Second, we explore whether a *localized minority effect*, which implies that minorities are more likely to contribute to the collective good when they live in majority-dominated neighborhoods, where concerns of safety and reputational damage are especially salient. Accordingly, we examine the treatment effects for Muslims in majority-Hindu and majority-Muslim neighborhoods in Appendix Section 7.2.2. The estimates in these neighborhoods are even stronger than the overall effects. These hypotheses were not pre-registered and it is difficult to draw strong conclusions from the analyses given the small n-sizes, however, the results offer suggestive evidence in support of the logic of defensive cooperation among minorities.

6 Explaining Minority Cooperation

Why are Muslims more willing to cooperate than Hindus? Though surprising from the perspective of the diversity deficit thesis, the asymmetry in majority-minority attitudes finds resonance in the literature on Muslim politics in India. Gaikwad and Nellis (2017) find that, unlike Hindus, Muslims in Mumbai favor in-migration by coethnics despite economic considerations. They attribute this difference to a need for security through “safety in numbers” – migration allows Muslims to boost their demographic and electoral weight. Chhibber et al. (2018) use a similar logic to explain Muslim voter’s preference for co-religionists. Scholars of ethnic violence, particularly anthropologists, have argued that the reproduction of “everyday peace” in India is contingent on the acceptance and

¹⁹These variables and their descriptive statistics are outlined in Table 2.

Table 5: Models with Controls

	Dependent Variable: Index of Favorability						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant	2.76*** (0.02)	2.50*** (0.09)	0.82*** (0.15)	1.09*** (0.16)	1.10*** (0.16)	1.01*** (0.16)	0.88*** (0.18)
Treatments	-0.02 (0.03)	-0.01 (0.03)	-0.0004 (0.03)	-0.002 (0.03)	-0.0003 (0.03)	-0.001 (0.03)	-0.001 (0.03)
Muslim	-0.13*** (0.04)	-0.07 (0.04)	-0.06 (0.04)	-0.08* (0.04)	-0.07 (0.05)	-0.12** (0.05)	-0.09** (0.05)
Treatments x Muslim	0.18*** (0.06)	0.16*** (0.06)	0.15*** (0.06)	0.17*** (0.06)	0.17*** (0.06)	0.16*** (0.06)	0.16*** (0.06)
Demographic Controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Religiosity/Social Ties	No	No	Yes	Yes	Yes	Yes	Yes
Political Factors	No	No	No	Yes	Yes	Yes	Yes
Caste	No	No	No	No	Yes	Yes	Yes
Diversity	No	No	No	No	No	Yes	Yes
Neighborhood, Enum.	No	No	No	No	No	No	Yes
Observations	3,832	3,817	3,777	3,650	3,608	3,586	3,577
R ²	0.003	0.04	0.09	0.08	0.08	0.09	0.12
Adjusted R ²	0.002	0.03	0.09	0.08	0.08	0.09	0.11

maintenance of unequal status between Hindus and Muslims (Das, 2006; Das et al., 2001; Mehta and Chatterji, 2001; Heitmeyer, 2009; Williams, 2015). The responsibility of preserving peace largely falls on the shoulders of Muslims, producing what Das (2006) argues is an “ecology of fear” among Muslims. Jeffrey et al. (2008) conclude that the moderation of Islamic identity among young Muslim men in rural Uttar Pradesh is a strategy to avoid negative feedback.

Self-policing by Muslims extends to collective action around public goods provision. An ethnographic study of communal peace in the North Indian city of Varanasi illustrates elements of defensive cooperation (Williams, 2015). In her research, Williams observed that Muslims – unlike Hindus – did not respond to inferior welfare provision through public protests because they feared attracting negative attention, which could potentially worsen social discrimination and religious tensions. Instead, Muslim elites established autonomous welfare institutions to improve the living conditions of Muslim residents as well as poorer Hindus in the community as a means of “defensive agency” to maintain peace. She argues that the behavior of these elites was motivated by a “sense of responsibility that, as successful Muslim businessmen, they should contribute to the social welfare of less fortunate sections of their community” (Williams, 2015, p. 101). Similarly, in recent research on Muslim civil society leaders, Pahwa (2023) argues that disillusionment with the political system, especially in recent years, compelled Muslim elites to direct their efforts towards service provision for less privileged community members.

We observe similar patterns in our data. Though Hindus and Muslims have comparable levels of political participation and personal ties to government officials, Muslims exhibit lower levels of trust in political institutions (see Table 2). Consistent with national trends (Centre for Regional Political Economy, 2019), trust in the police, political parties, and the Prime Minister is especially low among Muslims in our sample.²⁰ Overall, Muslims also rated *pradhans* as less effective compared to their Hindu counterparts, but our qualitative data shows that Muslim leaders were extremely influential and led most collective decision-making initiatives in some neighborhoods.²¹ In a

²⁰ Muslim trust in the Prime Minister is 0.86 points lower than Hindus, almost a third of our scale. The police and political parties have a trust gap of 0.44 and 0.31 respectively (see Appendix Section 7.3.1)

²¹ *Pradhans* have been shown to be important actors in facilitating collective action in Indian slums (Auerbach, 2016; Chidambaram, 2020; Jha et al., 2007), but they appear to be weak in many of our sites, especially among Muslims.

predominantly Muslim slum, for example, we found that local leaders organized “peace committees” to mobilize residents in the possible event of communal riots. The same elites also ran community organizations called *Basti Vikas Kendra* (development centers) that provide public services like education, childcare, and healthcare to residents.²² In contrast, such community-led welfare schemes were rare in Hindu areas.

While our research design does not allow us to test potential mechanisms definitively, we propose that our results are driven by the dynamics of defensive cooperation and find suggestive evidence to support this interpretation. Upper-caste Muslims and Muslims with strong ties to coreligionists are more responsive to treatments prompting cooperative behavior. We suggest that prosocial behavior by this subgroup is motivated by a sense of responsibility to the community, either out of paternalism or because their interests are vested in the group. They are hence more likely to care about the ingroup image and act to defend it through robust norms around cooperative behavior, which in turn may drive the inclination to contribute to local public goods. The attitudes of this subset of Muslims also account for the difference in baseline outcomes between Hindus and Muslims. In the absence of a similar history of prejudice, the majority Hindus do not respond to the primes in a similar matter.

To empirically evaluate this mechanism, we rely on questions on respondent’s caste and religious ties. Although the caste system is rooted in Hindu society, Muslims in South Asia are also stratified by caste (Ahmad, 1966). We measure caste by manually coding an open-ended question on respondent’s caste. Over 800 unique answers were recorded by enumerators. We classify them as upper or lower using the caste code protocol developed by the National Election Studies (NES) at the Center for the Study of Developing Societies (CSDS) (see Appendix Section 5.6). The variable *religious ties* is measured by combining questions on perceived obligations to ingroup members and workers in houses of worship ($\alpha = 0.88$).²³

This difference may be driven by low response rates in questions related to *pradhans*, as we discuss in Appendix Section 7.3.1

²²Field reports from *Basti 2* in Settlement C, March-May, 2018.

²³For each, we use responses to the question: “How obligated are you to help a member of your religion/local religious worker, even if it costs you a day’s wages?”

Figure 3 presents the results of our analysis (also see Table 22 in Appendix Section 7.3.2). The first panel estimates our main model for upper and lower caste respondents; the second shows outcomes for respondents with low and high values of religious ties by dividing the sample by the median value. Each point estimate represents the interaction coefficient of our main model, e.g. “Treatments (Combined) x Muslim” in Table 3. This helps to isolate which subgroup is driving the difference in effects between Hindus and Muslims. If the interaction effect shifts based on levels of a variable such as ingroup religious ties (i.e., those with high religious ties but not those with low ties exhibit greater willingness to contribute), then this bolsters the claim that Muslims with strong religious ties drive the observed effects.

The results indicate that these factors are at play. For lower-caste Muslims, the interaction effect is -0.04. For upper-castes, it is 0.39 – almost three times the size of the interaction effect in our main model. The interaction effect for religious ties is twice as much. This difference is not attributable to levels of social connectedness in the two communities. The density of general social ties is comparable in Hindus and Muslims, as indicated in Table 2. The results in Figure 3 remain robust across different treatments and are particularly strong for upper-caste Muslims (see Figures 6 and 7 in Appendix Section 7.3.2). No similar change in effect exists for Hindus based on their levels of religious social ties or caste.

Interestingly, upper-caste Muslims and those with higher religious ties exhibit higher willingness to cooperate even in the absence of experimental manipulations (i.e., in the control group). The baseline outcome for Muslims with strong religious social ties, is 2.83, which is higher than the Hindu baseline of 2.73. The results are even more stark for the highest quartile of this subgroup (i.e., Muslims with very strong social ties), with baseline and treatment outcomes of 2.92 and 3.18 respectively (see Table 23 in Appendix Section 7.3.2). Further, the baseline values for Muslims systematically increase by level of religious ties, and upper-caste Muslims with strong ingroup bonds react most strongly to the treatments (see Table 24 in Appendix Section 7.3.2).

These analyses are exploratory and do not test a priori hypotheses. More research is needed to understand how within-group heterogeneity within minority groups mediates social relations

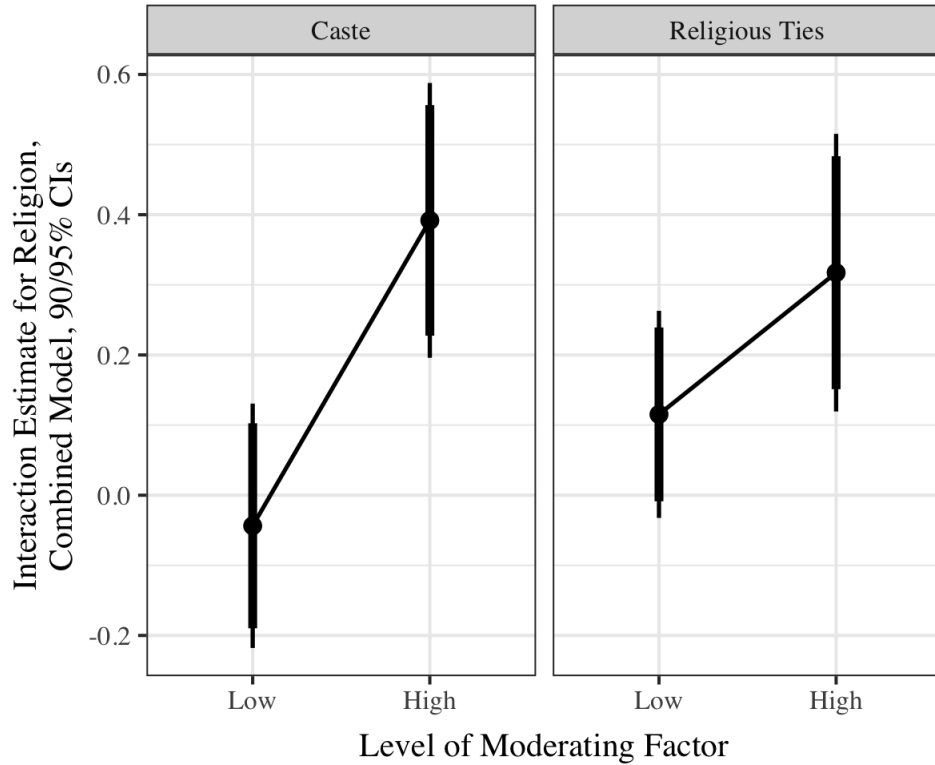


Figure 3: Estimates of Main Analysis Interaction Coefficient, by Religiosity Variables and Caste.

and collective action, but our results potentially provide important insights on the role of caste in Muslim communities. The baseline outcome for lower-caste Hindus and Muslims is similar, at 2.73 and 2.78, respectively, and both of these subgroups do not respond to the treatments (see Table 25 in Appendix Section 7.3.2). The overall findings are driven by upper-caste members. The effects for upper-caste Hindus is negative, though not statistically significant, and the effects for upper-caste Muslims is strongly positive and significant (see Table 22 in Appendix Section 7.3.2). These results are particularly interesting from the perspective of the black sheep hypotheses, which is embedded in three of the five treatments in the experiment. Existing theories predict that ingroup members can either rationalize the bad behavior of coethnics, or compensate for them out of concern for reputational damage to the community (Gino and Galinsky, 2012). When upper-caste Hindus are primed to think about non-cooperation by co-religionists, they react by opting not to participate in the program, while Muslim upper-castes compensate for them. Our findings point to the role of communal elites in the persecuted minority as central to ingroup policing and safeguarding

communal security, as proposed by Fearon and Laitin (1996).

6.1 Alternative Explanations

Could other differences between Hindus and Muslims predict their relative willingness to contribute to the collective good? Caste-based norms and rigid social hierarchies have been linked to inferior service delivery outcomes, including poor sanitation, among Hindus (Banerjee et al., 2005; Geruso and Spears, 2018; Hoff et al., 2011). Or perhaps our results reflect stronger norms of altruism among Indian Muslims? How can we be sure that our findings reflect defensive cooperation, as we argue, rather than other behaviors associated with Muslims as a cultural group? In this section, we address an array of potential alternative explanations for our findings.

We begin by examining three attributes of Muslim culture in the Indian context that may be relevant for cooperation around drainage provision. First, religious practices of charitable giving may make Muslims more likely to contribute to public goods. *Zakat*, or charitable donations, is one of the five pillars of Islam and observant Muslims in South Asia carry out this religious obligation. According to a study conducted in 2000, *Zakat* amounted to \$11.5 million (867 million rupees) in Indian towns and cities (Gayer and Jaffrelot, 2012) and was often directed to support community institutions, such as mosques and religious schools or (*madrasas*). Our data indicate that Muslims donate slightly more than Hindus (4.47 versus 4.32 on a 1 to 5 scale), but an interaction effect of this measure with the treatment is not significant (see Figure 8 in Appendix Section 7.3.3). Further, we might expect more religious Muslims to be more cooperative. To test this hypothesis, we construct two measures of religiosity - *private practice*, using a question about prayer, and *public practice*, an index based on questions about visiting houses of worship, participating in services, donations, and fasting ($\alpha = 0.67$)²⁴. The empirical tests in Section 7.3.3 of the Appendix) shows that religiosity does not have an effect on the treatment, which is consistent with existing literature (Livny, 2020).²⁵

Second, the caste system is less rigid among Indian Muslims than Hindus. The absence of strict norms of purity, pollution, and social separation has allowed for greater social mobility within the

²⁴see Section 5.4 of the Appendix for details on measurement

²⁵Interestingly, Hindus are more religiously observant (private practice) than Muslims, and upper-caste Hindus more so. But Muslims participate more in public rituals (see Table 26 in Appendix Section 7.3.3).

Muslim community in India (Mines, 1972).²⁶ To the extent that horizontal social ties facilitate coordination, this relatively egalitarian social structure may also provide greater scope for collective action as compared to Hindus, whose rigid caste-based stratification has been shown to hinder cooperation (Banerjee et al., 2005; Hoff et al., 2011). As discussed earlier, measures of caste divisions are not significant when included in the main model (see Table 5). This is consistent with recent studies on urban India which emphasize that caste is not a major determinant of cooperation around public goods (Auerbach, 2017; Chidambaram, 2020). Although Auerbach and Thachil (2018) find evidence for prejudice against Muslims in Indian slums, the role of caste *within* Muslims is less explored. Our analyses presents a more nuanced picture: The effect of caste is different in the two communities, with pro-social attitudes limited to upper-caste Muslims. The absence of rigid caste divisions among Muslims does not seem to induce cooperation in the entire group as prevailing theories would predict.

Finally, Hindu caste norms of purity and pollution may bear directly on sanitation practices in the two communities. Geruso and Spears (2018) argue that cultural differences explain better sanitation practices among Muslims than Hindus. The latter group are 25 percent more likely to defecate in the open since human excreta is perceived to pollute the home. Nonetheless, in our study of drainage rather than toilets, Muslims in the sample showed no more concern for drain cleaning than Hindus (see Table 2). Religious cultural practices, such as participation in communal religious activities, are not significant when interacted with the treatments. Additionally, there is good reason to question the relevance of norms of purity and pollution in the context of urban slums since open defecation is largely a rural phenomenon in India. About 92% of households without access to toilets are located in rural areas (Spears and Thorat, 2019). Further, notions of purity are strongest among upper-caste members yet, in the urban context, a large section of the population in slums is composed of residents from lower-caste backgrounds (Banerjee et al., 2012). Because members of different caste groups live in close proximity to each other in urban slums, where the quality of sanitation facilities is often poor, it is difficult to remain faithful to caste-based norms of purity.

²⁶Our data, in fact, confirms greater socioeconomic heterogeneity across castes among Muslims (see Table 27 in Appendix Section 7.3.3)

7 Conclusion

To uncover the microfoundations of the diversity deficit hypothesis in the literature on ethnic diversity and development, scholars examine the role of social norms in facilitating cooperation in homogeneous communities (Habyarimana et al., 2007). Among neighbors and peers, this may take the form of community social sanctions, through measures like public shaming and gossip. Alternatively, top-down or vertical enforcement through pressure from local leaders can promote cooperative behavior. Our research highlights an additional mechanism that may moderate the relationship between diversity and local public goods provision – *minority status*. In similarly disadvantaged communities in Delhi, we find that Muslims are more likely to respond to social norms around cooperation as compared to Hindus, the majority group. Evidence from our survey, qualitative fieldwork, and existing research suggest that this may be a manifestation of *defensive cooperation*, a set of coping strategies in a hostile sociopolitical environment, which is largely driven by upper-caste Muslims and those with stronger ties to the ingroup. For members of persecuted minorities, social norms are not just determined by ingroup dynamics, but are also shaped by intergroup relations in the context of exclusion and threats of violence. Perceived violations of norms can be especially vexing for members of a persecuted minority when perpetrated by ingroup members, inviting strong efforts to police ingroup behavior.

Studies of diversity and development broadly adopt two different approaches. The first queries the micro-level mechanisms underlying the apparent association between ethnic heterogeneity and inferior socioeconomic outcomes, focusing on individual behavior in interactions with ingroup versus outgroup members (Habyarimana et al., 2007). The second approach pushes back against the concept of ethnic fractionalization, which treats groups as equivalent, and focuses on higher levels of analysis. Studies in this vein shift the debate to recognize the mediating role of intergroup differences, showing how cross-group inequality or historical exclusion shapes macro-level development outcomes, whether at the subnational or national levels (Baldwin and Huber, 2010; Kustov and Pardelli, 2018). Our work integrates insights from each approach by exploring how

macro-level intergroup inequalities and other dimensions of intergroup dynamics shape micro-level exchanges between individuals from different groups. In addition, we introduce a new dimension of group-based inequality to the diversity-development debate by highlighting variation not just in socioeconomic outcomes across groups but also of majority-minority dynamics.

We propose that members of persecuted minorities are more likely to contribute to local public goods as a manifestation of defensive cooperation. This set of coping strategies in the context of vulnerability and discrimination may encompass diverse mechanisms. First, fear of targeted violence and repression may induce members of persecuted minorities to contribute more to the collective goods as a way to avoid inciting further negative attention (Das, 2006; Mac Ginty, 2014). Second, the shared history of discrimination may compel minorities to band together, inducing greater contributions to local public goods, especially in contexts of high residential segregation where minorities are surrounded by members of their own community. The experience of discrimination may induce persecuted minorities to seek greater acceptance by the dominant group by downplaying their "Otherness" and contributing more to the society in general (Fouka, 2019; Jeffrey et al., 2008). Third, as theorists of the "politics of respectability" among Black Americans in the U.S. argue (Higginbotham, 1993; Jefferson, 2022), members of persecuted minorities who identify more strongly with the ingroup may be especially vested in countering negative stereotypes of their community, which in turn may incentivize them to adopt prosocial behaviors to enhance the ingroup image. Future research should unpack and test each of these and other potential mechanisms underlying defensive cooperation. The findings should resonate broadly beyond India because many developing countries suffer from poor public goods provision in urban slums and encompass residents from majority and minority groups.

From a policy perspective, our study highlights the unique challenges of public service provision for members of minority groups in informal settlements in a world characterized by rapid urbanization (United Nations, 2019). Drainage and sanitation is a clear failure of public goods provision in the slums of Delhi and many mega-cities in other developing countries, prompting residents to look beyond the state for solutions. In ethnically diverse communities, however, collective action to

provide local public goods may be all the more challenging when residents must overcome persecution and discrimination. In our study, members of the dominant group (Hindus) and subordinate group (Muslims) expressed relatively strong interest in the program, but only the latter responded positively to accountability mechanisms aimed at promoting contributions to the collective good. If collaboration across intergroup divides exacerbates the well-known challenges of public goods provision in diverse communities, then local officials and community representatives must account for the specific circumstances facing persecuted minorities as they confront the demands of urban governance on a scale unprecedented in human history.

References

- Ahmad, I. (1966). The Ashraf-Ajlaf Dichotomy in Muslim Social Structure in India¹. *The Indian Economic & Social History Review*, 3(3):268–278. Publisher: SAGE Publications India.
- Alesina, A. and Ferrara, E. L. (1999). Participation in Heterogeneous Communities. *NBER Working Paper No. 7155*.
- Alesina, A., Michalopoulos, S., and Papaioannou, E. (2016). Ethnic Inequality. *Journal of Political Economy*, 124(2):428–488.
- Asher, S., Novosad, P., and Rafkin, C. (2017). Estimating intergenerational mobility with coarse data: A nonparametric approach. Technical report, World Bank.
- Auerbach, A. M. (2016). Clients and Communities: The Political Economy of Party Network Organization and Development in India’s Urban Slums. *World Politics*, 68(1):111–148.
- Auerbach, A. M. (2017). Neighborhood Associations and the Urban Poor: India’s Slum Development Committees. *World Development*, 96:119–135.
- Auerbach, A. M. and Thachil, T. (2018). How Clients Select Brokers: Competition and Choice in India’s Slums. *American Political Science Review*, 112(4):775–791.
- Baldwin, K. (2015). *The Paradox of Traditional Leaders in Democratic Africa*. Cambridge University Press, New York.
- Baldwin, K. and Huber, J. (2010). Economic versus Cultural Differences: Forms of Ethnic Diversity and Public Goods Provision. *The American Political Science Review*, 104(4):644–662.
- Banerjee, A., Bertrand, M., Datta, S., and Mullainathan, S. (2009). Labor Market Discrimination in Delhi: Evidence from a Field Experiment. *Journal of Comparative Economics*, 37(1):14–27.
- Banerjee, A., Chandrasekhar, A. G., Duflo, E., and Jackson, M. O. (2019). Using gossips to spread information: Theory and evidence from two randomized control trials. *The Review of Economic Studies*, 86(6):2453–2490.

- Banerjee, A., Iyer, L., and Somanathan, R. (2005). History, Social Divisions, and Public Goods in Rural India. *Journal of the European Economic Association*, 3(2/3):639–647.
- Banerjee, A., Pande, R., and Walton, M. (2012). Delhi’s Slum-dwellers: Deprivation, Preferences and Political Engagement among the Urban Poor. Working Paper S-5003-INC-1, IGC International Growth Centre, London.
- Bardhan, P. and Mookherjee, D. (2012). Political Clientelism and Capture Theory and Evidence from West Bengal, India. Working Paper 97, UNU-WIDER.
- Bauer, M., Blattman, C., Chytilová, J., Henrich, J., Miguel, E., and Mitts, T. (2016). Can War Foster Cooperation? *Journal of Economic Perspectives*, 30(3):249–274.
- Bernhard, H., Fehr, E., and Fischbacher, U. (2006). Group Affiliation and Altruistic Norm Enforcement. *The American Economic Review*, 96(2):217–221.
- Bertrand, M. and Mullainathan, S. (2004). Are Emily and Greg More Employable Than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination. *American Economic Review*, 94(4):991–1013.
- Bhalotra, S., Clots-Figueras, I., Iyer, L., and Vecci, J. (2018). Leader Identity and Coordination. Working Paper S-89211-INC-1, IGC International Centre, London.
- Bharathi, N., Malghan, D. V., and Rahman, A. (2018). More heat than light: Census-scale evidence for the relationship between ethnic diversity and economic development as a statistical artifact. *IIM Bangalore Research Paper*, (575).
- Björkman, M. and Svensson, J. (2009). Power to the People: Evidence from a Randomized Field Experiment of a Community-Based Monitoring Project in Uganda. *Quarterly Journal of Economics*, 124(2):735–769.
- Centre for Regional Political Economy (2019). Politics and society between elections. Technical report, Azim Premji University.
- Chandra, K. (2006). What is ethnic identity and does it matter? *Annual Review of Political Science*, 9:397–424.
- Chhibber, P., Kumar, T., and Sekhon, J. (2018). Preferences for Descriptive Representation: Asymmetries Between Hindus and Muslims in India.
- Chidambaram, S. (2020). How Do Institutions and Infrastructure Affect Mobilization around Public Toilets vs. Piped Water? Examining Intra-slum Patterns of Collective Action in Delhi, India. *World Development*, 132:1–14.
- Das, V. (2006). *Life and Words: Violence and the Descent into the Ordinary*. University of California Press.
- Das, V., Kleinman, A., Lock, M. M., Ramphela, M., and Reynolds, P., editors (2001). *Remaking a World: Violence, Social Suffering, and Recovery*. University of California Press.

- Delhi Minorities Commission (2020). Report of the DMC fact-finding committee on North-East Delhi riots of February 2020. Technical report, New Delhi, India.
- Ditlmann, R. K., Samii, C., and Zeitzoff, T. (2017). Addressing Violent Intergroup Conflict from the Bottom Up? *Social Issues and Policy Review*, 11(1):38–77.
- Fearon, J. and Laitin, D. (1996). Explaining Interethnic Cooperation. *American Political Science Review*, 90(4):715–735.
- Fouka, V. (2019). How Do Immigrants Respond to Discrimination? The Case of Germans in the US During World War I. *American Political Science Review*, 113(2):405–422. Publisher: Cambridge University Press.
- Gaikwad, N. and Nellis, G. (2017). The Majority-Minority Divide in Attitudes toward Internal Migration: Evidence from Mumbai. *American Journal of Political Science*, 61(2):456–472.
- Gayer, L. (2012). Safe and Sound: Searching for a "Good Environment" in Abul Fazl Enclave, Delhi. In Gayer, L. and Jaffrelot, C., editors, *Muslims in Indian Cities: Trajectories of Marginalisation*, pages 213–236. Columbia University Press, New York, NY.
- Gayer, L. and Jaffrelot, C., editors (2012). *Muslims in Indian Cities: Trajectories of Marginalisation*. Columbia University Press, New York, NY.
- Geruso, M. and Spears, D. (2018). Neighborhood Sanitation and Infant Mortality. *American Economic Journal: Applied Economics*, 10(2):125–162.
- Gino, F. and Galinsky, A. D. (2012). Vicarious Dishonesty: When Psychological Closeness Creates Distance from One's Moral Compass. *Organizational Behavior and Human Decision Processes*, 119(1):15–26.
- Gino, F., Gu, J., and Zhong, C.-B. (2009). Contagion or Restitution? When Bad Apples Can Motivate Ethical Behavior. *Journal of Experimental Social Psychology*, 45(6):1299–1302.
- GNCTD (2006). Delhi Human Development Report 2006. Technical report, Government of National Capital Territory of Delhi/Oxford University Press, New Delhi.
- Government of India (2006). Social, Economic and Educational Status of the Muslim Community of India (Sachar Committee Report). Technical report, Government of India, New Delhi.
- Granovetter, M. S. (1973). The Strength of Weak Ties. *American Journal of Sociology*, 78(6):1360–1380.
- Gupta, G., Mahmud, M., Maitra, P., Mitra, S., and Neelim, A. (2018). Religion, Minority Status, and Trust: Evidence from a Field Experiment. *Journal of Economic Behavior & Organization*, 146:180–205.
- Habyarimana, J., Posner, D. N., Humphreys, M., and Weinstein, J. (2007). Why Does Ethnic Diversity Undermine Public Goods Provision? An Experimental Approach. *American Political Science Review*, 101:709–725.

- Hansen, B. B. and Bowers, J. (2008). Covariate balance in simple, stratified, and clustered comparative studies. *Statistical Science*, 23(2):219–236.
- Heitmeyer, C. (2009). ‘There is Peace Here’: Managing Communal Relations in a Town in Central Gujarat. *Journal of South Asian Development*, 4(1):103–120.
- Heller, P., Mukhopadhyay, P., Banda, S., and Sheikh, S. (2015). Exclusion, Informality, and Predation in the Cities of Delhi An Overview of the Cities of Delhi Project. Working paper.
- Higginbotham, E. B. (1993). *Righteous Discontent: The Women’s Movement in the Black Baptist Church, 1880–1920*. Harvard University Press, Cambridge, MA.
- Hoff, K., Kshetramade, M., and Fehr, E. (2011). Caste and Punishment: The Legacy of Caste Culture in Norm Enforcement. *The Economic Journal*, 121(556):F449–F475.
- Jefferson, H. (2018). Policing norms: Punishment and the politics and respectability among Black Americans. Working paper.
- Jefferson, H. (2022). The politics of respectability and black americans’ punitive attitudes. *American Political Science Review*, pages 1–17.
- Jeffrey, C., Jeffery, P., and Jeffery, R. (2008). *Degrees Without Freedom?: Education, Masculinities, and Unemployment in North India*. Stanford University Press.
- Jha, S., Rao, V., and Woolcock, M. (2007). Governance in the Gullies: Democratic Responsiveness and Leadership in Delhi’s Slums. *World Development*, 35(2):230–246.
- Khemani, S. (2015). Buying votes versus supplying public services: Political incentives to under-invest in pro-poor policies. *Journal of Development Economics*, 117(C):84–93.
- Kustov, A. and Pardelli, G. (2018). Ethnoracial Homogeneity and Public Outcomes: The (Non)effects of Diversity. *American Political Science Review*, pages 1–8.
- Lerner, J. S. and Tetlock, P. E. (2002). Bridging Individual, Interpersonal, and Institutional Approaches to Judgment and Decision Making: The Impact of Accountability on Cognitive Bias. In Schneider, S. L. and Shanteau, J., editors, *Emerging Perspectives on Judgment and Decision Research*, pages 431–457. Cambridge University Press, Cambridge.
- Livny, A. (2020). *Trust and the Islamic Advantage: Religious-Based Movements in Turkey and the Muslim World*. Cambridge University Press.
- Lust, E. and Rakner, L. (2018). The Other Side of Taxation: Extraction and Social Institutions in the Developing World. *Annual Review of Political Science*, 21(1):277–294.
- Mac Ginty, R. (2014). Everyday Peace: Bottom-up and Local Agency in Conflict-affected Societies. *Security Dialogue*, 45(6):548–564.
- Mehta, D. and Chatterji, R. (2001). Boundaries, Names, Alterities: A Case Study of a “Communal Riot” in Dharavi, Bombay. In Das, V., Kleinman, A., Lock, M. M., Ramphela, M., and Reynolds, P., editors, *Remaking a World: Violence, Social Suffering, and Recovery*. University of California Press.

- Miguel, E. and Gugerty, M. K. (2005). Ethnic Diversity, Social Sanctions, and Public Goods in Kenya. *Journal of Public Economics*, 89(11–12):2325–2368.
- Mines, M. (1972). Muslim Social Stratification in India: The Basis for Variation. *Southwestern Journal of Anthropology*, 28(4):333–349.
- Ministry of Urban Development (2012). Service levels in urban water and sanitation sector - a status report (2010–2011). Technical report, Government of India, New Delhi.
- Montalvo, J. G. and Reynal-Querol, M. (2005). Ethnic diversity and economic development. *Journal of Development Economics*, 76(2):293–323.
- Oskooii, K. A. (2016). How discrimination impacts sociopolitical behavior: A multidimensional perspective. *Political Psychology*, 37(5):613–640.
- Oskooii, K. A. (2020). Perceived Discrimination and Political Behavior. *British Journal of Political Science*, 50(3):867–892.
- Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press, Cambridge; New York.
- Padilla, F. M. (1985). *Latino ethnic consciousness: the case of Mexican Americans and Puerto Ricans in Chicago*. University of Notre Dame Press.
- Pahwa, S. (2023). Community Service Networks and Social Capital in Urban Indian Muslim Neighborhoods.
- Panagopoulos, C. (2010). Affect, Social Pressure and Prosocial Motivation: Field Experimental Evidence of the Mobilizing Effects of Pride, Shame and Publicizing Voting Behavior. *Political Behavior*, 32(3):369–386.
- Pardelli, G. and Kustov, A. (2022). When coethnicity fails. *World Politics*, 74(2):249–284.
- Schildkraut, D. J. (2005). The Rise and Fall of Political Engagement among Latinos: The Role of Identity and Perceptions of Discrimination. *Political Behavior*, 27(3):285–312.
- Singh, P. and vom Hau, M. (2016). Ethnicity in Time: Politics, History, and the Relationship between Ethnic Diversity and Public Goods Provision. *Comparative Political Studies*, 49(10):1303–1340.
- Soss, J. and Weaver, V. (2017). Police Are Our Government: Politics, Political Science, and the Policing of Race–Class Subjugated Communities. *Annual Review of Political Science*, 20(1):565–591.
- Spears, D. and Thorat, A. (2019). The Puzzle of Open Defecation in Rural India: Evidence from a Novel Measure of Caste Attitudes in a Nationally Representative Survey. *Economic Development and Cultural Change*, 67(4):725–755.
- Susewind, R. (2017). Muslims in Indian Cities: Degrees of Segregation and the Elusive Ghetto. *Environment and Planning A: Economy and Space*, 49(6):1286–1307.

- Tajfel, H. and Turner, J. C. (1986). The Social Identity Theory of Intergroup Behavior. In Worchel, S. and Austin, W. G., editors, *Psychology of Intergroup Relations*, pages 7–24. Nelson-Hall, Chicago.
- Thachil, T. (2017). Do Rural Migrants Divide Ethnically in the City? Evidence from an Ethnographic Experiment in India. *American Journal of Political Science*, 61(4):908–926.
- United Nations (2019). *World Urbanization Prospects: The 2018 Revision*. Department of Economic and Social Affairs, Population Division, United Nations.
- Uslaner, E. M. (2002). *The Moral Foundations of Trust*. Cambridge University Press. Google-Books-ID: MH3KWFd4fOMC.
- Varshney, A. (2003). *Ethnic Conflict and Civic Life: Hindus and Muslims in India*. Yale University Press, New Haven, CT.
- Wilkinson, S. (2004). *Votes and Violence: Electoral Competition and Ethnic Riots in India*. Cambridge University Press, Cambridge; New York.
- Williams, P. (2015). *Everyday Peace?: Politics, Citizenship and Muslim Lives in India*. John Wiley & Sons.
- Wimmer, A. (2020). *NATION BUILDING: Why some countries come together while others fall apart*, volume 3. Princeton University Press.
- Wimmer, A., Cederman, L.-E., and Min, B. (2009). Ethnic Politics and Armed Conflict: A Configurational Analysis of a New Global Data Set. *American Sociological Review*, 74(2):316–337.
- Winter, F. and Zhang, N. (2018). Social Norm Enforcement in Ethnically Diverse Communities. *PNAS*, 115(11):2722–2727.