Overcoming Intersectarian Divisions through Contact and Leadership: Evidence from a Field Experiment*

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Abstract

Sectarian divisions remain a critical but understudied source of social tension in the developing world. We conduct a field experiment with 302 Sunni worshipers across 24 mosques in Pakistan to evaluate whether intergroup contact and religious leadership can reduce prejudice toward Shias, the minority sect. We randomly assign mosques to receive: Shia volunteers praying alongside congregants, a unity message delivered by the mosque imam, or both interventions combined. The combined intervention significantly increases demand for Shia plumbers—an economic trust decision. In contrast, for openness to religious information decisions, the combined intervention has no impact as the leadership increases openness to Shia religious texts but contact triggers backlash. These results show that the effects of contact and leadership are interdependent and domain-specific: they reduce prejudice in material contexts when paired, but can reinforce bias in symbolic religious domains when misaligned.

JEL Classification: C93, D91, J15, O15, Z13.

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1 Introduction

Researchers in economics and political science have traditionally treated identity-based preferences, such as those tied to race, ethnicity, or religion, as fixed. Foundational work in this area emphasized that while diversity can generate benefits like innovation and creativity (Jha, 2013; Marx et al., 2021; Montalvo and Reynal-Querol, 2021), it also carries risks: lower cooperation, weaker public goods provision, and greater potential for conflict (Alesina et al., 1999; Habyarimana et al., 2009; Fearon and Laitin, 2003; Easterly and Levine, 1997; Garcia and Reynal-Querol, 2005). These costs are especially pronounced in low-capacity states, where institutions are weaker and less able to manage group-based tensions (Alesina and La Ferrara, 2005)[1].

More recently, a growing literature has begun to examine whether inter-group contact or institutional messaging can actively reduce prejudice and improve social cohesion. Studies in diverse settings, including schools, sports teams, and civic institutions, have shown that contact under the right conditions can foster cooperation and reduce bias (Lowe, 2021; Mousa, 2020; Scacco and Warren, 2018) and historical analysis of nation-building has also highlighted the role of centralized messaging and shared identity in unifying fragmented populations (Assouad, 2020; Bazzi et al., 2019; Blouin and Mukand, 2019). Yet even as these studies point to the potential of contact and leadership, they also reveal limits: prejudice is often persistent (Giuliano and Nunn, 2021), and efforts to foster unity can backfire without careful design. Hence, a deeper understanding is needed of when and how contact and leadership can reduce prejudice, especially across different social domains and identity types.

[1] In their model, ethnic diversity is beneficial only at higher levels of development because less developed societies do not have institutional features to cope with the conflict intrinsic to diversity.

We explore this question through a field experiment in Haripur District, northwest Pakistan, testing whether sectarian prejudice can be reduced through exposure to out-group religious practice (contact) and endorsement by religious authority (leadership). Our focus is on sectarian identity, which has received less attention in the literature than ethnic or racial identity despite its salience in many developing countries. We examine the Shia-Sunni divide within Islam,[2] where roughly 15 percent of Muslims globally are Shia and the majority Sunni, often living together in countries such as India, Iraq, Pakistan, and Syria. In Pakistan, the world's second-largest Muslim country and home to the largest Shia population outside Iran, this divide has been especially pronounced. Sectarian tensions deepened in the 1980s following the Iranian revolution and the proxy conflict between Saudi Arabia and Iran, which fueled extremist groups and escalated into widespread violence in the 1990s. Haripur itself has been significantly affected by the war on terror since 2002, including targeted attacks by Sunni militants such as the Taliban against the Shia minority. These dynamics have left enduring impacts: Sunnis, who form the majority, continue to hold discriminatory beliefs about Shias; for example, only about 20 percent of Sunnis express support for inter-sectarian marriage (Kalin and Siddiqui, 2014).

The significance of sectarian identity lies in its distinct features, which set it apart from other forms of social division such as ethnicity, caste, or race. First, when sectarian divisions exist, they relegate ethnic or racial divisions to lower importance. Second, sectarian identity is not correlated with economic activity, unlike, say, castes in India: Shias and Sunnis do not specialize in a particular sector, nor do they belong to one particular income class. Third,

[2]While we focus on this particular sectarian divide, other sectarian divisions—such as between Catholics and Protestants—have also shaped conflict in places like Ireland.

while sectarian identities can be a source of division, members of both sects are still part of one overarching religion, which can be a source of unity.

In this context we conducted a field experiment to identify the separate and joint effects of exposure to Shia religious practice and religious leadership messaging on sectarian attitudes. First we collected baseline data for both Sunni and Shia worshipers. These data show broadly similar demographic profiles, consistent with sectarian divisions in Pakistan differing from race or caste identities, but also reveal that Sunnis, the majority sect, hold less favorable perceptions and more factual misconceptions about Shias. We then implemented a field experiment across 24 Sunni mosques over a twelve-day period, randomly assigning three treatment conditions and a control group.

In the contact treatment, we sent volunteer Shia worshipers to pray alongside Sunni congregants during evening prayers. The volunteers followed Shia customs during prayer but were instructed not to initiate conversation or engage in any activity beyond worship, allowing for natural, unforced exposure to sectarian difference. Differences in physical movements during prayer made the sectarian identity of the volunteers unmissable in our setting, particularly given the small size of daily congregations (approximately twelve worshipers on average) and our deliberate strategy of sending three to four Shia volunteers to each mosque, comprising roughly 20 percent of the congregation.

In the leadership treatment, the mosque imam—a respected religious authority and gatekeeper of spiritual legitimacy—delivered a daily message of unity shortly before the start of evening prayers. The announcement consisted of a simple but well-known Quranic verse, recited in Arabic and translated into Urdu: "Hold fast together to the cable of Allah and be not divided" (Surah Al-Imran 3:103). The verse emphasizes cohesion and firmness in faith

among Muslims, without explicitly referencing sectarian divisions. In the Pakistani context, where religion plays a central role in public and private life, the imam's voice carries considerable influence. His public endorsement of unity, even in general terms, is a powerful signal to congregants, many of whom seek to remain in good standing with religious leadership. In the combined treatment, both interventions were implemented together: Shia worshipers attended prayers and the imam delivered the unity message each day.

Our incentivized outcomes are designed to capture prejudice across distinct social domains: economic trust and religious openness. The first set of outcomes focuses on a real-world economic decision: whether to hire a plumber whose name clearly signals either Shia or Sunni sectarian affiliation. This task requires respondents to make a choice involving a service provider who would enter their home, thereby demanding a high level of personal trust, especially in a conservative society where economic activity is typically confined to kin networks (Beaman, 2016; Dhillon and Afridi, 2022). The second set of outcomes examines openness in the doctrinal domain of religion, measured by whether respondents use vouchers to purchase discounted books associated with each sect. Each participant could choose between two Shia and two Sunni books, one on ritual prayer and one on early Islamic historical narratives. While both categories carry religious significance, the history books are more closely tied to sectarian identity, highlighting foundational Islamic narratives that differ between sects. In contrast, the prayer books highlight ritual practices where sectarian differences are more visible but limited to the outward expressions of worship.

We find that the combined treatment leads to a meaningful reductions in sectarian bias in the economic trust decision. Worshipers exposed to the combined interventions were significantly more likely to hire a Shia plumber in an incentivized task, with demand rising

by 16.9 percentage points which represents an 77 percent increase relative to the control. In contrast, we find no effect from the contact or leadership treatments alone. In the second incentivized task involving religious book purchases, we find a positive effect of the leadership treatment alone, which increases the purchase of Shia history books by 8.8 percentage points representing a 37 percent increase relative to the control. However, we find no effect of the contact treatment, and critically, no effect of the combined treatment, suggesting that contact may have diluted or even offset the imam's message in this more religiously charged domain. In some subsamples, the contact treatment even generates backlash—reducing the purchase of Shia books—highlighting how contact in religious settings may heighten doctrinal sensitivity rather than reduce it. These effects are concentrated in the purchase of history books, with little to no change in demand for the ritual prayer books.

Our study makes two core contributions. First, we demonstrate that contact and leadership interact, it is the combination of contact with the out-group and endorsement by a trusted religious authority that drives behavioral change in economic decisions. These findings suggest that leadership endorsement may legitimize contact in ways that reduce social risk and open the door to behavioral change.

Second, we show that this interaction is domain-specific. The combined treatment shifts behavior in economic decisions, where trust and social risk are paramount, but not in religious decisions, where doctrinal sensitivity is heightened. In fact, contact alone can backfire in this domain. This pattern highlights that interventions targeting prejudice must consider not only the design of the treatment but also the social and symbolic domains of the outcome being studied.

We interpret these patterns through the lens of behavioral and social identity theory:

people compartmentalize decision-making across domains, and exposure or messaging may shift preferences in one domain (e.g., hiring a plumber) while reinforcing bias in another (e.g., engaging with out-group religious materials). The leadership message was interpreted as a theoretical teaching; when paired with contact, it encouraged real-world tolerance in an economic setting. But when applied to a symbolic religious choice, where doctrinal differences are more salient, exposure may have heightened sectarian awareness.

To support this interpretation we also show suggestive evidence using survey-based measures that these effects are driven by shifts in preferences, not knowledge. While our interventions did not improve factual understanding of Shia beliefs or practices, they did improve perceptions of Shias along dimensions such as peacefulness, intelligence and responsibility.

Our findings build on and extend the literature on the contact hypothesis (Allport et al., 1954), which posits that intergroup contact can reduce prejudice under certain conditions. Despite its influence, few experimental studies have tested these conditions outside Western racial or ethnic contexts, and even fewer have randomized both contact and messaging or used behavioral outcomes. As Paluck et al. (2019) note, most studies rely on surveys rather than incentivized measures, and few address religious divides in conservative, real-world settings.

We contribute to this literature in several ways. First, we disentangle the roles of contact and leadership, showing that their effects are not additive but interdependent—and that contact alone may backfire in sensitive domains. Previous research, including Boisjoly et al. (2006), Enos (2014), Dahl et al. (2021), Scacco and Warren (2018), Corno et al. (2022), Schindler and Westcott (2021), and Rao (2019), often tests one type of contact.[3] An excep-

[3]For example, regarding contact, Scacco and Warren (2018) randomize educational training of Christians

tion is Lowe (2021), who explores inter-caste contact in India by randomizing cricket-team composition and shows that cooperative, not adversarial, contact leads to a reduction in prejudice against out-group members. Second, we study a setting where sectarian identity is deeply rooted in theology rather than socioeconomic status, offering insights into how religious authority, ritual, and perception intersect. Hence, we contribute to the literature on understanding how culture and religion shape beliefs and behavior. This literature has shown that identity, culture, and religion are major determinants of economic outcomes and behaviors (Akerlof and Kranton, 2000; Fernández, 2011; Gorodnichenko and Roland, 2011; Alesina et al., 2013); in particular, it explores the role religious authorities play (Clingingsmith et al., 2009; Bassi and Rasul, 2017; Bhalotra et al., 2021). Third, we use behavioral measures—real choices about hiring and book purchases—to identify meaningful shifts in behavior, rather than relying solely on self-reported attitudes.

The rest of the paper proceeds as follows. Section 2 presents the context of the Shia-Sunni divide. Section 3 presents the details of the experimental design and the data. Section 4 describes our econometric specification and presents our main results and mechanism analysis. Section 5 concludes.

2 Shias and Sunnis in Pakistan

Sectarian divisions in Pakistan are historically rooted, visibly expressed, and reinforced by misinformation. In this context, prayer practices serve as a public marker of identity, and

and Muslims and find no changes in prejudice, though mixed-class subjects discriminate significantly less against out-group members than subjects in homogeneous-class groups. Mousa (2020) complements that work by showing evidence for the positive effects of collaboration between Muslims and Christians in soccer leagues in the post conflict setting of Iraq.

religious leaders wield considerable authority, making both exposure to out-group prayer and leadership messaging powerful tools for reducing prejudice.

The Shia-Sunni divide dates back to early Islamic history, emerging just decades after the Prophet Muhammad's death. While theological differences between the sects have long existed, their modern-day salience, especially in countries like Pakistan, owes much to geopolitical rivalries. Since the 1980s, Saudi Arabia and Iran have engaged in proxy conflicts across the Muslim world, including through the funding of religious organizations, charitable networks, and clerical schools. These efforts have not only polarized religious interpretations but also deepened exclusionary beliefs and identities. In extreme cases, adherents of one sect refuse to recognize the other as Muslim; even more dangerously, some justify violence on theological grounds.

Pakistan provides a particularly stark example of this dynamic. The country has experienced repeated waves of sectarian violence, often perpetrated by Sunni extremist groups against Shia communities. Beliefs that question the religiosity or Muslim identity of Shias are common and contribute to deep mistrust. However, unlike ethnic or linguistic groups, Shias and Sunnis in Pakistan are not divided by region, class, or occupation. They live, work, and worship in close proximity, sharing a national and religious identity but divided by sectarian lines.

One source of such division is misinformation about religious rituals. Daily prayer (*salat*), one of the five pillars of Islam, is of paramount importance in both sects. However, small physical differences in how Shias and Sunnis perform their prayers have led to widespread misconceptions. In particular, Sunni worshipers often believe that Shias either do not pray or pray incorrectly. These misconceptions persist despite both sects performing the same

number of prayers each day with identical core content. The key difference lies in posture: Sunnis typically clasp their hands during standing prayer, while Shias leave their arms at their sides. These visible distinctions make sectarian affiliation legible in congregational settings, reinforcing social boundaries even in the absence of conversation.

Our experimental design builds on this context. By leveraging the visibility of sectarian prayer differences, we create opportunities for contact and social learning. Our interventions aim to test whether repeated exposure to out-group religious practice and messaging from religious leaders can reduce prejudice in a setting where theological disagreement is salient, yet socioeconomic differences are minimal.

3 Experimental Design

Our intervention occurred across 24 Sunni mosques in Haripur, Pakistan, between May 2022 and January 2023, where we implemented three randomized interventions. Data were collected at baseline and endline using surveys that included behavioral measures to assess attitudes toward Shias.

3.1 Sample

Our study draws on a representative sample of mosques in a region with a history of sectarian violence. We pair randomized treatment assignment with detailed baseline and endline surveys, allowing us to compare attitudes across sects and to assess balance across treatment arms. The data show that while Sunnis and Shias are demographically similar, Sunnis hold more negative attitudes and factual misconceptions about Shias, making them the relevant

EXPERIMENTAL TIMELINE

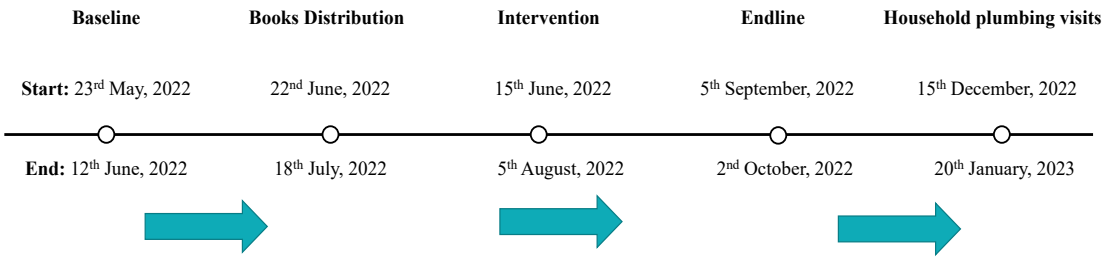

Figure 1: Experimental Timeline

target group for our experimental interventions.

The experiment took place in Haripur District, located in Kyber Pakhtunkhawa, the third-largest province of Pakistan with a population of approximately one million. Situated along the Afghan border in northwest Pakistan, Kyber Pakhtunkhawa was the province most affected by the war on terror that began in 2002, with Shias often being specific targets of terrorist organizations. This history of sectarian violence makes it a particularly relevant setting for our study. Between 2003 and 2021, 5,279 civilians in the province were killed in terrorist attacks by Sunni militant groups.

We selected 33 mosques across ten towns and villages in Haripur: 24 Sunni and 9 Shia mosques. Worshipers at the Shia mosques were only surveyed at baseline to enable comparison across sects, while worshipers at the Sunni mosques formed the experimental sample that experienced the intervention and was surveyed at both baseline and endline. Stratified random sampling was used to assign the Sunni mosques to one of three treatment arms or a control group. Stratification was based on median worshiper attendance, categorizing mosques into high and low attendance groups to ensure balance across treatment conditions.

Table 1: **Baseline Characteristics: Sunni vs. Shia Worshipers**

	Sunnis Sample (1)	Shias Sample (2)	Difference (p value) (3)
Demographics			
Age	39.86	39.77	(0.94)
Secondary Education	0.56	0.59	(0.56)
Married	0.75	0.79	(0.49)
Married Within Sect	0.96	0.91	(0.08)*
Employed	0.71	0.73	(0.65)
Income Range			
15,000-25,000	0.39	0.38	(0.81)
25,001-35,000	0.36	0.33	(0.50)
35,001-50,000	0.17	0.20	(0.51)
>50,000	0.07	0.09	(0.53)
Internet Daily	0.84	0.70	(0.00)***
Inter-sect Familiarity			
Knows Opp-Sect	0.82	0.89	(0.06)*
Close Friend Opp-Sect	0.67	0.79	(0.01)**
Willingness to Do Business Opp-Sect	3.76	3.91	(0.07)*
Willingness to Hire Opp-Sect	3.56	3.71	(0.06)*
Knowledge of Opposite Sect:			
Knows Scholar	0.77	0.63	(0.00)***
Incorrect Ritual Belief	0.22	0.90	(0.00)***
Perceptions of Opposite Sect:			
Arrogant	2.65	3.24	(0.00)***
Fanatical	2.50	2.74	(0.01)**
Ungrateful	3.12	3.35	(0.05)*
Unreasonable	3.27	3.48	(0.11)
Friendly	3.64	3.60	(0.64)
Patriotic	3.50	3.66	(0.07)*
Good Citizen	3.43	3.58	(0.11)
Religious	3.39	3.45	(0.55)
Honest in Business	3.28	3.48	(0.04)**
Intelligent	3.42	3.42	(1.00)
Peaceful	3.57	3.42	(0.18)
Responsible	3.48	3.44	(0.66)
N	302	126	428

Notes: This table shows summary statistics by sect.

3.1.1 Sunni–Shia Comparison at Baseline

The baseline survey covered both Sunni and Shia mosques to enable direct comparison across sects. Table 1 shows that the two groups are broadly similar in their demographic and socioeconomic characteristics. Average age is nearly identical at 40 years, the share married is three-quarters among Sunnis and 79% among Shias, and employment rates are also close (71% vs. 73%). Educational attainment is comparable, with more than half in both groups having completed secondary school. Likewise, income distributions are balanced: 39% of Sunnis and 38% of Shias fall into the lowest income category, while fewer than 10% in either group earn above 50,000 PKR per month. These patterns underscore that sectarian divisions in Pakistan—unlike caste in India or ethnicity in many African settings—are not associated with class differences.

More substantive differences emerge in inter-sect familiarity. While most Shias (89%) report knowing at least one Sunni, this is slightly lower than among Sunnis (82%). The gap is wider for closer ties: 67% of Sunnis report having a Shia friend compared to 79% of Shias who report having a Sunni friend. Sunnis are also less willing to engage economically with the out-group: on a 1–5 scale with 5 being the most willing, willingness to do business with a Shia averages 3.76 among Sunnis compared to 3.91 among Shias, with similar gaps for hiring preferences (3.56 vs. 3.71).

Knowledge of the opposite sect's religious scholars and practices is another dividing line. While more Sunnis could correctly identify a prominent Shia scholar, Sunni misconceptions about Shia rituals were widespread. 90% of Shias correctly reported the Sunni prayer frequency, but just 22% of Sunnis correctly reported the number of Shia daily prayers, a

difference that is highly significant.

Finally, perceptions reveal clear attitudinal gaps. On a 1-5 scale, with 5 being the most positive perception, Sunnis rate Shias as less honest in business (3.28 vs. 3.48), while attributing more negative traits such as arrogance (2.65 vs. 3.24) and fanaticism (2.50 vs. 2.74). Taken together, these results highlight that sectarian divides in this context manifest not through socioeconomic status but through weaker inter-sect familiarity, persistent factual misconceptions, and more negative perceptions among Sunnis. Since Shias hold fewer misconceptions and more positive baseline views, focusing our interventions on Sunnis was the natural design choice to maximize the scope for attitudinal change.

3.1.2 Sunni Experimental Sample and Balance

The experimental sample consisted of the 302 Sunni worshipers drawn from the 24 Sunni mosques, randomized into the 3 treatment arms and a control group. Table 2 shows that randomization produced balanced treatment arms along key demographic and attitudinal dimensions. The experimental sample was, on average, 40 years old (range 21–72), with the majority having completed at least secondary school. Most were married (75%), and marriage was overwhelmingly within their own sect (96%). Income levels were modest, with only 7% earning above the national median wage. A large majority (84%) reported daily internet use, suggesting relatively high digital connectivity among participants.

3.2 Experimental Conditions

We designed three treatment arms—contact through Shia presence, leadership through an imam-delivered message, and a combination of both—to assess the effects of exposure and

Table 2: **Summary Statistics and Balance**

	Leadership (A)	Contact (B)	Combined (C)	Control (D)	Joint p-value (A=B=C=D)	N
Age	40.154	38.346	39.621	41.000	0.49	301
	(1.526)	(1.244)	(1.522)	(1.201)		
Secondary Education	0.577	0.500	0.561	0.585	0.70	302
	(0.069)	(0.057)	(0.062)	(0.048)		
Married	0.788	0.769	0.667	0.783	0.37	302
	(0.057)	(0.048)	(0.058)	(0.040)		
Married Within Sect	0.951	0.967	0.955	0.976	0.89	228
	(0.034)	(0.023)	(0.032)	(0.017)		
Income						
15,000-25,000	0.490	0.487	0.409	0.264	0.00	299
	(0.070)	(0.058)	(0.061)	(0.043)		
25,001-35,000	0.333	0.368	0.333	0.396	0.81	299
	(0.066)	(0.056)	(0.058)	(0.048)		
35,001-50,000	0.137	0.132	0.182	0.217	0.42	299
	(0.049)	(0.039)	(0.048)	(0.040)		
>50,000	0.039	0.013	0.076	0.123	0.01	299
	(0.027)	(0.013)	(0.033)	(0.032)		
Internet Daily	0.788	0.897	0.773	0.858	0.15	302
	(0.057)	(0.035)	(0.052)	(0.034)		

Notes: This table shows summary statistics by treatment group and balance for the full sample of 302 worshipers. Age is measured in years. Secondary Education is a binary variable equal to 1 if the respondent's highest level of completed education is high school. Married equals 1 if the respondent is currently married, Wife Same Sect equals 1 if the respondent's spouse belongs to the same religious sect as them. Income categories are for self reported income. Internet Daily equals 1 if the respondent reports using the internet daily. Robust standard errors in parenthesis.

religious leadership on sectarian attitudes. A fourth group served as the control.

In the first treatment arm, we introduced contact by having volunteer Shia worshipers pray alongside congregants in Sunni mosques. The volunteers did not initiate conversation or engage in any activity beyond prayer. They simply entered, followed their own sect's customs during worship, and left. This subtle but visible presence provided an opportunity for congregants to observe members of the opposite sect in a natural religious setting. Each mosque received two to three volunteers daily over a twelve-day period, during the second-to-last prayer of the day—typically the most attended, occurring around sunset after work.

The visibility of the volunteers' Shia identity was ensured by two factors: (i) low average mosque attendance (13.7 worshipers outside of Friday congregational prayers) and (ii) widely known, visibly distinct prayer rituals between the sects.

The second treatment centered on religious leadership. Here, the imam—the mosque's spiritual leader and a gatekeeper of religious norms—delivered a short message promoting unity just before the start of prayers. The imam holds considerable influence over congregants, who often seek his approval and guidance. His endorsement of a value or idea carries moral and religious weight and can shape community attitudes. The message was a well-known Quranic verse: "Hold fast together to the cable of Allah and be not divided" (Surah Al-Imran 3:103). While the verse promotes cohesion, it does not explicitly reference Shias or Sunnis. Instead, it is open to interpretation—some may view it as a call for unity across sects, while others may understand it as unity within their own sect. Thus, the imam's message functioned more as a theoretical teaching, which, depending on the listener's interpretation, could support inter-sectarian or intra-sectarian harmony.

Congregants' behavior inside the mosque remained organic and unforced, as there is no legal, moral, or religious barrier preventing members of different sects from praying together. Accordingly, our volunteers were never stopped from participating. We did not mandate any interaction between sects. The meaning conveyed by a Shia's presence was subtle and derived from experience, not instruction. Mosques themselves do not differ significantly between the sects and are generally perceived as safe, neutral spaces, particularly when the imam is welcoming.

Between the two stand-alone treatments, the contact intervention is more direct. It placed out-group members physically in the same space, allowing congregants to observe sectarian

difference firsthand. However, this could also provoke discomfort: while the number of Shia volunteers was small, their unfamiliar presence could be perceived as an intrusion. In some cases, our field teams noted that congregants appeared puzzled, but no incidents occurred.

The third treatment arm combined both approaches, making it our most comprehensive and potent intervention. Each day for twelve days, the imam delivered the unity message while Shia volunteers participated in prayer. This pairing of symbolic leadership with direct exposure offered a more robust cue for tolerance. The presence of out-group members was framed by a respected authority as legitimate, even benevolent. On their own, exposure might reinforce prejudice (Enos, 2014), and a generic call for unity might be dismissed. Together, they form a clear, credible, and actionable call for inclusion.

3.3 Data Collection and Variables

We collected rich data at baseline and endline (one month after the intervention) on demographics, religiosity, beliefs and preferences. We implemented two incentivized behavioral experiments to measure changes in sectarian attitudes, alongside survey-based and enumerator-coded measures.

3.3.1 Experimental Outcomes:

We conduct two incentivized experiments to measure respondents' preferences and openness toward members of the opposite sect. These outcomes capture different dimensions of social and economic interaction: one is embedded in religious identity, while the other, is not overtly religious but carries strong social implications. This distinction allows us to assess whether exposure and religious leadership affect outcomes differently based on their religious,

economic, and interpersonal context.

Our first outcome involves a book choice activity, implemented at both baseline and endline. Each respondent receives a discount voucher redeemable for one of four religious books—two about their own sect and two about the opposite sect. Books about the opposite sect are offered at a steep 80% discount, while books about one's own sect are discounted at 20%. Each voucher has a value of PKR 100. The English version of the voucher is included below, with the Urdu version provided in the appendix. Sunni books (PKR 80 and PKR 180) are listed on the top row, while Shia books (PKR 120 and PKR 135) appear on the bottom. We selected these titles in consultation with a religious scholar who is an authority on sectarian matters. For each sect, we chose one book on ritual prayers and another on early Islamic history. To avoid resale or gift incentives, all books were stamped as "not for sale."

This outcome captures a religiously coded form of openness: the willingness to engage with the beliefs and practices of the other sect. Importantly, it does not involve direct interaction with members of that sect. As such, it allows us to observe whether treatments change private attitudes or intellectual curiosity without social or familial exposure. While both types of books carry religious significance, they differ in their relationship to sectarian identity. The history books highlight foundational Islamic narratives about the life of Prophet Muhammad. Even at this basic level, the two sects differ in their versions of the historical narrative, and these divergent accounts play a central role in shaping sectarian identity. The prayer books, in contrast, focus on ritual practices where sectarian differences are more visible but remain limited to outward forms of worship.

Our second outcome is more socially embedded: a plumber hiring decision, introduced

only at endline. Each respondent receives a voucher worth PKR 1,000 to hire one of two plumbers, each with a name clearly associated with either the Shia or Sunni sect.[4] From this pool, 100 respondents are randomly selected to actually receive the plumbing service. The plumbers are sent to the respondents' homes to carry out repairs.

This is choice is significant because firstly in many developing countries, kinship and social networks strongly shape economic behavior (Dhillon and Afridi, 2022; Beaman, 2016). Hiring outside one's caste, religion, or language group is rare. Secondly, while this outcome is not religiously coded in the sense that plumbing is a secular profession with no direct theological symbolism, it carries heavy social meaning, especially in a conservative setting like Haripur. Hiring a plumber is not a casual or impersonal transaction: the plumber enters not only the home, but potentially private quarters, and may stay for a considerable time while family members are present. In South Asian societies, such home entry, especially by someone from an out-group, is far from trivial. It reflects a high degree of interpersonal trust and openness, making the plumber outcome a meaningful proxy for inter-sectarian openness in the private sphere.

By examining both a religious, symbolic outcome and an economic and socially intimate outcome, we can assess how our treatments influence distinct types of intergroup behavior. The religious messaging of the imam and the embodied presence of Shia volunteers may interact differently with these contexts, shedding light on how beliefs translate into practice.

[4]Some sectarian names signal deep identity divides. For example, names of historical figures revered by one sect but reviled by another can signal clear religious affiliation.

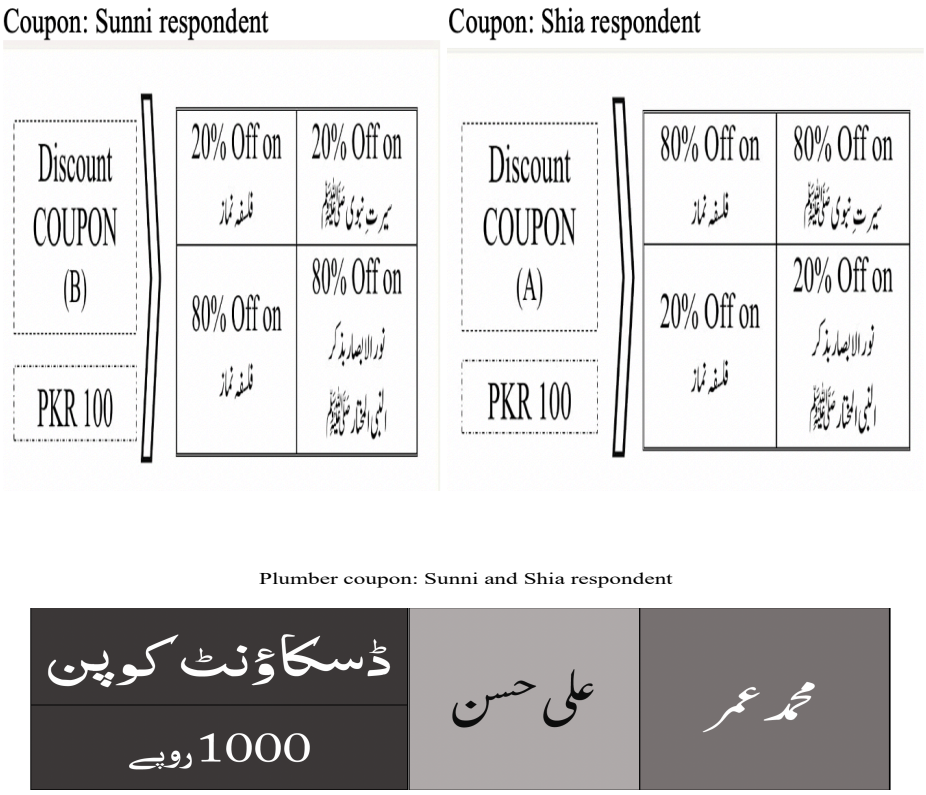

Figure 2: Book Voucher: Four discounted books are offered - two from each sect. Plumber Voucher: One obviously Sunni and Shia name each is visible in this voucher.

3.3.2 Survey-Based Outcomes:

In addition to our incentivized behavioral measures, we use survey-based outcomes to examine potential mechanisms through which our treatments influence attitudes toward the out-group. We group these outcomes into two categories: perceptions and beliefs. Perception outcomes aim to capture respondents' attitudes about the character and personality traits of out-group members. Belief outcomes, by contrast, assess factual knowledge about Shia religious practices and historical figures. This distinction aligns with standard models of discrimination in economics, which differentiate between bias driven by misinformation or stereotypes and bias rooted in intrinsic group preferences.

The perception variables are based on respondents' agreement with statements about Shias, measured on a five-point Likert scale. We include four perception outcomes: whether Shias are perceived as responsible, peaceful, intelligent, and religious. These dimensions reflect character judgments that are often associated with interpersonal trust, and were selected based on prior qualitative work on Sunni attitudes toward Shias in the region.

The belief variables include two measures of respondents' factual understanding of Shia Islam. First, we ask whether respondents can correctly identify the name of a leading Shia scholar considered foundational to the sect's religious tradition. Second, we test whether they know the correct number of daily prayers Shias perform. This is a common point of misunderstanding in Sunni discourse; although both sects perform five prayers, Shias often combine them into three distinct prayer times, leading to the incorrect belief among many Sunnis that Shias pray less frequently.

Together, these five survey-based outcomes help us test the mechanisms behind any

observed behavioral change. If prejudice is reduced through updated knowledge, we should see improvements in the belief outcomes. If, instead, prejudice declines while beliefs remain unchanged, this suggests a shift in preferences or social perceptions.

4 Results

We examine the effects of leadership and contact interventions on economic decisions and openness to religious information about the opposite sect and find that impacts vary by the type of outcomes and their connections to religious beliefs. In hiring decisions, the combined intervention increases demand for Shia workers in an incentivized setting. For purchasing religious books of the opposite sect—an outcome more directly tied to sectarian beliefs—the leadership intervention increases demand, while contact and combined interventions show no effect, suggesting that contact may trigger a backlash, offsetting the leadership intervention's impact. Analysis of underlying mechanisms indicates that these behavioral changes are driven by shifts in preferences and perceptions rather than improvements in doctrinal knowledge.

4.1 Econometric Specification

We estimate the following regression specification to analyze the effects of leadership and contact interventions on economic decisions and openness to religious information about the opposite sect:

$$Y_{mi} = \beta_1 (Leadership)_{mi} + \beta_2 (Contact)_{mi} + \beta_3 (Combined)_{mi} + X_{mi} + \delta_m + \epsilon_{mi}, \qquad (1)$$

Our analysis is at the individual level. Here, Y_{mi} is the outcome of interest for individual i in strata m. $Leadership_{mi}$, $Contact_{mi}$ and $Combined_{mi}$ are binary variables for each of our three treatments, respectively. We include strata fixed effects δ_m. We run these regressions with and without control variables, X_{mi}, for greater precision. We cluster standard errors at the strata level. In the appendix, we also report bootstrap and randomization inference standard errors.

4.2 Economic Trust Outcome - Hiring Choice

We study the effect of leadership and contact interventions on economic choices by analyzing the decision of Sunni worshipers to hire Shias. In the incentivized experiment, the combination of leadership and contact leads to a large increase in the demand for hiring members of the minority sect, while neither intervention alone changes hiring behavior.

Table 3 shows our results from separately estimating regression equation 1 for the incentivized experiments. For each outcome we run a simple regression with only strata fixed effects and our preferred specification which also includes controls.

Our first results, in columns 1 and 2, are for the incentivized hiring experiment in which we offer discounted services from two plumbers of clearly different sects. The outcome is a binary variable equal to 1 when respondents choose services from a Shia plumber and 0 otherwise. We find economically and statistically significant effects for our combined treatment, which increases demand for Shia plumbers by 16.9 percentage points against a mean control-group demand of 21.7 percent. This represents a 77 percent increase in minority sect hiring. Importantly we find no impact of the leadership or contact interventions on their

own. The estimated coefficient for each of these interventions is close to zero.

Our results are robust to a number of standard error measurements and small sample tests. In appendix Y we report results using bootstrap standard errors, randomization inference standard errors and a restricted sample which randomly drops ten percent of observations. In each case our results do not change qualitatively and remain both statistically and economically significant showing that they are not driven by outliers and are not sensitive to using different measures on uncertainty.

Table 3: **The Effect of Leadership & Contact on Incentivized Choices**

	Economic Trust		Religious Openness			
	Hire Plumber		History Book		Prayer Book	
	(1)	(2)	(3)	(4)	(5)	(6)
Leadership	-0.044	-0.080	0.085	0.084**	0.008	0.001
	(0.035)	(0.051)	(0.044)	(0.024)	(0.052)	(0.053)
Contact	0.031	0.048	0.019	-0.020	-0.022	-0.046
	(0.033)	(0.043)	(0.064)	(0.060)	(0.099)	(0.064)
Combined	0.145*	0.169**	-0.037	0.015	0.102	0.134
	(0.062)	(0.064)	(0.064)	(0.069)	(0.056)	(0.072)
Strata Fixed Effects	X	X	X	X	X	X
Controls		X		X		X
Control Mean	0.217	0.217	0.226	0.226	0.189	0.189
Number of Respondents	302	299	302	299	302	299
Number of Mosques	24	24	24	24	24	24

Notes: $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. In columns 1 and 2, the dependent variable is a binary variable equal to 1 when respondents choose discounted plumbing services from a member of the Shia sect and 0 otherwise. In columns 3-6, the dependent variable is the number of Shia religous books, history or prayer, chosen by respondents at the endline. All outcomes are based on incentivized lab-in-the-field experiments. The independent variables are the assignment of mosques to the contact, leadership or combined treatment. We use robust standard errors, strata fixed effects and cluster errors at the strata level.

4.3 Religious Openness Outcomes: Book Choices

Next we study the impact of leadership and contact interventions on openness to seek religious information about the opposite sect by analyzing the decision of Sunni worshipers to buy Shia religious books. This outcome is especially relevant as sectarian divisions are fundamentally rooted in differing religious beliefs. We find that the leadership intervention leads to an increase in purchase of Shia history books. In contrast, the contact and combined interventions show no effect, suggesting that contact may trigger a backlash, offsetting the leadership intervention's impact. None of the interventions impact the demand for Shia prayer books. Our findings highlight that the impact of leadership and contact interventions varies significantly when outcomes are more closely tied to sectarian beliefs.

Table 3 shows the results for incentivized book purchase experiment in which we offer discounted religious books written from the perspective of each sect. We again estimate regression equation 1 separately for each outcome, with and without controls. The outcome is the number of Shia religious books purchased at endline—history books in columns 3 and 4, prayer books in columns 5 and 6.

We find a sizable and statistically significant effect of the leadership treatment, which increases the purchase for Shia history books by 0.086 from a baseline mean of 0.23—a 38 percent increase. We find no impact of the contact treatment, and in contrast to the economic outcomes we also do not find an impact for the combined treatment. These results show that religious leadership, in this case the imam of the local mosque, can foster greater openness to engaging with information about the beliefs of other sects. However, contact on its own or in combination with leadership, does not foster openness to religious information. By visibly

highlighting differences in ritual practice, contact in religious settings may reinforce sectarian boundaries and even trigger backlash. This dynamic likely explains why the positive impact of leadership disappears when combined with contact.

Table 4: **The Effect of Contact on Endline Shia Book Choice**

	Any Book		History Book		Prayer Book	
	(1)	(2)	(3)	(4)	(5)	(6)
Leadership	0.198***	0.174***	0.171	0.163*	0.027	0.011
	(0.030)	(0.022)	(0.116)	(0.065)	(0.105)	(0.077)
Contact	-0.159	-0.265	-0.138	-0.240**	-0.021	-0.025
	(0.145)	(0.156)	(0.076)	(0.081)	(0.107)	(0.115)
Combined	0.026	0.147	-0.052	0.053	0.078	0.094
	(0.091)	(0.123)	(0.098)	(0.080)	(0.121)	(0.095)
Strata Fixed Effects	X	X	X	X	X	X
Controls		X		X		X
Control Mean	0.394	0.394	0.242	0.242	0.152	0.152
Number of Respondents	177	176	177	176	177	176
Number of Mosques	24	24	24	24	24	24

Notes: $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. The dependent variable is the number of books about Shias (their rituals or their narration of early Islamic history) chosen by respondents at the endline. All these outcomes are based on incentivized lab-in-the-field experiments. The independent variables are the assignment of mosques to the prayer volunteer visits treatment (where volunteer worshipers are sent to mosques of the opposite sect), the mosque leader announcement treatment (where the leader of the mosque makes a religious statement about intersectarian harmony), or the combined treatment. We use robust standard errors, strata fixed effects and cluster errors at the strata level.

We further analyze the impact of our interventions on religious outcomes by leveraging the research design feature that the book choice experiment was conducted at both baseline and endline. We restrict our analysis to worshipers who did not purchase Shia religious books at baseline.[5] Since the same books were offered each time, this subgroup provides a clearer measure of the intervention's impact, isolating effects on those who had not previously

[5]An alternate specification to measure the impact of the interventions on Shia book choice is to analyze the *change* in the purchase of Shia religious books between baseline and endline. We find similar results from this specification as shown in appendix X.

engaged with Shia religious books.

Table 4, shows that the impacts of our interventions are further amplified for this subgroup. The leadership intervention increases the purchase for any Shia books by 0.174—a 45 percent increase from the baseline mean of 0.39. We also find a statistically significant backlash effect of the contact intervention on the purchase of Shia history books which reduces by 0.24 to almost zero.

In both tables 3 and 4, we find no impact on the purchase of Shia prayer books, suggesting that our interventions, whether positively or negatively, primarily influence openness to religious texts tied to core identity and belief, while interest in materials focused on outward ritual practices remains unchanged. Since sectarian divides are rooted in belief and identity, where group boundaries are strongest, this is the domain where we would expect interventions to have the most pronounced effects.

Our results highlight that the impact of leadership and contact interventions depends on how closely an outcome is tied to the core religious beliefs that define sectarian divisions. For outcomes where religious identity is irrelevant to the decision—such as hiring a plumber—leadership and contact interventions may work similarly, reinforcing each other by fostering trust and reducing social barriers. In contrast, when the outcome is directly linked to religious beliefs—such as purchasing religious history books—contact can heighten awareness of doctrinal differences, potentially triggering resistance or backlash. This difference shows that while contact interventions can promote social cohesion in some domains, their effects on outcomes tied to deeply held religious beliefs may be more complex.

4.4 Channels: Perceptions vs. Knowledge

To understand how our contact and leadership interventions may reduce prejudice and why they impact some outcome and not others we examine whether the interventions shifted respondents' factual knowledge about Shias or instead changed their perception and attitudes. This distinction aligns with the standard economic models of discrimination where statistical discrimination arises from incomplete or inaccurate information whereas preference based (or taste based) discrimination reflects distaste regardless of available information. These mechanisms likely operate differently across decision domains, and our interventions may influence them in distinct ways. To test this, we analyze survey-based outcomes, grouped into two categories: perceptions and knowledge. We find that changes in sectarian prejudice are driven by shifts in preferences, how Shias are perceived, rather than shifts in factual beliefs or doctrinal knowledge.

Our evidence here comes from survey-based measures on a sensitive and contentious topic, which are likely to be affected by social desirability and other response biases. With that important caveat, these data nonetheless offer suggestive evidence on whether change occurred through updated knowledge or altered perceptions. Our setting allows us to distinguish between these channels. If the interventions worked by providing missing information about Shias, we would expect to see improvements in respondents' knowledge of Shia practices or doctrines. If instead they reduced prejudice without correcting or updating information, we would expect to see improved attitudes without a corresponding shift in factual understanding.

Table 5 presents the results. The first panel reports changes in perceptions along four

dimensions: whether respondents view Shias as responsible, peaceful, intelligent and religious (all measured on 5-point Likert scales). The second panel reports changes in knowledge: whether respondents can correctly identify a prominent Shia scholar and whether they know how many times Shias pray per day, a common point of misunderstanding in this context.

We find evidence that some perception measured improved in response to the combined treatment. Respondents in this intervention arm were significantly more likely to describe Shias as reasonable, peaceful and intelligent, suggesting an increase in positive perceptions. For the leadership and contact interventions alone we do not see any consistent changes in perception. If anything, the contact treatment along reduced the perceptions of Shias as responsible, consistent with the possibility that contact alone may not reduce prejudice. In terms of factual knowledge we find no impact of any of the interventions on respondents likelihood of knowing a key Shia religious figures or correctly reporting the number of times Shias pray daily.

These findings indicate that our interventions changed preferences, how respondents feel about members of the out-group, without shifting their informational priors. In other words, prejudice decreased as shown by our experimental outcomes even though factual misconceptions persisted. This is particularly relevant in the case of sectarian identity, where group boundaries may not be defined by material difference or misinformation, but by deeply rooted feelings of aversion or exclusion.

These results also help explain why the same intervention yielded different effects across domains. In the economic domain, where trust is critical and doctrinal differences are less salient, improved perceptions were sufficient to shift behavior. In the religious domain, where symbolic meaning is central, persistent misconceptions may have made it harder for positive

affect alone to generate change.

Table 5: **The Effect of Contact on Perceptions**

	Perceptions				Knowledge	
	Responsible (1)	Peaceful (2)	Intelligent (3)	Religious (4)	Scholar (5)	# of Prayers (6)
Leadership	-0.072	-0.192*	-0.096	-0.110	0.005	0.111
	(0.267)	(0.077)	(0.077)	(0.158)	(0.020)	(0.133)
Contact	-0.318**	-0.209	-0.016	-0.052	-0.017	-0.149
	(0.088)	(0.133)	(0.107)	(0.150)	(0.027)	(0.125)
Combined	0.641**	0.629***	0.392**	0.352	0.032	0.166
	(0.235)	(0.121)	(0.112)	(0.185)	(0.031)	(0.219)
Strata Fixed Effects	X	X	X	X	X	X
Controls	X	X	X	X	X	X
Control Mean	3.835	3.981	3.962	4.057	0.934	0.330
Number of Respondents	293	296	296	297	299	299
Number of Mosques	24	24	24	24	24	24

Notes: $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. The first four dependent variables are whether a respondent believes members of the Shia sect to be responsible, peaceful, intelligent and religious. The variables are ordinal from 1-5: 1 for strongly disagree, 5 for strongly agree. The last two variables are binary variables for knowledge of the leading Shia scholar and for knowledge of the correct number of prayers prayed by Shias. These are all survey-based measures reported in the endline. Controls include baseline levels of each dependent variable. We use robust standard errors, strata fixed effects and cluster errors at the strata level.

5 Conclusion

We conducted a field experiment to examine whether inter-sectarian prejudice between Shias and Sunnis in Pakistan can be reduced through religious contact and messaging by sending Shia worshipers to pray visibly alongside Sunni congregants and/or having the mosque imam deliver a unity message. Sectarian divisions in Pakistan run deep, shaped by decades of political and theological conflict, and have had damaging effects on both social trust and economic activity.

We find that only the combination of contact and leadership changes behavior in mean-

ingful ways. When both treatments were delivered together, Sunni worshipers became significantly more willing to hire a Shia plumber, suggesting greater openness to economic engagement with the minority sect. In a separate outcome domain, willingness to purchase Shia religious books, we find a more nuanced pattern: leadership alone increased openness, but the combination with contact did not, and contact on its own sometimes reduced demand.

These findings underscore two central insights. First, contact and leadership interact: neither is effective in isolation, but together they produce behavioral change in domains where the social cost of engaging across sectarian lines is high. Second, this interaction is domain-specific: economic transactions and symbolic religious decisions respond differently to the same interventions, pointing to the need for more fine-grained theories of when and how intergroup interventions succeed. Our evidence suggests that these changes are not driven by improved knowledge of Shia doctrine or practices, but by shifts in preferences and perceptions.

There are important caveats. Our sample is relatively small and our setting is one where inter-sectarian tension is present but not at its most extreme. In more volatile environments, similar interventions may not be safe or feasible. Our outcomes also measure short-term behavioral change, and we cannot speak to the durability of these effects. Finally, questions of scale remain open. While one approach might involve organized, state-supported efforts to replicate our treatments through trained volunteers and coordinated messaging, a more scalable path may lie in encouraging grassroots worshiper-initiated contact, perhaps facilitated through social nudges or religious leadership itself. Future research could study the durability of such changes over time, explore settings with different religious or political dynamics,

or examine how to scale such efforts through centralized programs or more organic volunteer engagement. Despite these limitations, our study provides new insights into how sectarian prejudice may be addressed through carefully designed, contextually grounded interventions.

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6 Appendix

6.1 Robustness Tests

6.2 Vouchers

Plumber coupon: Sunni and Shia respondent