

Overcoming Inter-Sectarian Divisions through Contact and Leadership: Evidence from a Field Experiment*

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Abstract

In the developing world, significant sectarian divisions exist that remain largely unexplored in contrast to ethnic and racial divisions. We run a field experiment in 32 mosques in Pakistan and randomize different types of contact between Shias and Sunnis - the two major sectarian groups within Islam. In the first arm, we send volunteer worshipers to pray in mosques of the opposite sect (different sects pray visibly differently). In the second arm, the leader of the mosque make a religious announcement in support of inter-sectarian harmony. In the third arm, we offer both treatments. We find the combined treatment leads to lower prejudice: more individuals choose to hire discounted services of a plumber of the opposite sect and purchase discounted books about the opposite sect. We find this to be driven by preferences: the minority group is perceived as being more peaceful and reasonable, but the majority group does not have any better information about the minority.

JEL Classification: C93, D83, D91, J15, O15, Z13.

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1 Introduction

For a long time, researchers in economics and political science treated ethnic identities and inter-ethnic behavior as exogenous. This research recognized the benefits as well as the costs of ethnic diversity, with greater creativity and innovation (Jha, 2013; Marx et al., 2021; Montalvo and Reynal-Querol, 2021) potentially offset by lower cooperation, lower quality of governance, heightened risk of violence, corruption and lower growth (Alesina et al., 1999; Habyarimana et al., 2009; Fearon and Laitin, 2003; Easterly and Levine, 1997; Garcia and Reynal-Querol, 2005). It was believed that ethnic diversity could only work under certain institutional conditions (Alesina and La Ferrara, 2005)¹.

However, more recently social scientists have started to explore whether contact between different groups can create unity and reduce the costs of diversity. This is the founding principle of nation states: to reduce or eliminate ethnic, religious or linguistic cleavages (Assouad, 2020; Bazzi et al., 2019; Blouin and Mukand, 2019). If ethnic divisions could be lowered, societies could reap the benefits of ethnic diversity without paying the associated substantial costs. This is a challenging task because culture tends to be quite persistent (Giuliano and Nunn, 2021).

In this paper, we explore another element of identity that has been comparatively overlooked: sectarian identities. These identities hold great meaning in many developing countries, including the sectarian division of our interest: the Shia-Sunni divide within Islam². Around 15 percent of Muslims globally are Shias (most of the rest are Sunnis) with large numbers living together in countries like India, Iraq, Pakistan and Syria. Due to competition between Saudi Arabia and Iran, this divide has attained even greater significance due to the potential for violent conflict. This sectarian divide differs from ethnicity, caste and race in multiple ways. First, when sectarian divisions exists, they relegate ethnic or racial divisions to lower importance. Further, unlike castes in South Asia, sectarian affiliation has no connection to economic activity: Shias and Sunnis do not specialize in a particular sector

¹ In their model, ethnic diversity is beneficial only at higher levels of development because less developed societies lack diversified production process where skill complementarities nor do they have institutional features to better cope with the conflict intrinsic in diversity.

²While we focus on this particular sectarian divide, other important sectarian divides such as between Catholics and Protestants have been important historically but also in the past century in places such as Ireland.

nor are they from one particular income group. Third, while sectarian identities can be a source of division, members of both sects are still part of one overarching religion to which they adhere, which can be a source of unity.

Today, substantial Shias and Sunnis hold incorrect beliefs about the religiosity of the other group. The majoritarian Sunni sect holds extreme views about Shias to the extent that thirty-five percent of Sunni respondents say that they do not consider Shias to be Muslims ([Kalin and Siddiqui, 2014](#)). One reason for this belief is the Sunnis' belief that Shias either do not pray (and thus are no Muslims) or that they pray incorrectly (and thus are not pious Muslims). These beliefs about the observance of a particular religious ritual matter, as formal daily prayers are of great importance for Muslims.³ Hence, incorrect beliefs about the performance of rituals can lead to strongly held discriminatory behavior. In our baseline data, 78 percent of Sunnis had incorrect beliefs about the number of prayers for Shias.

To understand whether sectarian divisions can be reduced, we conduct a field experiment to exogenously create contact between mosque-going Shias and Sunnis in Pakistan. We assign three treatments across 32 mosques with 428 regular worshipers where 23 mosques belonged to the majoritarian Sunni sect and 9 to the minority Shia sect.

In the first treatment arm implemented in five mosques, we send trained volunteer worshipers (equal to 20 percent of the worshipers in the host mosque) to mosques of the opposite sect once a day for twelve days, thus exposing "host" worshipers to the opposite sect. The volunteers' different sect is clear because both sects pray in visibly different manners (the act of praying involves physical movement). The presence and actions of the minority group are also easily visible because the number of worshipers during daily prayers is around twelve people while we always send a few volunteers to each mosque. We carefully trained the volunteer worshipers so that they would not engage in any additional activity.

In the second treatment arm implemented in ten mosques, we have the leader of the mosque, the Imam, deliver a message of inter-sectarian harmony shortly before the com-

³The way a typical Muslim prayer, for both Shias and Sunnis, is conducted is with takbir (formal start of the prayer), qayyam (recitation of Quran while standing), rukku (bowing down) and sujud (prostration). The only difference between Shia and Sunni prayers is in the second component - qayyam. While standing, Sunni hold both hands on bellies and Shia leave them open which creates physical observable difference between the two sects prayers.

mencement of prayers. This announcement includes a simple verse (in Arabic and its translation in Urdu) from the holy book of Muslims, both Sunnis and Shias, the Quran: “Hold fast together to the cable of Allah and be not divided” (Surah Al-Imran Ayat 103 (3:103 Quran)). This is a famous verse from the Quran that is well known and focuses on unity and firmness in belief in Allah among Muslims and not be divided into groups. In the third treatment arm implemented in six mosques, we combine our two treatments.

We conduct the experiment in Haripur district, Pakistan. Haripur is in North West Pakistan, which has been affected substantially by the War on Terror since 2002, including a wave of terrorism against the Shias. Pakistan is particularly relevant because it has the world’s largest population of Muslims after Indonesia and the world’s largest population of Shias after Iran. The Shia-Sunni relationship has been difficult since the 1980s when the Iranian revolution happened and both Saudi Arabia and Iran waged a proxy war against each other in Pakistan, which led to a wave of terrorism against the Shias starting in the 1990s. Sunnis, the majoritarian sect, continue to hold discriminatory beliefs about Shias. Less than four percent of Sunnis express some level of agreement with statements about openness to sectarian intermarriage and support to the other side if one’s community initiates sectarian violence ([Kalin and Siddiqui, 2014](#)).

Our first set of findings considers our real world economic activity experiment in which we offer discounted vouchers for plumbing services from two plumbers whose names are clearly Shia and Sunni. We find economically and statistically significant effects for our combined treatment which increases demand for a plumber of the opposite sect by 0.18 percentage points against a mean control group demand of 0.153 percentage points. This behavior is driven by the majoritarian sect, Sunnis, as we observe a substantial reduction in demand for Sunni plumbers. It is important to note that Shias and Sunnis do not differ on any other metric including competence for plumbing. Our survey measures validate these results. We find the combined treatment leads to greater openness to engaging in business with and hiring members of the opposite sect. These results are robust to us dropping a random part of our sample (proportionally from each treatment arm), to running regressions with and without controls and are not driven by any outliers.

Further, we find similar effects when we offer our respondents to buy discounted books

about their own or the opposite sect. We offer a voucher for two books each from both sects. One book is about the history of the prophet and early Islam and the other book about prayers for each sect. We find that our combined treatment leads to a 0.258 percentage point reduction in demand for books about Sunnis. This demand is coming from an increase in books about Shia rituals, not Shia history.

We believe both these results to be significant. Many economic activities are offered to people within your network and kin in developing countries and the nature of plumbing services is that someone is invited to work at home - which exhibits a particular amount of trust in this person in this cultural context ([Beaman, 2016](#); [Dhillon and Afridi, 2022](#)). Hence, it is a decision with real consequences. It requires the participant to expend their time and take the risk of low quality work that could increase future repair costs. The purchase of books signals a willingness to learn about the opposite sect. The voucher amounts are small but significant, thus we do not expect participants to waste this money.

We find that our results are driven by a change in preferences rather than information about the minority sect. We show that in response to our combined treatment, Sunnis are more likely to trust Shias and have better perceptions about their personalities such as reasonableness and peacefulness. At the same time, no change occurs in their knowledge such as recognition of names of the opposite sect, the number of prayers offered by Shias, or knowledge about a leading Shia scholar.

Finally, we show that there is substantial heterogeneity driven by conservativeness. This is divided along two lines. First, when it comes to group membership (we exploit sub-sects within Sunni Islam who like or dislike Shias), the effect of our treatment is negated. Being part of a sub-sect that is vehemently anti-Shia means our treatment is ineffectiveness. However, when it comes to individual level conservativeness and piety, which we measure in an objective manner through enumerator observance, we find that more conservative individuals are less discriminatory as a result of our intervention.

We explore the impact of contact motivated by the “contact hypothesis” ([Allport et al., 1954](#)) about how certain types of interaction between groups can reduce prejudice, with the effects dependent on having common goals, equal status in a particular situation, intergroup cooperation and the support of authorities, law or custom. While [Allport et al. \(1954\)](#)’s paper

led to a huge empirical literature by social psychologists, we still lack a deep understanding of what types of contact are useful and under which conditions contact lowers prejudice (Paluck et al., 2019). Paluck et al. (2019)'s reviews 418 experiments on the contact hypothesis and finds that only 27 studies randomized contact. Most of the reviewed work focuses on children or young adults, uses self-reported surveys, and explores ethnic or racial prejudice, which is the predominant concern in the country where these studies usually take place - the USA.

We contribute to this literature in several ways. First, we are the first to systematically test for separate and combined effects of collaborative contact and leadership (Paluck et al., 2019), showing the importance of both being used in conjunction. Previous research often tested one type of contact including Boisjoly et al. (2006), Enos (2014), Dahl et al. (2021), Scacco and Warren (2018), Corno et al. (2022), Schindler and Westcott (2021), Rao (2019). For example, in contact focused on religions, Scacco and Warren (2018) randomizes educational training for sixteen weeks between Christians and Muslims but finds no changes in prejudice, though mixed class subjects discriminate significantly less against out-group members than subjects in homogeneous class groups. Mousa (2020) complements it by showing evidence for the positive effects of collaborative contact in soccer leagues in a postconflict setting in Iraq between Muslims and Christians, with the added advantage of longer-term outcome measurement. An exception 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 explore inter-sectarian differences which until now have received little attention in the academic literature. This is an source of communal division not only due to its economic and political importance, but also because inter-sectarian groups retain a common source of belief which can be a driver of cohesion. Third, a lot of the previous work does not conduct baseline data collection, which is needed to understand how the contact created by the researchers interacts on top of daily societal interaction and to explore treatment heterogeneity based on citizens' existing beliefs.

This paper also adds to a literature on understanding how culture and religion shapes 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), particularly exploring the role religious authorities play (Clingingsmith et al., 2009; Bassi and Rasul, 2017; Bhalotra et al., 2021).

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

2 Shia and Sunnis in Pakistan

The Shia-Sunni division began just a few decades after the advent of Islam, with theological differences becoming larger over time. In modern times, the relationship between Shias and Sunnis has worsened substantially due to proxy wars fought between Saudi Arabia and Iran, which led both countries to support extremist elements abroad through charitable funding and ideological propaganda, which eventually led to a wave of terrorism in countries such as Pakistan. The propaganda created two groups that hold at least very exclusionary beliefs and preferences, sometimes not even seeing the other group as being Muslim, as well as more extreme beliefs that support killing each other. The support for more extreme actions is partially driven by incorrect beliefs propagated by Saudi Arabia and Iran: that the other sect does not follow Islamic religious rituals and thus are either bad Muslims who should be looked down upon or not Muslim at all. As the offering of daily prayers is one of the most important Islamic rituals (for both sects), incorrect beliefs exist on this question too (Davis 2007). It is important to note that while both sects daily prayers have the same content (which is read in silence), the precise physical movements differ, from which one can easily infer the sect of the worshiper. Our experiment exploits the existence of incorrect beliefs about the religiosity of the other group, the importance of prayer to both sects and the observable nature of the difference in prayer movements to create contact between the two groups and provide information about the religiosity of the other sect. It is important to note that Shias and Sunnis do not differ on any other important and relevant characteristic such as ethnicity.

EXPERIMENTAL TIMELINE

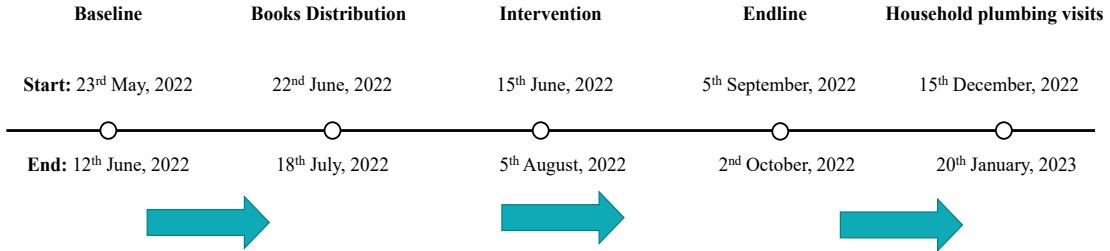


Figure 1: Experimental Timeline

3 Experimental Design

We explain below our sample, treatments and data collection that took place between May 2022 and February 2023.

3.1 Sample

We conducted the experiment in Haripur district, which is one of the 34 districts of the third largest province of Pakistan, Kyber Pakhtunkhawa (KP), with a population of 1,001,515. KP is in North West Pakistan along the Afghan border. Due to its proximity to Afghanistan, it was the most affected province in the War on Terror that started in 2002, with the Shia being a particular target of terrorist organizations. This unfortunate violent history makes KP particularly relevant to our question of interest. However, Haripur was one of the safer districts in KP. Hence, Haripur has been relatively calm in terms of sectarian terrorism.

We selected 32 mosques for our experiment from ten different towns and villages in Haripur, of which 23 mosques belong to the majoritarian Sunni sect and 9 to the minority Shia sect. We surveyed 423 regular worshipers at baseline and endline.⁴ Our sample is 71 percent Sunni and 29 percent Shia.

⁴Our baseline sample size is 457, however, we were not able to conduct endline data collection with 30 respondents. We compare the attrited group to the non-attrited group in the appendix and show that the two groups do not differ in any visible characteristic.

In Figure 3.1, we show a map with locations of our sampled mosques.

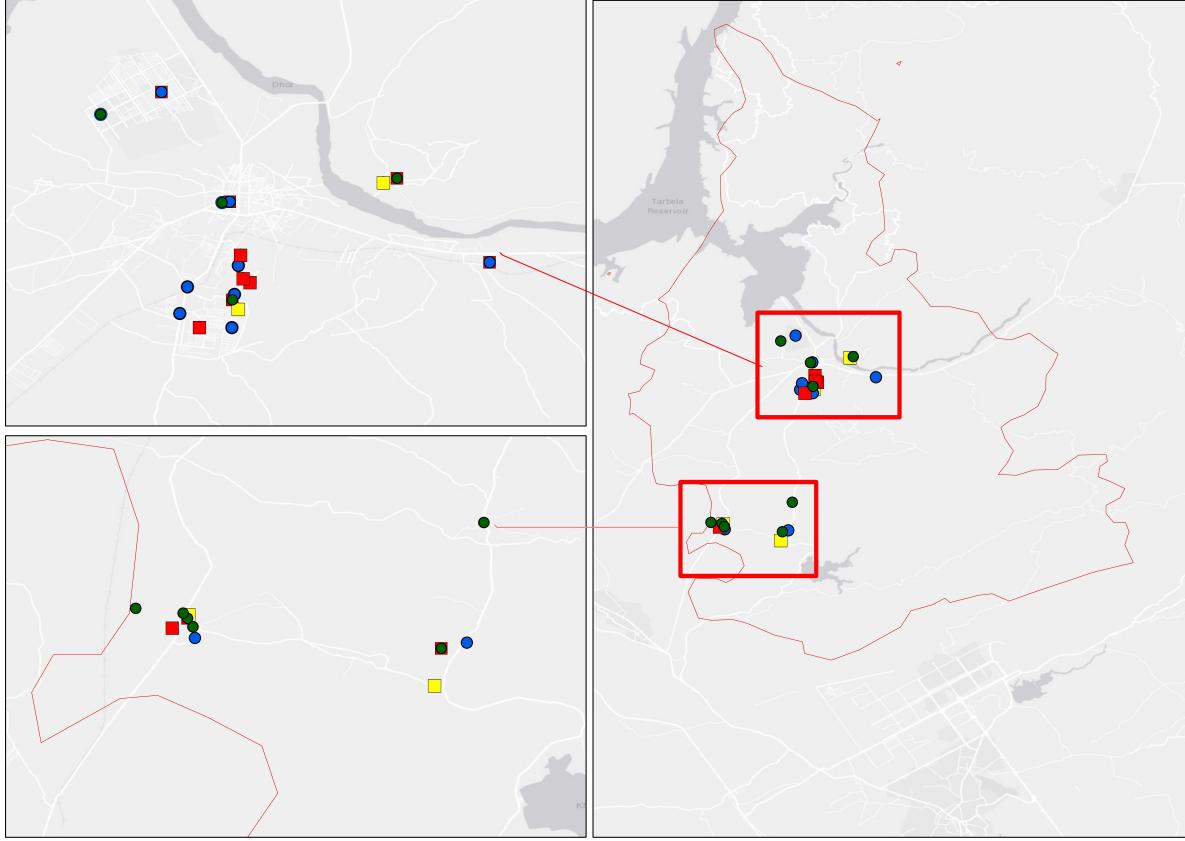


Figure 2: A map of Haripur with mosque locations. A blue dot is control, a green dot prayer volunteers only, a yellow square announcement only, and red square combined treatment.

We implement three treatment arms: one in which we send volunteer worshipers to pray in the mosque of the opposite sect, one in which the leader of the mosque makes an announcement in favour of religious harmony and one in which we offer both treatments. We randomized mosques and stratified based on age, education, income, religiosity and beliefs about Shias and Sunnis⁵. Below, we show a balance table that confirms that we correctly randomized our sample and that our respondents have similar characteristics across all treatment groups.

We conducted a baseline survey to understand the status-quo inter-sectarian relationships. The average age of our respondents is 40 years with the youngest being 21 years old and the oldest being 72 years old. (Hence, we believe we have a very good mix because one

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Table 1: Balance Table

	Age	Marital Status	Education, Family	Income,	Employment	Wife, Same Sect	Listen Sermons	Family Prayers	Business, Opp Sect	Trust, Opp Sect
Announcement Only (A)	37.111 (4.474)	1.757 (0.097)	6.406 (0.245)	1.966 (0.287)	1.906 (0.314)	0.936 (0.049)	0.886 (0.070)	2.210 (0.255)	3.891 (0.164)	3.870 (0.229)
Prayer Volunteers Only (B)	38.602 (3.923)	1.849 (0.060)	6.198 (0.144)	2.058 (0.243)	2.260 (0.326)	0.925 (0.050)	0.834 (0.066)	2.172 (0.181)	3.919 (0.133)	3.918 (0.199)
Announcement and Volunteers Both (C)	39.593 (3.640)	1.863 (0.063)	6.299 (0.150)	2.310 (0.304)	2.374 (0.351)	0.915 (0.056)	0.777 (0.080)	1.982 (0.183)	3.974 (0.160)	3.999 (0.184)
Control (D)	38.628 (2.680)	1.772 (0.037)	6.150 (0.105)	2.385 (0.157)	2.177 (0.245)	0.959 (0.039)	0.845 (0.060)	2.261 (0.105)	4.012 (0.107)	4.083 (0.131)
Hypothesis tests p-values										
Joint orthogonality p-value(A=B=C=D)	0.86	0.33	0.51	0.20	0.38	0.58	0.23	0.34	0.58	0.51
A-D=0	0.67	0.87	0.26	0.10	0.16	0.43	0.26	0.83	0.34	0.26
B-D=0	0.99	0.15	0.58	0.14	0.67	0.41	0.71	0.61	0.30	0.21
C-D=0	0.67	0.10	0.17	0.79	0.41	0.30	0.20	0.10	0.76	0.47
Number of Regular Worshipers	427	428	428	423	427	327	428	428	428	427

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. This table shows balance for the full sample of 428 worshipers. The variable age is measured in years. The variable marital status is 1 for single, 2 married, 3 for divorced/separated and 4 for widowed. The variable family education is the highest level of education in the family: 1 for never attended school, 2 for secondary school, 3 for a 10th grade exam, 4 for high school diploma, 5 for undergraduate degree, 6 for a graduate degree, and 7 for any even higher degree. The variable income is 1 for income between 15,000-25,000, 2 for 25,001-35,000, 3 for 35,001-50,000 and 4 for higher than 50,000. The employment variable is 1 for a full-time job, 2 for a part-time job, 3 for temp/contract work, 4 for self-employed, 5 for no idea and 6 for retired. The variable wife opposite sect is a binary variable which is 1 if the wife of the respondent is of the same sect. The variable listen sermons is about whether the respondent attends communal Friday prayers (one weekly communal prayer in Islam) and listening to the sermon (which requires time). It is a binary variable which is 1 for the respondent attends the sermon, 0 otherwise. The variable family prayers is about how many people from the respondent's family pray at the mosque: 1 for none, 2 for 1 person, 2 for 2 people and 3 for more. The variable business opposite sect is about willingness to do business with members of the opposite sect in a 1-5 range with 1 meaning very bad and 5 meaning very good. The variable trust in the opposite sect is a general trust question with a 1-5 range with 1 meaning very bad and 5 meaning very good. We use robust standard errors and block fixed effects.

may wonder that mosques only attract an older and very specific generation and age can be a mediating effect for conservativeness and discriminatory behavior.)

Around 10 percent of our sample has education at or less than secondary school. Around the same proportion of our sample has education until IGCSEs, high school diploma and undergraduate degrees. Only around 7 percent earn more than the median wage, with around 39 percent earning around the minimum wage. Most of our sample is internet savvy and uses internet on a daily basis.

All but 5 percent are married to spouses of the same sect. However, more than 85 percent of the sample knows someone from the opposite sect. This knowledge mostly comes from friends, though 29 percent still do not have a friend of the opposite sect. These friendships mostly occur at the workplace (45 percent).

In terms of knowledge about the opposite sect, nearly everyone is aware that physical gestures are different for opposite sect prayers (81 percent). Most Sunni (78 percent) have wrong information about the number of prayers for Shias while only 14 percent of Shias are wrong about the number of Sunni prayers. When it comes to trust, only 11 percent Sunni respondents strongly trust the Shia, with 35 percent indifferent. As expected, Shias, the minority group, are much more trusting with 29 percent showing high trust. There are

strongly held negative beliefs in terms of arrogance (38 percent think members of the opposite sect are arrogant), about them being fanatical (44 percent), patriotic (12 percent disagree and 21 neither agree nor disagree and 6 percent say nothing), religious (14 percent disagree, 30 percent neither agree nor disagree and 7 percent don't want to answer). Hence, substantial negative beliefs exist about the other group. All these variables are measured using a 1-5 Likert scale. We provide more detailed tables and graphics with summary statistics and comparisons between Shias and Sunnis in Section 6.4.

We have three treatment and one pure control arms. Our first treatment is a somewhat standard information treatment, where the content and information provider both have religious authority. In this treatment, the leader of the mosque, the Imam, delivers a message of harmony between different groups shortly before the commencement of prayers during the second last prayer of the day. The delivered message is a simple verse from the Quran (the holy book of all Muslims - both Sunnis and Shias): "Hold fast together to the cable of Allah and be not divided." This is a famous verse from the Quran that focuses on unity and firmness in belief in Allah (god) among Muslims and for them not to be divided into groups.

In our second treatment arm, we send trained volunteer worshipers to mosques of the other sect. Thus the volunteers expose the local worshipers to the other sect simply through their presence. They are trained to not initiate any conversation, or engage in any other activity, other than acting like any normal worshiper (pray in the mosque and leave). We send two to three volunteers every day over a twelve-day period during the second last prayer of the day to every mosque. This is the most frequented prayer out of the five daily prayers as it is around sunset and thus right after work. The volunteers' presence is thus visible because (i) except congregational prayers on Friday, the number of worshipers in mosques are small (an average of 13.7 in our sample) and (ii) there are clear, known, visible differences in how both sects pray (the act of praying involves physical movement).

This interaction inside a mosque is very natural. There is no legal, moral, or religious reason for the sects not to pray in the same mosque and nobody stopped our volunteers from praying in these mosques. There is no forced interaction between the sects. The information a visit of the opposite sect provides to the usual worshipers is subtle; it is different from direct information and occurs inside a religious, sacred place.

We believe that of the two standalone treatments, the second treatment is the more intense one. The home mosque worshipers themselves see members of the opposite sect pray alongside them. However, while the number of worshipers is very small (albeit in a small congregation), this has the potential to create some negative sentiments because the home worshipers may see this as an unexplained intrusion. In practice, at times our field team did see worshipers wonder what was happening, but it never led to any problems.

The first treatment is comparatively less intense. A religious leader in a local religious institution, the Imam, uses a revered, authoritative religious book to call for unity. However, but the verse of the Quran that the Imam recites does not directly mention Shias or Sunnis. Thus it could either be interpreted as a call for unity among all Muslims in general, or within different Sunni sects.

In our third treatment group, we combined our first and second treatments, which makes it our strongest and most direct treatment. It exposes worshipers to worshipers the other sect, but at the same time it uses religious leadership to see this contact as benevolent, which makes the exposure a positive experience. By itself, being exposed to members of the out-group can lead to higher discrimination ([Enos, 2014](#)) and our message of unity by leaders could be seen as too generic. However, together, these form a more potent, clear call to unity between the sects. Our final fourth arm is a pure control group.

3.2 Data Collection and Variables

First, we measured the number of mosque-goers who frequently come to mosque to offer the Maghrib prayer. Then, based on these numbers, we invited those mosque-goers to be part of our survey.

We collect data at baseline and endline with 423 worshipers (71 percent Sunni and 29 percent Shia) on demographics, religiosity, beliefs and preferences about their own and the opposite sect. Further, we had enumerators collect visible information about religiosity from clothes and accessories worn by the worshipers.

3.2.1 Outcome Variables

We conduct two incentivized experiments to measure the respondents' beliefs and preferences for the opposite sect and their economic interaction with them.

First, at baseline and endline, we offer every respondent a voucher to buy one of four (heavily discounted) books. We provided discounts of 80 percent on the purchase of a book about the opposite sect and 20 percent for a book on one's own sect. We show an English version of the voucher below and original versions in the appendix. The top row in both conditions shows Sunni books with the discount percentage (retail prices are PKR 80 and PKR 180 respectively). The bottom row in both conditions shows Shia books with the discount percentage (retail prices are PKR 120 and PKR 135 respectively). The voucher is worth PKR 100. We carefully selected these four books in consultation with a religious scholar who is an authority on the subject. We selected two books each from each sect about daily ritual prayers and their narration of early Islamic history.

At endline, we also offer every respondent a voucher worth PKR 1,000 for plumbing services. The voucher offers services of two plumbers who are named on the voucher. The names are clearly Shia or Sunni names and the respondents have to choose one of the two plumbers⁶. Eventually, 100 respondents were randomly chosen to be provided the plumbing services. This was done in front of respondents. We arranged for the plumber to carry out repairs in the respondent's house.

The plumbing job can be whatever the chosen respondent requires and we do not believe this to hold negative connotations. The use of plumbing services of the opposite sect is an important signal of openness for two reasons. First, in many developing countries, kin networks matter greatly (Dhillon and Afridi, 2022; Beaman, 2016). It is highly usual to hire workers and service members from your own caste, religion or linguistic group (whichever identity is most salient). Hence, hiring members outside your network would be an important signal of openness. Second, plumbing services at home are not just a short, impersonal purchase made at a small kiosk/local grocery store. This is an invitation to come inside

⁶There are certain personalities in Islamic history that have over time become very partisan, e.g. a caliph who fought against and killed the person that Shia today revere. Thus, this caliph's name, while still used by Sunnis, is never used by Shias.

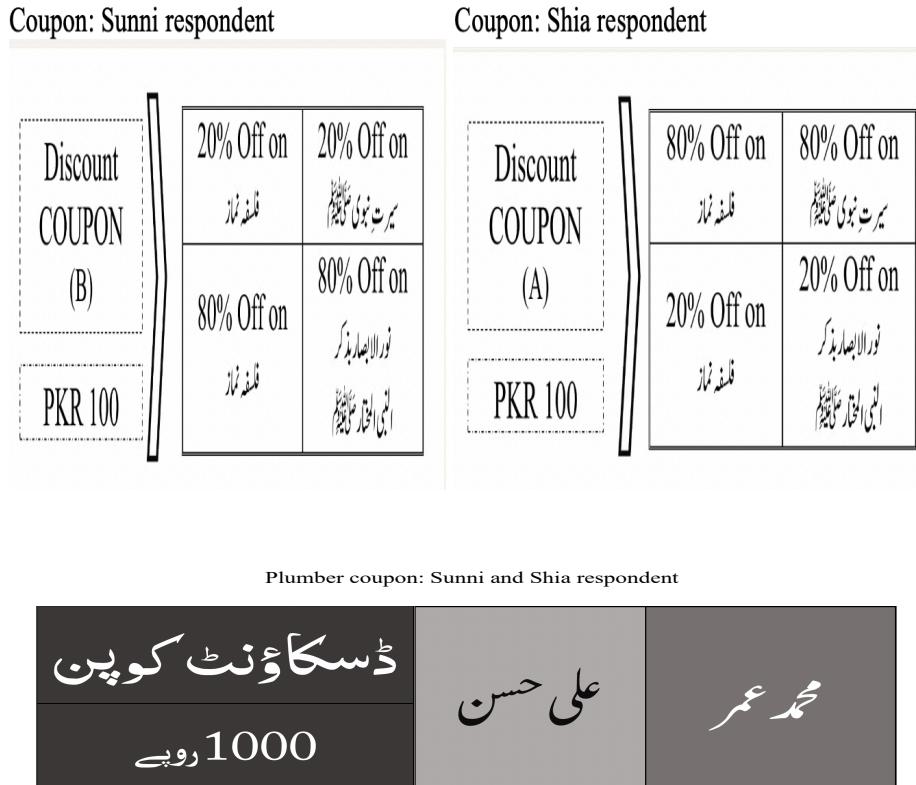


Figure 3: Book Voucher: Four discounted books are offered - two from each sect. Plumber Voucher: One obviously Sunni and Shia name each is visible in this voucher.

one's home, where one's family resides, and hence it is something that is not easily done in South Asian culture.

Beyond the lab-in-the-field experiments, we use some survey-based measures as outcomes. One outcome is about beliefs of respondents about entering into business with Shias and the second about openness to hiring Shias. The first outcome is an answer to the following question: "What do you think about being entering into business with Shias?," while the second is an answer to the following survey question: "What do you think about recruiting Shia/Sunni workers?" The answers can range from very bad to very good in a five-point scale.

3.2.2 Other Variables

In our heterogeneity analysis, we use different measures of conservativeness.

For the first measure of conservativeness, we exploit deeper groupings within the Sunni sect: Deobandi, Ahle Hadith and Barelvi. These three sub-groups make up all Sunnis within Pakistan. However, there are substantial differences between them. Deobandis and Ahle Hadith are much more conservative compared to Barelvis. In particular, they are much more anti-Shia. This difference is quite stark and visible in how the sub-sects deal with Shias. We use this division to create a binary variable which is 1 if a respondent is from either of the two conservative sub-groups, and 0 otherwise.

For the second and third measure of conservativeness, we use objective measure noted by the enumerators about each respondents' clothing choices. First, they noted whether an individual wears a ring. This is a religiously mandated ornament which is worn only by very religious people. The last prophet of Islam is known to have worn a ring and among more religious Muslims is considered a special piece of adornment. Second, we measure whether an individual wears their trousers above the ankle. This is also a religiously mandated choice which is followed only by very religious people. In many religious narrations, it is seen as a sign of arrogance to wear clothes below the ankle, partially driven by a resistance to the elite of that time who wore long clothes that would get dirtied as they trailed the wearer and thus made waste. Both these are true for both Shias and Sunnis. We have a binary variable which is 1 if the ring is worn (second conservativeness variable) or trousers are worn above the ankle (third conservativeness variable), and 0 otherwise.

4 Results

4.1 Econometric Specification

We estimate the following regression specification to analyse the effect of our treatments on multiple outcomes related to beliefs and behavior of members of the opposite sect:

$$Y_i = \alpha + \beta_1(Announcement)_i + \beta_2(Volunteers)_i + \beta_3(Combined)_i + \delta\delta_{\delta_i + \epsilon_i, (1)}$$

where Y_i is the outcome of interest for individual i . In some regressions, this is the endline variable, and in others it is the change from baseline to endline. All our analysis is at the individual level. Here, $Treatment_i$ is a binary variable for each of our three treatments. We include strata fixed effects. We cluster standard errors at the strata level.

Further, in our main tables, we show regressions with we sequentially add controls, and restrict our sample to the sectarian group of interest: the majoritarian Sunni sect. We also show results in the appendix where we calculate standard errors using the bootstrap, randomization inference, and make corrections for multiple hypothesis testing.

Finally, we also undertake heterogeneity analysis focusing on conservativeness and estimate the following equation:

$$\begin{aligned} Y_i = & \alpha + \beta_1(Announcement)_i + \beta_2(Volunteers)_i + \beta_3(Combined)_i \\ & + \beta_4(Announcement)_i * (Conservativeness)_i + \beta_5(Volunteers)_i * (Conservativeness)_i \\ & + \beta_6(Combined)_i * (Conservativeness)_i + (Block Fixed Effects)_i + \epsilon_i, \end{aligned} \quad (2)$$

4.2 Results

4.2.1 Plumber Choices

Our first result is for the incentivized, real-world plumbing experiment in which we offer discounted plumbing services from two plumbers of clearly different sects (the sect is known from plumber names).

In the first three columns of Table 8, we show the effect of information and contact on opposite-sect plumber choice. Our outcome variable is a binary variable which is 1 when any respondent, either from the Sunni (majoritarian) sect or the Shia (minority) sect, chooses discounted plumbing services from a member of the opposite sect and 0 otherwise. We find economically and statistically significant effects for our combined announcement and

volunteer treatment which increases demand for a plumber of the opposite sect by 0.18 points against a mean control group demand of 0.153 (column). This is a substantial increase. Our results are robust with and without controls. In the last three columns, we try to understand which sect is driving this behavior. Our outcome variable is a binary variable which is 1 if a Sunni plumber's discounted services are chosen by respondents of any sect and 0 otherwise. We can see a substantial reduction in demand for Sunni plumbers which indicates that Sunnis reduced their demand for their own sect substantially and chose Shia plumbers.

Table 2: The Effect of Contact on Plumber Choices

	Plumber, Opp Sect			Plumber, Sunni		
Information Treatment	-0.048 (0.034)	-0.074 (0.052)	-0.085 (0.056)	0.095*** (0.023)	0.133*** (0.034)	0.146** (0.040)
Contact Treatment	0.009 (0.020)	0.017 (0.023)	0.042 (0.041)	0.005 (0.033)	-0.011 (0.048)	-0.066 (0.110)
Combined Treatment	0.160** (0.064)	0.180** (0.065)	0.176** (0.065)	-0.372*** (0.078)	-0.376*** (0.058)	-0.343*** (0.067)
Control Mean	0.153	0.153	0.153	0.435	0.435	0.435
Number of Respondents	428	423	299	428	423	299
Number of Mosques	32	32	32	32	32	32
Strata Fixed Effects	X	X	X	X	X	X
Controls		X	X		X	X
Sample	Full	Full	Sunni Only	Full	Full	Sunni Only

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) a binary variable which is 1 when any respondent, either from the Sunni (majoritarian) sect or the Shia (minority) sect, chooses discounted plumbing services from a member of the opposite sect (the names of the plumbers allow for clear sectarian identification) and 0 otherwise and (ii) a binary variable which is 1 if a Sunni plumber's discounted services are chosen by respondents of any sect and 0 otherwise. Both 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 inter-sectarian harmony), or the combined treatment. We use robust standard errors, strata fixed effects and cluster errors at the strata level.

In Table 22, we examine how contact affects beliefs about business engagement and hiring the opposite sect using our survey. Our goal is to test whether our plumber choice experiment is reflected in economic choices in our survey measures as well. In the first column, we show that our combined intervention leads to a higher willingness to enter into business with Shias with a large 0.344 percentage point increase over a control mean of 3.531 percentage points. Columns 2 and 3 show our results are robust. In columns 4-6, we show our combined intervention leads to a higher willingness to hire Shia workers. While our control group shows a negative change from baseline to endline, but our combined treatment group increases willingness to hire a member of the opposite sect by 0.240 points.

Table 3: The Effect of Contact on Economic Interactions

	Business, Shias			Hiring, Change		
Information Treatment	0.083** (0.034)	0.057** (0.020)	0.089** (0.022)	0.011 (0.115)	0.012 (0.097)	0.067 (0.105)
Contact Treatment	-0.002 (0.167)	-0.009 (0.149)	0.201 (0.152)	-0.034 (0.093)	-0.021 (0.102)	0.134 (0.112)
Combined Treatment	0.317* (0.154)	0.344** (0.141)	0.209 (0.142)	0.282* (0.126)	0.240* (0.113)	0.109 (0.124)
Control Mean	3.531	3.531	3.531	-0.107	-0.107	-0.107
Number of Respondents	428	428	302	426	421	297
Number of Mosques	32	32	32	32	32	32
Strata Fixed Effects	X	X	X	X	X	X
Controls			X		X	X
Sample	Full	Full	Sunni Only	Full	Full	Sunni Only

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) beliefs of respondents about entering into business with Shias and (ii) the change in openness to hiring a member of the opposite sect at the endline compared to baseline. These are survey-based measures. The first outcome is an answer to the following survey question: “What do you think about being entering into business with Shias?,” while the second outcome is an answer to the following survey question: “What do you think about recruiting Shia/Sunni workers?” The answers can range from very bad to very good in a five-point scale. 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 inter-sectarian harmony), or the combined treatment. We use robust standard errors, strata fixed effects and cluster errors at the strata level.

4.2.2 Book Choices

Our second main result is for the incentivized, real-world book choice experiment in which we offer discounted books written from the perspective of each sect. We offer this choice to every participant both at baseline and endline. There are two books from each sect: one each of their rituals and their view of early Islamic history. The purchase of a book about the opposite sect is a non-trivial signal of interest in the opposite sect. While we cannot measure whether the books are planned to be carefully read, the voucher nonetheless offers a reasonable discount that we can expect nobody would like to waste.

In Table 10, we look at the change in the number of either of the two books about Sunnis (their rituals or their narration of early Islamic history) chosen by respondents of any sect at the endline compared to baseline. The first three columns the effect on all books, while the last three on books about history. In column 1, we observe a negative control mean indicating that our control group at endline chose fewer books about Sunnis compared to baseline, but our combined treatment leads to fewer books about Sunnis being purchased. We see the opposite effect for our prayer volunteer treatment. We believe this to be the case that in some places, the prayer volunteer may have created some sort of a backlash, which was alleviated in combination with the mosque leader announcement. Hence, the surprise appearance of the opposite sect might be helpful on its own but when guided by religious

leaders, it can support a reduction in prejudices. In column 4-6, we observe that this change is driven by a reduction in demand for books about Islamic history from a Sunni framework.

Table 4: The Effect of Contact on Book Choice

	Books, Change (Sunnis)		Books (History), Change (Sunnis)		
Information Treatment	-0.002 (0.037)	0.092 (0.051)	0.093* (0.045)	0.002 (0.055)	0.049 (0.055)
Contact Treatment	0.280** (0.113)	0.243** (0.093)	0.203* (0.091)	0.330** (0.104)	0.333** (0.091)
Combined Treatment	-0.226** (0.089)	-0.258** (0.105)	-0.244* (0.116)	-0.231** (0.085)	-0.280** (0.081)
Control Mean	-0.141	-0.141	-0.141	-0.169	-0.169
Number of Respondents	428	423	299	428	423
Number of Mosques	32	32	32	32	32
Strata Fixed Effects	X	X	X	X	X
Controls		X	X	X	X
Sample	Full	Full	Sunni Only	Full	Full
					Sunni Only

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) the change in the number of either of the two books about Sunnis (their rituals or their narration of early Islamic history) chosen by respondents of any sect at the endline compared to baseline and (ii) a binary variable which is 1 if the book chose is about history. 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 inter-sectarian harmony), or the combined treatment. We use robust standard errors, strata fixed effects and cluster errors at the strata level.

4.3 Channels

In this section, we explore what beliefs and preferences changed that led to the reduction in prejudice visible in the results above.

In Table 5, we explore show the effect contact on perceptions about reasonableness, dependability, peacefulness. We have multiple preference variables. These variables are ordinal from 1-5: 1 for strongly agree, 5 for strongly disagree, and 6 and 7 for do not know and do not want to answer. All outcomes are survey-based measures. We see that our combined treatment leads to an improvement in the beliefs held by our respondents about Shias across the three measures. We see substantial and quite similar sized effects for all belief variables. We show whether there was a change in trust in Shias. We show that our combined treatment leads to higher trust in Shias. In column 1, we show how trust in Shias changes and we find an increase of 0.156 points over a control mean of 0.045. We do not see a similar effect for trust in Sunnis.

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

	Unreasonable (1)	Dependable (2)	Peaceful (3)	Trust (4)
Information	0.387** (0.130)	-0.223*** (0.033)	-0.141** (0.057)	-0.100** (0.027)
Contact	0.274 (0.300)	-0.133 (0.279)	-0.017 (0.098)	0.034 (0.022)
Announcement and Volunteers Both	-0.848** (0.236)	0.731** (0.287)	0.459** (0.152)	0.156** (0.056)
Control Mean	4.034	2.910	3.814	0.045
Number of Respondents	423	423	423	428
Number of Mosques	32	32	32	32
Strata Fixed Effects	X	X	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are whether a respondent believes members of the opposite sect to be reasonable, dependable and peaceful at the endline compared to baseline for Shias and Sunnis respectively, and whether respondents trust the opposite sect with a 1-5 range with 1 meaning very bad and 5 meaning very good. These are survey-based measures. The variables are ordinal from 1-5: 1 for strongly agree, 5 for strongly disagree, and 6 and 7 for do not know and do not want to answer. 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 inter-sectarian harmony), or the combined treatment. We use robust standard errors, strata fixed effects and cluster errors at the strata level.

Finally, in Table 6, we show whether participants' knowledge about the opposite sect improved. We measure this in three ways: whether respondents are aware of a prominent

Shia scholar, of the number of prayers Shias pray daily and correctly identify Shia names. We can see that this was not the case. At endline, our treated respondents are no more knowledgeable than at baseline. Hence, the information set about Shias has not been affected, but their preferences have changed.

Table 6: The Effect of Contact on Knowledge of Shias

	Know Shia Scholar (1)	Know Nb, of Prayers (2)	Know, Shia Names (3)
Information	0.029 (0.027)	0.259 (0.210)	0.478 (0.289)
Contact	0.045* (0.022)	-0.264** (0.113)	-0.098 (0.174)
Announcement and Volunteers Both	-0.036 (0.035)	0.372 (0.317)	-0.543 (0.323)
Control Mean	.	.	.
Number of Mosques	427	427	427
Strata Fixed Effects	X	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) a variable which codes whether the respondent knows the leading Shia scholar, Abu Jafar, (ii) a variable which codes whether the respondent knows the number of daily prayers of the opposite sect correctly, and finally (iii) a variable which codes whether the respondent can recognise Shia names well. These are survey-based measures. We asked about eight Shia names for the last question. 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 inter-sectarian harmony), or the combined treatment. We use robust standard errors, strata fixed effects and cluster errors at the strata level.

4.4 Heterogeneity

Finally, we aim to explore how our treatment effect differs based on conservativeness. This is a fundamental driver at the group and individual level that creates resistance to positive change and is quite visible in most politically and religiously polarized societies. We use three different measures of conservativeness, which we explain in Section 3.2.

In Table 7, we are interested in the interaction of announcement and volunteer worshiper treatment with conservativeness (1 being more conservative). We use three different measures of conservativeness but conceptually divide them into two groups. First, we have a measure based on group affiliation. These are very different dynamics because groups compete for religious and political space, where theologically and politically a hard line yields gains. They are more invested in confrontational behavior. This creates greater probability of discrimination and distaste. Second, we have two measures based on personal, private conservativeness as visible based on one's clothing choices. This is personal piety, which is more associated with being a nice, responsible human being.

For the first measure, we see that when more conservative worshipers are treated it reduces demand for the opposite-sect plumber - the completely opposite result to our main finding. However, when it comes to personal piety, we see the opposite results. We see that when more conservative worshipers are treated it increases demand for the opposite-sect plumber for both respondents who wear a ring or wear high trousers.

Table 7: The Effect of Contact on Plumber Choice: Heterogeneity by Different Measures of Conservativeness

	Sub-Sects		Wearing a Ring		Wearing Short Trousers	
	Plumber, Opposite Sect (1)	Plumber, Sunni (2)	Plumber, Opposite Sect (3)	Plumber, Sunni (4)	Plumber, Opposite Sect (5)	Plumber, Sunni (6)
Annoucement	-0.108*** (0.019)	0.173*** (0.047)	-0.008 (0.088)	0.149 (0.102)	-0.046 (0.032)	0.077* (0.036)
Volunteers	0.024 (0.028)	0.040 (0.027)	0.090 (0.057)	-0.020 (0.077)	-0.001 (0.026)	0.040 (0.053)
Announcement x Volunteers	0.262*** (0.033)	-0.401*** (0.052)	-0.051 (0.139)	-0.348** (0.143)	0.104 (0.061)	-0.347*** (0.087)
Announcement x Conservative	0.204*** (0.055)	-0.118 (0.149)	-0.125 (0.077)	-0.016 (0.079)	-0.030 (0.070)	0.079 (0.100)
Volunteers x Conservative	0.008 (0.047)	-0.161 (0.095)	-0.098 (0.063)	0.010 (0.080)	0.047 (0.042)	-0.116 (0.094)
Announcement x Volunteers x Conservative	-0.307** (0.091)	0.155 (0.123)	0.410*** (0.137)	-0.061 (0.144)	0.239*** (0.058)	-0.046 (0.125)
Control Mean	0.153	0.435	0.153	0.435	0.153	0.435
Number of Respondents	423	423	423	423	423	423
Number of Mosques	32	32	32	32	32	32
Strata Fixed Effects	X	X	X	X	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) a binary variable which is 1 when any respondent, either from the Sunni (majoritarian) sect or the Shia (minority) sect, chooses discounted plumbing services from a member of the opposite sect (the names of the plumbers allow for clear sectarian identification) and 0 otherwise and (ii) a binary variable which is 1 if a Sunni plumber's discounted services are chosen by respondents of any sect and 0 otherwise. Both these outcomes are based on incentivized lab-in-the-field experiments. For the first two columns, we define conservativeness based on differences in sub-sects within Sunni Islam: two of the main sub-sects within Sunni Islam in Pakistan are substantially more conservative than the third. This variable is a binary variable which is 1 for members these two conservative sub-sects and 0 otherwise. For the second two columns, we define conservativeness based on whether a respondent wore a ring on their finger which is religiously mandated but only worn by conservative Muslims. This is a binary variable which is 1 if a member is wearing the ring and 0 otherwise. For the last two columns, we define conservativeness based on whether a respondent wore their trousers in a way that is religiously mandated. This is based on the enumerator's observations. This is a binary variable which is 1 if a member is wearing the ring and 0 otherwise. This is based on the enumerator's observations. The independent variables are 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 inter-sectarian harmony) or the combined treatment. We use block fixed effects and cluster errors at the strata level.

5 Conclusion

We conduct a field experiment to analyze the effect of contact and leadership in reducing prejudice between discordant sectarian groups in Pakistan. The Shia-Sunni division has resulted in a wave of terrorism in countries such as Pakistan and created two groups that hold at least very exclusionary beliefs and preferences, sometimes not even seeing the other group as being Muslim, as well as more extreme beliefs that support killing each other.

We explore whether such deep divisions can be healed through contact. In our field experiment, we find that when we send volunteer worshipers to mosques of the opposite sect to pray and have the leader of the mosque make an announcement in favour of unity respondents choose the services of a plumber from the opposite sect much more in the treatment group compared to the control group.

This is work in a particular context and does not yet deeply explore changes in beliefs and preferences, nor is it clear whether when scaled it, it would lead to effects of a similar magnitude.

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6 Appendix

6.1 Sunni Sub Sample Only

Table 8: The Effect of Contact on Plumber Choices (Sunni Sample)

	Plumber, Opp Sect	Plumber, Sunni
	(1)	(2)
Information	-0.085 (0.056)	0.146** (0.040)
Contact	0.042 (0.041)	-0.066 (0.110)
Announcement and Volunteers Both	0.176** (0.065)	-0.343*** (0.067)
Control Mean	0.217	0.689
Number of Respondents	299	299
Number of Mosques	24	24
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) a binary variable which is 1 when any respondent, either from the Sunni (majoritarian) sect or the Shia (minority) sect, chooses discounted plumbing services from a member of the opposite sect (the names of the plumbers allow for clear sectarian identification) and 0 otherwise and (ii) a binary variable which is 1 if a Sunni plumber's discounted services are chosen by respondents of any sect and 0 otherwise. Both 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects and cluster errors at the strata level.

Table 9: **The Effect of Contact on Economic Interactions (Sunni Sample)**

	Business, Shias (1)	Hiring Change (2)
Information	0.089** (0.022)	0.067 (0.105)
Contact	0.201 (0.152)	0.134 (0.112)
Announcement and Volunteers Both	0.209 (0.142)	0.109 (0.124)
Control Mean	3.330	-0.104
Number of Respondents	302	297
Number of Mosques	24	24
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) beliefs of respondents about entering into business with Shias and (ii) the change in openness to hiring a member of the opposite sect at the endline compared to baseline. These are survey-based measures. The first outcome is an answer to the following survey question: “What do you think about being entering into business with Shias?,” while the second outcome is an answer to the following survey question: “What do you think about recruiting Shia/Sunni workers?” The answers can range from very bad to very good in a five-point scale. 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects, and robust standard errors. We use block fixed effects and cluster errors at the strata level.

Table 10: **The Effect of Contact on Book Choice (Sunni Sample)**

	Books, Change (Sunnis) (1)	Book (History), Change (Sunnis) (2)
Information	0.093* (0.045)	0.053 (0.053)
Contact	0.203* (0.091)	0.402*** (0.049)
Announcement and Volunteers Both	-0.244* (0.116)	-0.327*** (0.030)
Control Mean	-0.123	-0.179
Number of Respondents	299	299
Number of Mosques	24	24
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) the change in the number of either of the two books about Sunnis (their rituals or their narration of early Islamic history) chosen by respondents of any sect at the endline compared to baseline and (ii) a binary variable which is 1 if the book chose is about history. 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects, and robust and bootstrapped standard errors (top and bottom respectively). We use block fixed effects and cluster errors at the strata level.

Table 11: **The Effect of Contact on Perceptions (Sunni Sample)**

	Unreasonable (1)	Dependable (2)	Peaceful (3)
Information	0.358* (0.175)	-0.197** (0.060)	-0.179*** (0.036)
Contact	-0.228 (0.322)	0.498** (0.156)	-0.211 (0.134)
Announcement and Volunteers Both	-0.506* (0.199)	0.253 (0.199)	0.592*** (0.132)
Control Mean	4.066	3.047	4.000
Number of Respondents	299	299	299
Number of Mosques	24	24	24
Strata Fixed Effects	X	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are whether a respondent believes members of the opposite sect to be reasonable, dependable and peaceful at the endline compared to baseline for Shias and Sunnis respectively. These are survey-based measures. The variables in the first column is ordinal from 1-5: 1 for strongly agree, 5 for strongly disagree, and 6 and 7 for do not know and do not want to answer. 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects, and robust and bootstrapped standard errors (top and bottom respectively). We use block fixed effects and cluster errors at the strata level.

Table 12: **The Effect of Contact on Trust (Sunni Sample)**

	Trust, Shia (1)	Trust, Sunni (2)
Information	-0.095** (0.028)	0.004 (0.004)
Contact	0.063* (0.027)	0.003 (0.006)
Announcement and Volunteers Both	0.136* (0.060)	0.011 (0.012)
Control Mean	0.075	0.000
Number of Respondents	302	302
Number of Mosques	24	24
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are whether a respondent believes members of the opposite sect to be reasonable, dependable and peaceful at the endline compared to baseline for Shias and Sunnis respectively. These are survey-based measures. The variables in the first column is ordinal from 1-5: 1 for strongly agree, 5 for strongly disagree, and 6 and 7 for do not know and do not want to answer. 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects, and robust and bootstrapped standard errors (top and bottom respectively). We use block fixed effects and cluster errors at the strata level.

Table 13: The Effect of Contact on Knowledge of Names (Sunni Sample)

	Change, Shia Names (1)	Positive Change, Shia Names (2)
Information	0.088 (0.183)	-0.080 (0.052)
Contact	-0.154 (0.294)	-0.078 (0.062)
Announcement and Volunteers Both	0.296 (0.273)	0.175* (0.085)
Control Mean	-0.491	0.123
Number of Respondents	299	299
Number of Mosques	24	24
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) a variable that is the change from baseline to endline in the names any respondent can correctly recognize as being Shia or Sunni and (ii) a binary variable which is 1 if the latter variable is positive and 0 otherwise. These are survey-based measures. We asked about eight Sunni/Shia names. 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects, and robust and bootstrapped standard errors (top and bottom respectively). We use block fixed effects and cluster errors at the strata level.

6.2 Other Results

Table 14: Plumber Business Activity: Heterogeneity by Baseline Books Choices

	Sunni Plumber	Shia Plumber	Switcher	Change Books	More Books
Annoucement	0.005 (0.121)	0.007 (0.094)	0.014 (0.095)	0.168 (0.103)	0.226** (0.105)
Volunteers	-0.024 (0.057)	0.012 (0.036)	0.006 (0.039)	0.056 (0.109)	-0.022 (0.087)
Announcement x Volunteers	-0.174 (0.156)	0.040 (0.115)	0.049 (0.115)	-0.031 (0.170)	-0.084 (0.148)
Announcement x Conservative	0.275** (0.122)	-0.166 (0.116)	-0.181 (0.118)	-0.104 (0.150)	-0.283* (0.149)
Volunteers x Conservative	0.043 (0.078)	-0.016 (0.063)	0.019 (0.070)	-0.028 (0.128)	-0.014 (0.149)
Announcement x Volunteers x Conservative	-0.450** (0.183)	0.313* (0.175)	0.275 (0.178)	0.117 (0.248)	0.042 (0.191)
Number of Mosques	423	423	423	423	423
Block Fixed Effects	X	X	X	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are whether a respondent choose a Sunni or a Shia plumber when given the opportunity to select a discounted plumbing service, whether someone changed (switched) their choice, the change in the number of books bought by Sunnis or Shias of their own sect from baseline to endline and a binary variable which is one if the change is not zero. The independent variables are assignment of mosques to the prayer volunteer visits treatment, the mosque leader announcement treatment or the combined treatment. We use block fixed effects, and robust and bootstrapped standard errors (top and bottom respectively).

Table 15: **Mosque Contact and Predictors of Switching**

	Sunni Plumber	Shia Plumber	Switcher
Own House	-0.179 (0.209)	0.237 (0.171)	0.175 (0.175)
Family Size	-0.176 (0.214)	0.251 (0.194)	0.233 (0.199)
Cost	-0.508 (0.457)	-0.440 (0.361)	-0.427 (0.365)
Control Mean	0.435	0.492	0.153
Number of Mosques	92	92	92
Block Fixed Effects	X	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are whether a respondent choose a Sunni or a Shia plumber when given the opportunity to select a discounted plumbing service and whether someone changed (switched) their choice. The independent variables are assignment of mosques to the prayer volunteer visits treatment, the mosque leader announcement treatment or the combined treatment. We use block fixed effects, and robust and bootstrapped standard errors (top and bottom respectively).

Table 16: **Mosque Contact and Predictions of Switcher**

	Own House	No. of Families	Estimated Cost
Switcher	0.014 (0.093)	0.051 (0.086)	-0.047 (0.032)
Control Mean	0.386	0.511	6.760
Number of Mosques	98	92	97
Block Fixed Effects	X	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are whether a respondent choose a Sunni or a Shia plumber when given the opportunity to select a discounted plumbing service and whether someone changed (switched) their choice. The independent variables are assignment of mosques to the prayer volunteer visits treatment, the mosque leader announcement treatment or the combined treatment. We use block fixed effects, and robust and bootstrapped standard errors (top and bottom respectively).

Table 17: The Effect of Contact on Charitable Donations

	Donations Shias (1)	Higher Donations Shias (2)
Information	0.051 (0.058)	-0.086** (0.024)
Contact	-0.359 (0.233)	-0.086 (0.059)
Announcement and Volunteers Both	0.557** (0.172)	0.289*** (0.059)
Control Mean	1.392	0.186
Number of Respondents	419	423
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) the amount of charitable donation in total at the endline to Shia mosques, (ii) a binary variable which is 1 when the change in charitable donations to Shia mosques at endline compared to baseline is strictly positive, i.e. whether there was an increase in charitable donations at endline. These are survey-based measures. The charity variable is an ordinal variable from 1-5: 1 for a PKR 100-500, 2 for a PKR 500-1000, 3 for a PKR 1000-2500, 4 for a PKR 2500-5000 and 5 for a PKR 5000+ donation. 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects and cluster errors at the strata level.

6.3 Robustness Tests

6.3.1 Different Standard Errors

Table 18: **The Effect of Contact on Plumber Choices**

	Plumber, Opp Sect	Plumber, Sunni
	(1)	(2)
Information	-0.074 [0.071]	0.133*** [0.079]
Contact	0.017 [0.043]	-0.011 [0.047]
Announcement and Volunteers Both	0.180** [0.095]	-0.376*** [0.100]
Control Mean	0.153	0.435
Number of Respondents	423	423
Number of Mosques	32	32
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) a binary variable which is 1 when any respondent, either from the Sunni (majoritarian) sect or the Shia (minority) sect, chooses discounted plumbing services from a member of the opposite sect (the names of the plumbers allow for clear sectarian identification) and 0 otherwise and (ii) a binary variable which is 1 if a Sunni plumber's discounted services are chosen by respondents of any sect and 0 otherwise. Both 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects, bootstrapped standard errors and cluster errors at the strata level.

Table 19: **The Effect of Contact on Plumber Choices (MHT Corrected)**

	Plumber, Opp Sect	Plumber, Sunni
	(1)	(2)
Information	-0.074 [0.433]	0.133*** [0.069]
Contact	0.017 [0.455]	-0.011 [0.761]
Announcement and Volunteers Both	0.180** [0.150]	-0.376*** [0.012]
Control Mean	0.153	0.435
Number of Respondents	423	423
Number of Mosques	32	32
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) a binary variable which is 1 when any respondent, either from the Sunni (majoritarian) sect or the Shia (minority) sect, chooses discounted plumbing services from a member of the opposite sect (the names of the plumbers allow for clear sectarian identification) and 0 otherwise and (ii) a binary variable which is 1 if a Sunni plumber's discounted services are chosen by respondents of any sect and 0 otherwise. Both 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects, bootstrapped standard errors and cluster errors at the strata level. We correct for multiple hypothesis testing using [Romano and Wolf \(2005\)](#).

Table 20: **The Effect of Contact on Plumber Choices (RI)**

	Plumber, Opp Sect	Plumber, Sunni
	(1)	(2)
Information	-0.074 [0.325]	0.133** [0.030]
Contact	0.017* [0.089]	-0.011*** [0.004]
Announcement and Volunteers Both	0.180*** [0.008]	-0.376*** [0.000]
Control Mean	0.153	0.435
Number of Respondents	423	423
Number of Mosques	32	32
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) a binary variable which is 1 when any respondent, either from the Sunni (majoritarian) sect or the Shia (minority) sect, chooses discounted plumbing services from a member of the opposite sect (the names of the plumbers allow for clear sectarian identification) and 0 otherwise and (ii) a binary variable which is 1 if a Sunni plumber's discounted services are chosen by respondents of any sect and 0 otherwise. Both 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects, randomization inference, and cluster errors at the strata level.

Table 21: The Effect of Contact on Book Choice (RI)

	Books, Change (Sunnis) (1)	Book (History), Change (Sunnis) (2)
Information	0.092 [0.964]	0.049 [0.706]
Contact	0.243** [0.020]	0.333*** [0.000]
Announcement and Volunteers Both	-0.258 [0.708]	-0.280 [0.602]
Control Mean	-0.141	-0.169
Number of Respondents	423	423
Number of Mosques	32	32
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) the change in the number of either of the two books about Sunnis (their rituals or their narration of early Islamic history) chosen by respondents of any sect at the endline compared to baseline and (ii) a binary variable which is 1 if the book chose is about history. 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects, and robust and bootstrapped standard errors (top and bottom respectively). We use block fixed effects and cluster errors at the strata level. In his regression specification, we drop 5 percent of the sample randomly equally from every treatment arm.

Table 22: **The Effect of Contact on Economic Interactions (RI)**

	Business, Shias (1)	Hiring Change (2)
Information	0.057*** [0.002]	0.012* [0.088]
Contact	-0.009 [0.150]	-0.021 [0.456]
Announcement and Volunteers Both	0.344*** [0.000]	0.240** [0.022]
Control Mean	3.531	-0.107
Number of Respondents	428	421
Number of Mosques	32	32
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) beliefs of respondents about entering into business with Shias and (ii) the change in openness to hiring a member of the opposite sect at the endline compared to baseline. These are survey-based measures. The first outcome is an answer to the following survey question: “What do you think about being entering into business with Shias?,” while the second outcome is an answer to the following survey question: “What do you think about recruiting Shia/Sunni workers?” The answers can range from very bad to very good in a five-point scale. 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects, and robust standard errors. We use block fixed effects and cluster errors at the strata level.

6.3.2 Sample Drop

Table 23: The Effect of Contact on Plumber Choices (Sample Drop)

	Plumber, Opp Sect	Plumber, Sunni
	(1)	(2)
Information	-0.085 (0.070)	0.150** (0.045)
Contact	0.022 (0.027)	-0.016 (0.050)
Announcement and Volunteers Both	0.211** (0.086)	-0.420*** (0.059)
Control Mean	0.155	0.440
Number of Respondents	401	401
Number of Mosques	32	32
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) a binary variable which is 1 when any respondent, either from the Sunni (majoritarian) sect or the Shia (minority) sect, chooses discounted plumbing services from a member of the opposite sect (the names of the plumbers allow for clear sectarian identification) and 0 otherwise and (ii) a binary variable which is 1 if a Sunni plumber's discounted services are chosen by respondents of any sect and 0 otherwise. Both 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects and cluster errors at the strata level. In his regression specification, we drop 5 percent of the sample randomly equally from every treatment arm.

Table 24: **The Effect of Contact on Book Choice (Sample Drop)**

	Books, Change (Sunnis) (1)	Book (History), Change (Sunnis) (2)
Information	0.123* (0.051)	0.095 (0.067)
Contact	0.245** (0.088)	0.355*** (0.089)
Announcement and Volunteers Both	-0.287** (0.093)	-0.358** (0.097)
Control Mean	-0.143	-0.185
Number of Respondents	401	401
Number of Mosques	32	32
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) the change in the number of either of the two books about Sunnis (their rituals or their narration of early Islamic history) chosen by respondents of any sect at the endline compared to baseline and (ii) a binary variable which is 1 if the book chose is about history. 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects, and robust and bootstrapped standard errors (top and bottom respectively). We use block fixed effects and cluster errors at the strata level. In his regression specification, we drop 5 percent of the sample randomly equally from every treatment arm.

6.3.3 No Controls

Table 25: The Effect of Contact on Plumber Choices (No Controls)

	Plumber, Opp Sect	Plumber, Sunni
	(1)	(2)
Information	-0.048 (0.034)	0.095*** (0.023)
Contact	0.009 (0.020)	0.005 (0.033)
Announcement and Volunteers Both	0.160** (0.064)	-0.372*** (0.078)
Control Mean	0.153	0.435
Number of Respondents	428	428
Number of Mosques	32	32
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) a binary variable which is 1 when any respondent, either from the Sunni (majoritarian) sect or the Shia (minority) sect, chooses discounted plumbing services from a member of the opposite sect (the names of the plumbers allow for clear sectarian identification) and 0 otherwise and (ii) a binary variable which is 1 if a Sunni plumber's discounted services are chosen by respondents of any sect and 0 otherwise. Both 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects and cluster errors at the strata level. We include no control variables in this specification.

Table 26: **The Effect of Contact on Book Choice (No Controls)**

	Books, Change (Sunnis) (1)	Book (History), Change (Sunnis) (2)
Information	-0.002 (0.037)	0.002 (0.055)
Contact	0.280** (0.113)	0.330** (0.104)
Announcement and Volunteers Both	-0.226** (0.089)	-0.231** (0.085)
Control Mean	-0.141	-0.169
Number of Respondents	428	428
Number of Mosques	32	32
Strata Fixed Effects	X	X

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variables are (i) the change in the number of either of the two books about Sunnis (their rituals or their narration of early Islamic history) chosen by respondents of any sect at the endline compared to baseline and (ii) a binary variable which is 1 if the book chose is about history. 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 inter-sectarian harmony), or the combined treatment. We use block fixed effects, and robust and bootstrapped standard errors (top and bottom respectively). We use block fixed effects and cluster errors at the strata level. We include no control variables in this specification.

6.4 Baseline Demographics, Beliefs and Behavior

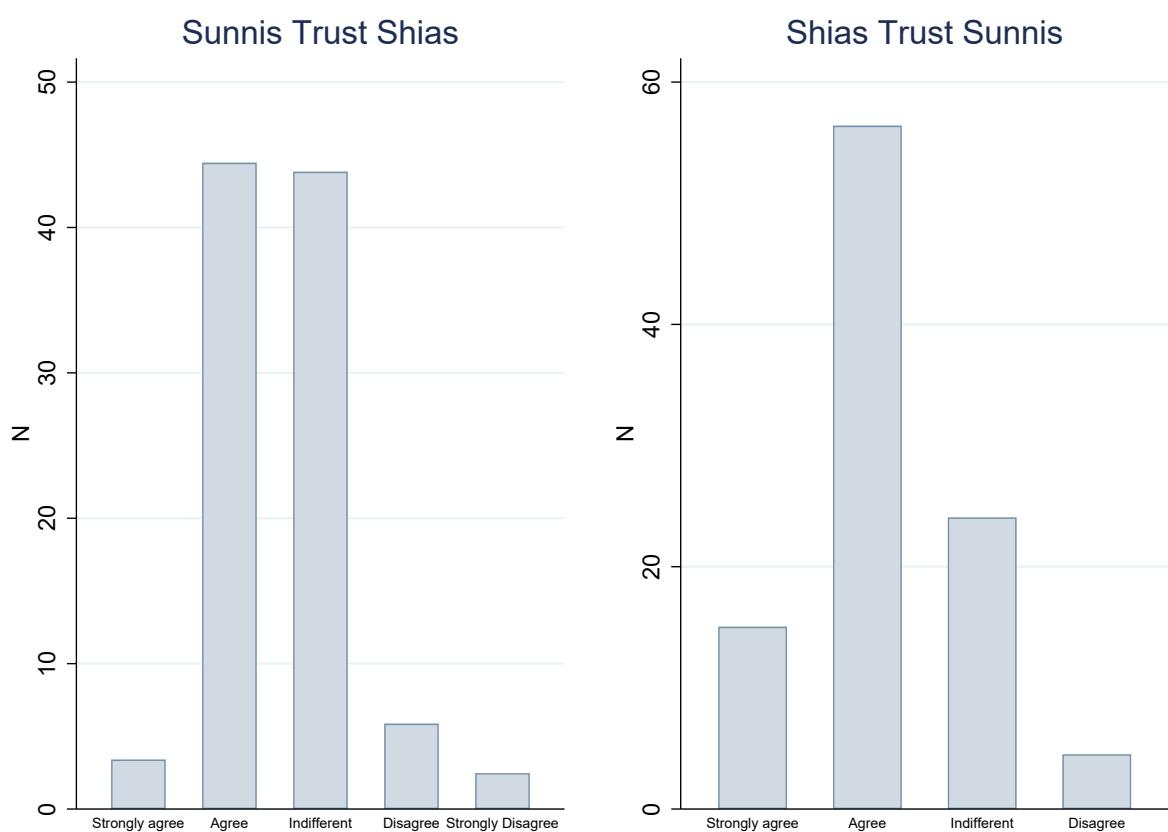


Figure 4: Distribution of the trust in the opposite sect variable at baseline

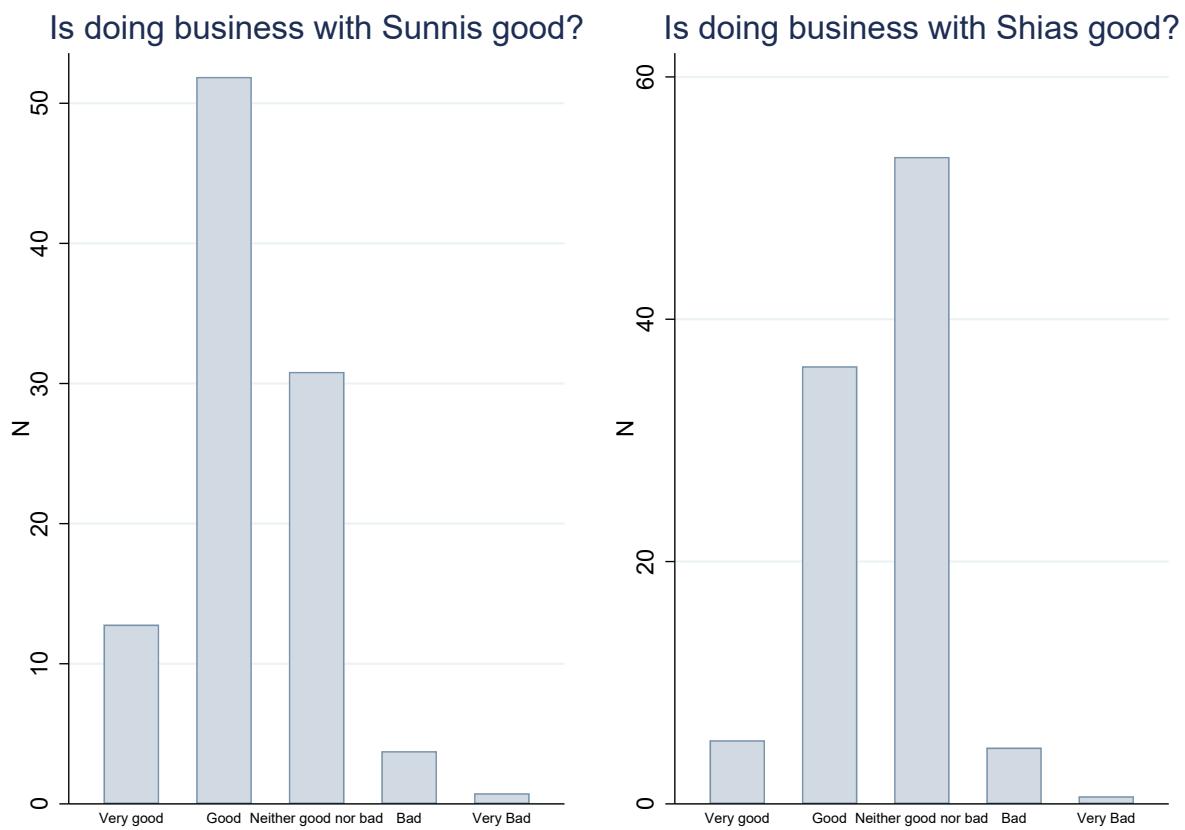


Figure 5: Distribution of the open to doing business with the opposite sect variable at baseline

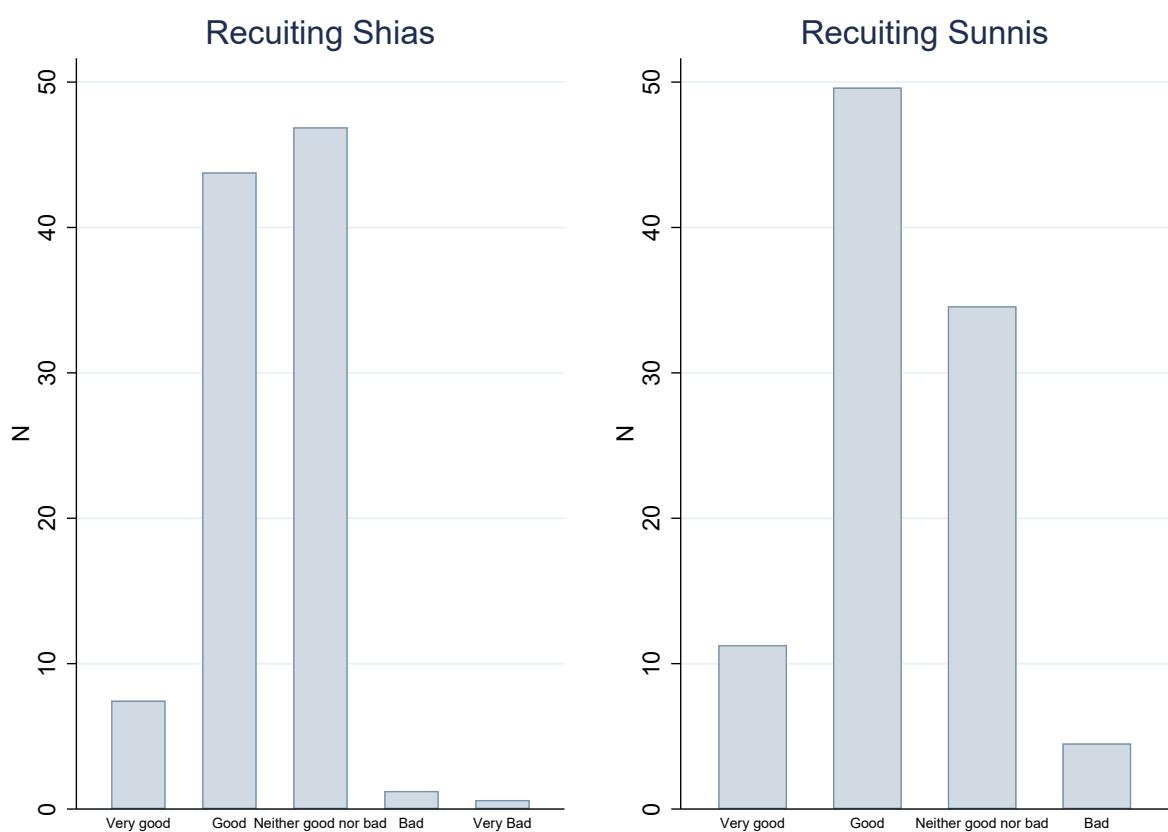


Figure 6: Distribution of the open to hiring the opposite sect variable at baseline

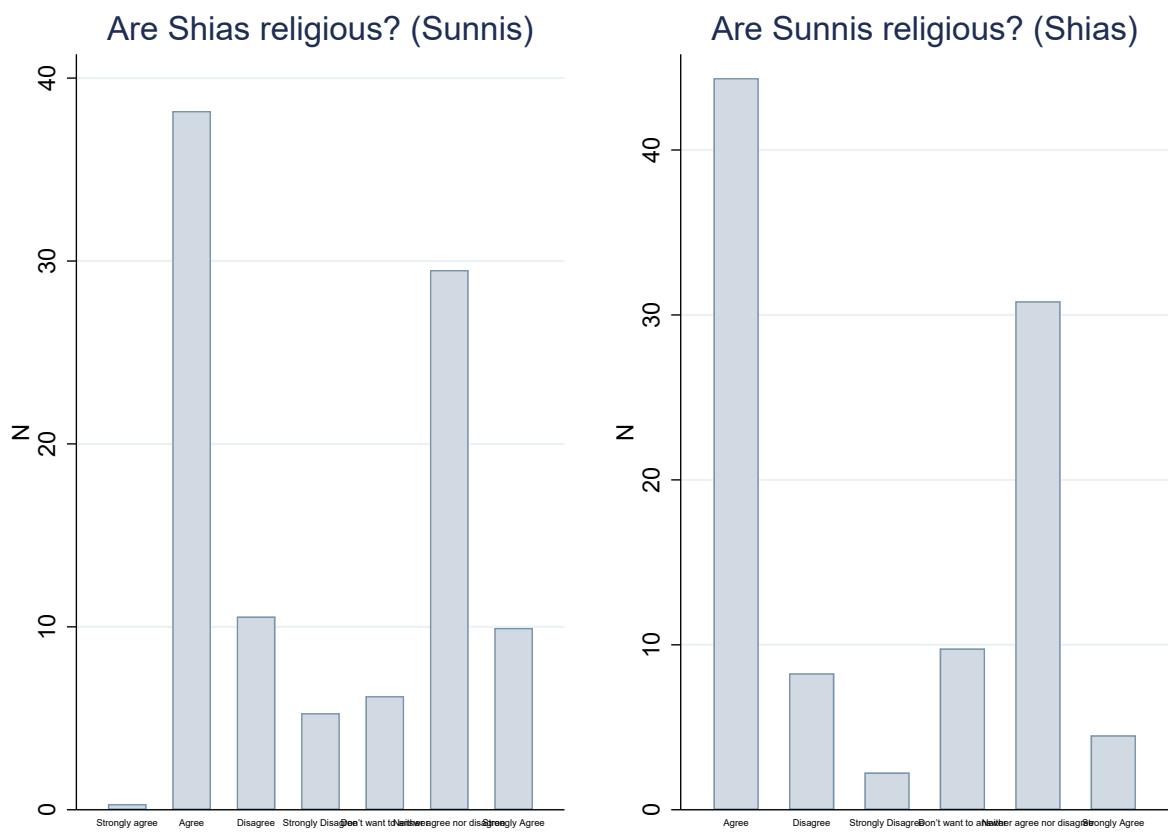


Figure 7: Distribution of the religiosity variable at baseline

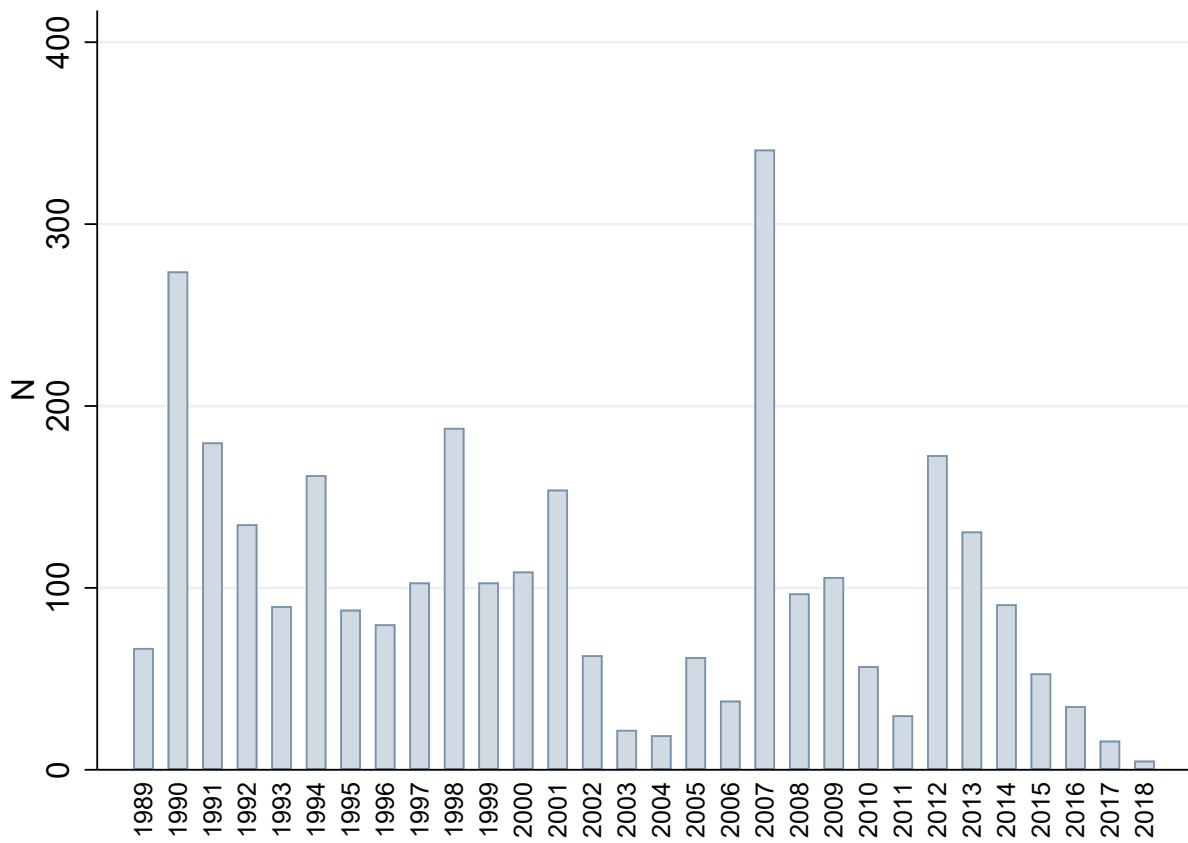


Figure 8: Number of incidents of sectarian violence in Pakistan. Source: South Asia Terrorism Portal

6.5 Shia Sunni Violence in Pakistan

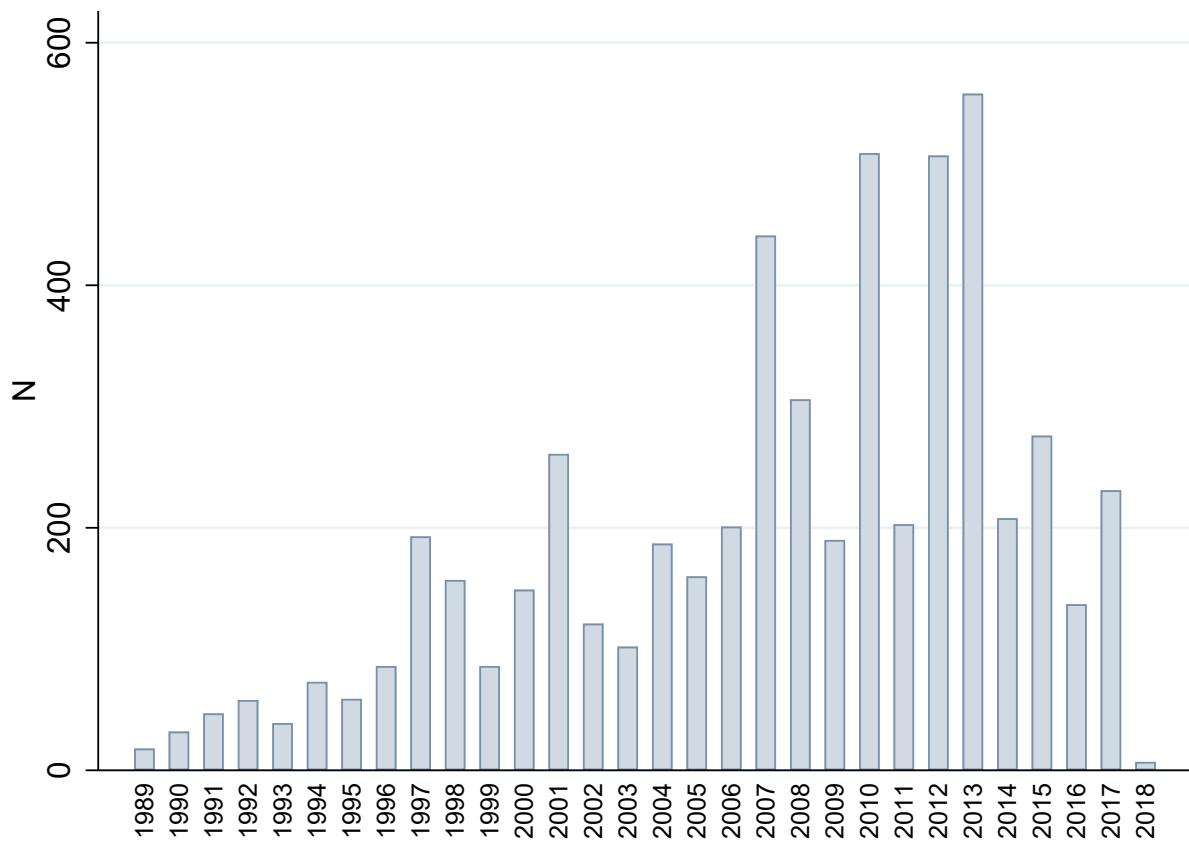


Figure 9: Number of sectarian killings in Pakistan. Source: South Asia Terrorism Portal

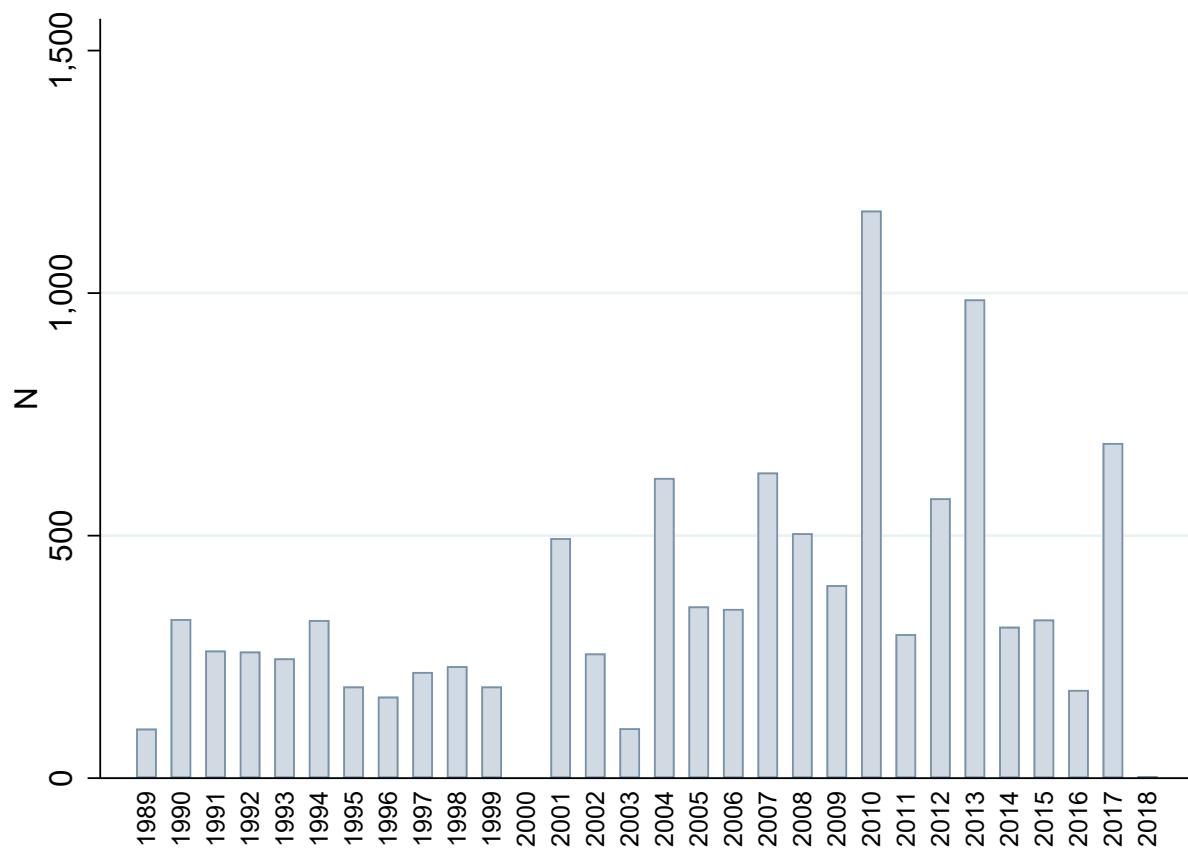
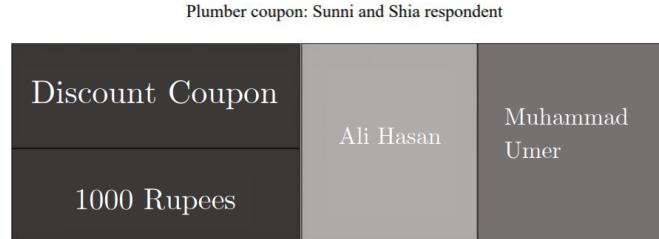


Figure 10: Number of injured people in sectarian violence in Pakistan. Source: South Asia Terrorism Portal

6.6 Maps: Mosque Locations

6.7 Vouchers



6.8 Balance Tables

Table 27: Balance Table (Sunni Sample)

	Age	Marital Status	Education, Family	Income,	Employment	Wife, Same Sect	Listen Sermons	Family Prayers	Business, Opp Sect	Trust, Opp Sect
Announcement Only (A)	27.719 (3.692)	0.993 (0.089)	6.269 (0.232)	0.558 (0.251)	4.720 (0.189)	0.945 (0.018)	1.043 (0.035)	1.947 (0.244)	2.880 (0.127)	2.795 (0.193)
Prayer Volunteers Only (B)	30.180 (3.980)	1.114 (0.077)	6.116 (0.097)	0.550 (0.243)	5.036 (0.246)	0.960 (0.068)	0.998 (0.050)	1.904 (0.149)	2.908 (0.133)	2.876 (0.187)
Announcement and Volunteers Both (C)	30.581 (2.650)	1.110 (0.061)	6.183 (0.113)	0.863 (0.283)	5.173 (0.234)	0.935 (0.045)	0.937 (0.048)	1.718 (0.156)	2.963 (0.140)	2.936 (0.130)
Control (D)	29.000 (.)	1.000 (0.000)	6.000 (0.000)	1.000 (0.000)	5.000 (0.000)	0.964 (0.026)	1.000 (.)	2.000 (.)	3.000 (0.000)	3.000 (0.000)
Hypothesis tests p-values										
Joint orthogonality p-value(A=B=C=D)	0.82	0.34	0.47	0.14	0.41	0.82	0.28	0.28	0.73	0.73
A-D=0	0.73	0.93	0.26	0.09	0.15	0.51	0.23	0.83	0.35	0.30
B-D=0	0.77	0.16	0.24	0.08	0.89	0.95	0.97	0.53	0.50	0.51
C-D=0	0.56	0.08	0.12	0.63	0.47	0.45	0.20	0.08	0.79	0.63
of Regular Worshipers	301	302	302	299	301	228	302	302	302	301

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. This table shows balance for the full sample of 428 worshipers. The variable age is measured in years. The variable marital status is 1 for single, 2 married, 3 for divorced/separated and 4 for widowed. The variable family education is the highest level of education in the family: 1 for never attended school, 2 for secondary school, 3 for a 10th grade exam, 4 for high school diploma, 5 for undergraduate degree, 6 for a graduate degree, and 7 for any even higher degree. The variable income is 1 for income between 15,000-25,000, 2 for 25,001-35,000, 3 for 35,001-50,000 and 4 for higher than 50,000. The employment variable is 1 for a full-time job, 2 for a part-time job, 3 for temp/contract work, 4 for self-employed, 5 for no idea and 6 for retired. The variable wife opposite sect is a binary variable which is 1 if the wife of the respondent is of the same sect. The variable listen sermons is about whether the respondent attends communal Friday prayers (one weekly communal prayer in Islam) and listening to the sermon (which requires time). It is a binary variable which is 1 for the respondent attends the sermon, 0 otherwise. The variable family prayers is about how many people from the respondent's family pray at the mosque: 1 for none, 2 for 1 person, 2 for 2 people and 3 for more. The variable business opposite sect is about willingness to do business with members of the opposite sect in a 1-5 range with 1 meaning very bad and 5 meaning very good. The variable trust in the opposite sect is a general trust question with a 1-5 range with 1 meaning very bad and 5 meaning very good. We use robust standard errors and block fixed effects.