

From the Pulpit to the People: How Sermons Shape Beliefs and Behavior

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Abstract

I explore the role of religious institutions in belief formation by experimentally varying the content of Friday sermons - one of the most widespread forms of in-person religious persuasion in the Muslim world - in 309 mosques in Punjab, Pakistan. Working with the Punjab Auqaf Department that administers state religious properties, I randomize mosques to deliver sermons on women's rights, neighbors' rights, or a control condition, with additional variation in whether arguments are framed in religious or secular terms. I find sizable impacts of women's rights sermons (0.23 SD) and neighbors' rights sermons (0.19 SD) on men's beliefs and behavior as measured through lab-in-field games, field behavioral measures, and survey responses 2-4 weeks after treatments. I find suggestive evidence that effects extend downstream, with wives of husbands who received sermons on women's rights reporting more prosocial beliefs. Examining equilibrium dynamics, I document supply-side persistence in prosociality of sermon content alongside demand-side backlash as evidenced by a 12% decline in attendance numbers at mosques that received sermons on women's rights. Sermon content is more persuasive when grounded in religious arguments for women's rights but in secular arguments for neighbors' rights, consistent with a Bayesian framework modified to allow conservative religious priors to constrain updating from secular signals. Taken together, these findings highlight the continued centrality of religious institutions, such as the Friday sermon, in shaping beliefs and behavior especially among highly religious populations.

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1 Introduction

Individuals’ priors are the primitives of many economic models and there is growing evidence that beliefs about social norms, gender roles, trust, and cooperation are central determinants of economic behavior and development (Guiso, Sapienza and Zingales (2006); Bertrand, Kamenica and Pan (2015); Knack and Keefer (1997)). While previous work has demonstrated how changing beliefs can engender positive social change (Bursztyn, González and Yanagizawa-Drott, 2020), remarkably little is known about the process of belief formation itself and the institutions responsible for forming and reshaping people’s beliefs. Given how most religious traditions make claims towards ultimate truth, religious instruction often begins early and continues into adulthood, and 75% of the world’s population continues to identify with a religious group, religious institutions are likely an important source of people’s beliefs (Hackett et al., 2025).¹ Yet, how religious institutions shape beliefs remains understudied.

In this paper, I explore the role of religious institutions in belief formation by focusing on religious sermons - the primary formal channel through which religious leaders interpret, frame, and transmit religious teachings to their communities en masse. Even though religious sermons are estimated to reach hundreds of millions weekly (Kramer and Fahmy, 2018), making them some of the most widespread and regular channels of in-person persuasion in the world, little causal work exists on the role of sermons in shaping individuals’ beliefs and behavior.²

I study the Friday sermon, a key religious institution in Muslim societies, and evaluate the causal impact of prosocial sermon content. Delivered before the Friday congregational prayer - obligatory on all Muslim men - by an imam, the sermon, or *khutbah* in Arabic, is often considered one of the most important sources of spiritual, social, and moral guidance for Muslims.³ It is partly for this reason that some states (e.g. Egypt, Turkey, and Saudi Arabia) centrally mandate their Friday sermons. In most others, including Pakistan, imams typically have considerable discretion over what to say, often choosing topics that range from theological doctrine and morality to politics and current events. Since the information in sermons is public, the audience often exclusively male, and the source a highly trusted religious leader, a causal evaluation of Friday sermons offers a unique opportunity to study belief formation in the presence of others, intra-household belief transmission, and the potential for sermons to serve as policy tools for information dissemination.

Utilizing a novel partnership with the Punjab Government’s Auqaf and Religious Affairs

¹Despite the secularization hypothesis which predicted that religiosity would decline as societies modernize, the fraction of the world’s population that identified with any religious group has stayed strikingly stable over time (Hackett et al., 2025).

²While there is little data on the total number of individuals who attend sermons regularly, the Pew study cited finds that 40% of adults worldwide attend religious services at least weekly. This number is generally higher in many Muslim-majority nations (e.g. it is 59% in Pakistan). In the sample from Punjab, Pakistan surveyed for this study, 90% of those who attended the Friday congregational prayer reported listening to at least 10 minutes of their imam’s sermon the previous Friday.

³The first Friday sermons were delivered by the Prophet Muhammad himself and their importance is often emphasized with reference to the following saying of the Prophet Muhammad: “He who performs his Wudu perfectly and comes to Jummah prayer and listens (to the Khutbah) silently, the sins which he has committed since the previous Friday plus three more days (i.e., 10 days) will be forgiven for him. One who distracts himself with pebbles during the Khutbah will not get the reward (Sahih Muslim, 857).”

Department, I experimentally vary sermon content in the universe of 309 state mosques in Punjab, Pakistan, and evaluate impacts on congregants’ beliefs and behavior. The Auqaf Department, responsible for administering the oldest and most important religious properties in the province, employs the imams in these mosques who lead the Friday congregational prayer for approximately 116,000 mosque-goers each week.⁴ I randomize sermons across the following dimensions: topic (women’s rights, neighbors’ rights, or control), framing (fully religious or partially secular), and information sharing (whether sermons conclude with a plea to share content with wives). The treatments take the form of two distinct sermon scripts that imams are asked to deliver over consecutive Friday sermons. The women’s rights sermons emphasize kindness toward women and the importance of women’s education, employment, and social participation. The neighbors’ rights sermons emphasize kindness toward neighbors, the importance of helping neighbors, social trust, and community cleanliness as an obligation to neighbors. Both conclude with behavioral calls to action: discussing aspirations for daughters with wives in the women’s rights sermons, and spending an hour in the coming week cleaning one’s neighborhood in the neighbors’ rights sermons.

I find that sermons have sizable impacts on beliefs and behavior as measured through my primary preregistered outcomes 2-4 weeks after conclusion of treatments. Men who attended mosques where sermons on women’s rights were delivered allocated 33% more money to a fund that helps women find employment, were 19.5% more likely to consent to having their wife surveyed, and 11% more likely to sign a petition to support women’s political participation. Men who prayed in mosques with sermons on neighbors’ rights donated 19% more to poor neighbors but there was no change in enumerator-evaluated community cleanliness. When summarized in an index, the women’s rights and neighbors’ rights sermons produced costly behavioral responses of 0.23 SD and 0.19 SD respectively. These behavioral effects are accompanied by smaller shifts in self-reported beliefs: men exposed to women’s rights sermons report a 0.18 SD increase in support for women’s education, a 0.11 SD increase in a pooled women’s rights belief index, but no statistically significant change in beliefs about neighbors. Results are robust to the inclusion of an exhaustive set of controls and fixed effects including the baseline value of the outcome where available, nor do I find evidence for differential attrition, significant spillovers, or social desirability bias using the Marlowe-Crowne scale.

I find suggestive evidence that effects extend downstream to wives, who are not present for the Friday prayer and can only be affected through intra-household transmission, by what their husbands say or how they behave in the household. Surveyed by phone conditional on the husband’s consent, wives of men who received women’s rights sermons report 0.19 SD more prosocial beliefs about women and a positive but imprecisely estimated (0.12 SD) improvement in self-reported well-being. While this necessarily reflects a selected sample of wives, the magnitude of effects and several tests for selection suggest that the sermon treatments had real indirect effects on women.

Next, I turn to equilibrium dynamics at the mosque level. On the supply side, I evaluate how my treatments endogenously changed future sermon content by recording and transcribing the sermons imams delivered once treatments had concluded and they were free to say whatever they wished. Analyzing this rich text data using ratings given to content by a custom LLM trained for the analysis of sermon content in the local language, I find that imams

⁴Estimates of weekly Friday prayer attendance are derived from baseline surveys of each mosque.

who delivered sermons on women’s or neighbors’ rights continue to discuss rights in their subsequent sermons, with their content becoming significantly less conservative, and far less likely to contain hate speech. Surveys of imams suggest that delivering the treatments made imams more prosocial themselves, consistent with past work documenting self-persuasion when individuals are asked to advocate for a given position in public (Schwardmann, Tripodi and van der Weele, 2022).

On the demand-side, I look at impacts on mosque-level congregation numbers and find that the positive impact of sermons on beliefs and behavior comes at a cost. Mosques in which women’s rights sermons were delivered experienced a 12% decline in total attendance as measured directly by enumerators, while I observe no similar attendance effects of sermons on neighbors’ rights. I interpret this as evidence of backlash: mosque-goers vote with their feet against the highly prosocial content on women. I also look for evidence of additional negative consequences from a policy perspective but find that the treatments neither reduce imams’ satisfaction with their government jobs nor lead to domain expansion where imams believe they should have greater say over non-religious issues such as politics.

Turning to mechanisms, I present a simple model of Bayesian updating in which mosque-goers value both a religious and secular objective - conforming to God’s will and doing well in life - both of which are uncertain. Sermons provide signals about the optimal religious or secular action and congregants correspondingly update their priors. The model predicts that signals are more persuasive when the relevant priors are low/anti-social - i.e., when signal surprise is greater - and updating from signals in the religious or secular domain is unaffected by priors in the other. My framing sub-treatments, which vary the intensity of the religious and secular signal in each sermon, allow me to test these predictions. Doing so reveals a striking asymmetry: for women’s rights, religiously framed sermons produce effects of 0.33 SD, more than double the 0.14 SD effect of secularly framed sermons, and the difference between the two treatment arms is statistically significant. The pattern reverses for sermons on neighbors’ rights: secularly framed sermons produce a larger effect of 0.25 SD, while the effect of religiously framed sermons is smaller at 0.14 SD. These patterns suggest that framing matters and heterogeneously by topic, with similar prosocial content being more effective when grounded in religious arguments for women’s rights but in secular arguments for neighbors’ rights.

However, the standard Bayesian framework can only partially account for this pattern. On the one hand, descriptive findings in the data reveal that individuals’ secular priors are on average more prosocial than their religious priors for women’s rights, while the reverse holds for neighbors’ rights. Standard Bayesian updating would predict that signals should be more persuasive when priors in the relevant domain are low, and this within-topic logic fits the data. However, Bayesian updating fails to explain the pattern across topics: the secular treatment effect for women’s rights is small despite relatively low secular priors, while the secular treatment effect for neighbors’ rights is large despite high secular priors. I formalize a modification to the standard Bayesian framework allowing religious priors to “gate” secular persuasion: when individuals receive a secular signal but their religious priors are too low, they under-respond to the signal, while they over-respond if religious priors are high. I test the model’s predictions and find evidence that higher religious priors increase updating from secular signals and close the gap between the religious and secular treatment effects I observe, in stark contrast to the standard Bayesian case of no cross-domain interaction. Besides

reconciling the patterns in my data, this exercise highlights the centrality of religious priors and may help explain why so many secular campaigns aimed at changing men’s attitudes about gender that left religious beliefs unaddressed have produced only modest effects.

Finally, I explore additional mechanisms that may be responsible for driving my effects. The first is the role of sharing sermon content with others, which I evaluate using my information-sharing sub-treatments that cross-randomized treatment sermons to conclude with a plea from the imam to share what was heard with wives. The expected direction of effects is theoretically ambiguous: increased information sharing could reinforce effects if sharing sermon content and the threat of cognitive dissonance leads to behavioral change à la the social psychology literature, but it could also dampen effects if sharing information designed to increase women’s autonomy and well-being shifts household bargaining dynamics in ways men prefer to avoid (Aronson, Fried and Stone (1992); Cullen et al. (2024)). In practice, I find relatively small differences in treatment effects across the information sharing and no sharing treatment arms and cannot reject the null hypothesis of no difference.

Another potential mechanism is social norms: because sermons are delivered publicly to large congregations, each listener receives a signal not only about religious doctrine but also about what others believe, so effects may be operating through second-order beliefs. However, I find little support for this channel. Decomposing endline beliefs into personal beliefs, beliefs about social norms, and religious beliefs reveals that the treatments move personal and religious beliefs while leaving perceived norms unchanged. Moreover, treatment effects do not vary meaningfully by congregation size or whether the mosque is located in a residential area, variables that my randomization was stratified by, even though a norms channel would predict larger effects in bigger congregations of neighbors.

This paper contributes to several literatures. First, it provides some of the first experimental evidence on the causal effects of religious messaging delivered through regular institutional channels, contributing to the broad literature evaluating the effect of religion on various economic outcomes (Iannaccone (1998); McCleary and Barro (2006); Clingingsmith, Khwaja and Kremer (2009); Campante and Yanagizawa-Drott (2015); Wang (2021)). It is only the second paper, to the best of my knowledge, after Bryan, Choi and Karlan (2020) to be able to randomize religion in real-world settings. I randomize religious messaging conditional on exposure as opposed to religious exposure itself, but my findings largely complement those of Bryan, Choi and Karlan (2020) in documenting the importance of religion in shaping economic and social outcomes.

My paper also contributes to a very recent literature evaluating the impact of religious leaders (Prummer (2019); Buccione (2023); Campbell, Sethuraman and Steffen (2024); Avdeenko et al. (2025)). It complements the key finding of this literature that religious leaders matter by studying a key channel through which religious leaders reach their communities worldwide: in-person sermons. The closest paper to mine is recent work by Sarkar, Elverdin and Lucek (2026), who study the effects of Christian sermons in Colombia by randomizing respondents to audio recordings of sermon content during a survey experiment, and find that Evangelical Pentecostal messages emphasizing women’s agency and competence produce only modest effects on attitudes. I complement this work by studying the key institution of the Friday sermon in Islam, randomizing sermons directly in their natural congregational setting, and by documenting large impacts of sermons emphasizing women’s agency on costly measures of men’s behavior towards women.

Second, this paper contributes to a large literature on persuasion that explores the effects of information provision in various contexts (DellaVigna and Gentzkow (2010); Haaland, Roth and Wohlfart (2023); Yanagizawa-Drott (2014); La Ferrara, Chong and Duryea (2012)). The information-provision literature has established that beliefs update in response to new information, but typically studies one-shot, factual treatments delivered often in artificial settings by researchers and is often silent on the process of belief formation itself. There are some notable exceptions to this: Yanagizawa-Drott (2014) studies the role of radio in inciting violence in Rwanda, La Ferrara, Chong and Duryea (2012) examines entertainment television’s effects on fertility decisions in Brazil, and DellaVigna and Kaplan (2007) evaluates the persuasive effects of political media in the United States. My paper contributes to this literature by evaluating the persuasive impacts of in-person congregational sermons delivered by highly trusted religious leaders. Sermons are a qualitatively different persuasion technology: they potentially combine religious authority, repetition, and social reinforcement in a public congregational setting, allowing me to study how the social and religious dimensions of information provision interact to influence belief formation. Furthermore, my finding that priors in one domain can influence updating from signals in a different domain offers a refinement to the classic Bayesian models that are standard in this literature.

Finally, by randomizing sermon content to focus on women’s rights and evaluating impacts on men’s beliefs and behavior, this paper speaks to a growing body of work that studies interventions aimed at shifting gender attitudes, including media campaigns (Jensen and Oster (2009); La Ferrara, Chong and Duryea (2012)), educational programs (Dhar, Jain and Jayachandran, 2022), and economic interventions (Field et al., 2021). This work, taken together, finds that men’s beliefs on gender can be sticky, sometimes documenting backlash in response to campaigns aimed at improving women’s autonomy and economic participation (Cullen et al., 2024; La Ferrara and Yanagizawa-Drott, 2026). Surprisingly, this literature is mostly silent on the potential for religion and religious leaders to shift beliefs about gender. This is despite the fact that conservative religious priors may themselves be a key reason why gender norms are so resistant to change, particularly in Muslim-majority societies where religious teachings are frequently invoked to justify restrictions on women’s education, employment, and social participation. My work finds that religious leaders can be especially effective at shifting men’s beliefs on gender, producing behavioral changes of 0.23 SD. Moreover, the finding that framing matters, that identical prosocial content on women’s rights is more powerful when grounded in religious rather than secular arguments, and that secular information can be ineffective when religious beliefs are left unchanged, reinforces the centrality of religion as both the key bottleneck and a potential lever for changing gender norms, having important policy implications for highly religious settings.

The remainder of the paper is organized as follows. Section 2 provides information on the context and institutional setting. Section 3 provides detail on my experimental design and data. Section 4 presents my theoretical framework. Section 5 presents my empirical results. Section 6 speaks to key mechanisms. Finally, Section 7 concludes.

2 Context and Institutional Setting

2.1 The Friday Prayer and Sermon in Islam

The Friday congregational prayer, known as *Salat al-Jumu'ah* in Arabic, is the most important institution of collective worship in Islam. It is performed at mid-day every Friday and all major Sunni sects consider attendance obligatory for adult Muslim men.⁵ The importance of the ritual has meant that in many Muslim countries, Friday is part of the official weekend while in others, Fridays are half-days for schools and businesses. Unlike the five daily prayers which may be performed individually, the Friday prayer is inherently congregational and must be performed in a group, most often inside a mosque. This congregational requirement transforms the prayer from a private religious practice into a recurring social institution, bringing together men from a given neighborhood at the same time and place each week. Women do not have the same religious obligation to offer the prayer in a congregational setting as men, but may join the congregation if the mosque has a separate prayer section for women.

The Friday prayer is preceded by the Friday sermon (*Khutbah* in Arabic) which is delivered by the imam, the primary religious leader in Muslim societies. Imams utilize sermons as platforms for religious teaching through discussions of theology, morality, correct ritual practice, as well as Islamic history, but sermon content often extends beyond just these subjects to social issues facing local communities as well as traditionally secular topics such as politics, economics, and health (Gaffney, 1994). The tradition traces directly to the Prophet Muhammad, who delivered the earliest Friday sermons himself and used sermons both to preach and as tools for political mobilization (Borthwick, 1967). Traditional Islamic law required the Friday sermon to be delivered entirely in Arabic and historically, Friday congregational prayers were restricted to central mosques in major urban centers, often limited to one per city. Today, sermons in non-Arabic speaking countries are delivered primarily in the local language and are held in mosques of all sizes which has vastly expanded the reach of the institution.

The scale of the Friday sermon as a communication channel is difficult to overstate. While no precise numbers are available on the number of individuals that listen to the Friday sermon regularly, an estimated 40% of adults in Muslim-majority countries attend religious services at least weekly, and in many countries the share is considerably higher (Kramer and Fahmy, 2018). Presumably, many of these individuals also listen to the Friday sermon; in my own sample from Punjab, Pakistan surveyed for this study, 93% of those who attended the Friday congregational prayer reported listening to at least 10 minutes of their imam's sermon two Fridays ago. This makes the Friday sermon one of the most widespread and regular channels of in-person persuasion in the world, reaching hundreds of millions of people each week.

Recognizing the reach of the Friday sermon and its potential to mold public opinion, several Muslim-majority states have sought to centralize control over sermon content. For instance, in Turkey, the Presidency of Religious Affairs (Diyanet) has sought to standardize

⁵The Quran is explicit about the importance of the Friday prayer: "O believers! When the call to prayer is made on Friday, then proceed diligently to the remembrance of Allah and leave off your business (Surah Al-Jumu'ah, 62:9-10)."

Friday sermon content since the early years of the Republic, and today distributes a single centrally-written sermon each week that is often read verbatim in mosques across the country (Ozdalga, 2022). In Egypt, the Ministry of Awqaf writes and disseminates official Friday sermons, monitors compliance in major mosques, and has been known to discipline imams who deviate from the approved text. These efforts have not gone uncontested. When Egypt moved to mandate pre-written sermons in 2016, congregants in some mosques reportedly shouted down imams reading from the official scripts, and a council of senior scholars publicly rejected the policy, arguing that standardized sermons would erode imams’ capacity for independent religious reasoning (Associated Press, 2016). More recently in 2024, Morocco’s announcement that it would standardize the Friday sermon drew widespread backlash and caused the Ministry of Endowments and Islamic Affairs to backtrack and clarify that the decision to unify Friday sermons was temporary and would preserve the autonomy of imams (Faouzi, 2024). These examples illustrate that governments across the Muslim world view the Friday sermon as a powerful policy instrument and that the question of who controls sermon content continues to be an important and contested policy issue.

Given the significance of the Friday sermon in Muslim societies, a large literature outside of economics has emerged that studies them. In some of the earliest work on the subject, Borthwick (1967) analyzed radio sermons in the Middle East to argue that ruling elites utilize Friday sermons as a channel of political communication to transmit nationalist messages, with preachers acting as mediators who clothe state policy in the “legitimacy myths of the Islamically oriented masses.” In an Anthropology study of preachers in rural Jordan, Antoun (1989) characterized the imam as a “culture broker” responsible for applying Islamic teachings to the everyday social concerns of his congregation. Based on fieldwork in Egypt, Gaffney (1994) argued that the sermon is the preeminent medium through which the message of Islam reaches ordinary believers, and traced how preachers convert religious authority into political influence. More recently, Aksoy (2023) uses machine learning to analyze all Friday sermons read to citizens of Turkey between 2015 and 2021 and finds that their content responds to current events and also predicts subsequent public discussion on social media. Yet, this work is descriptive or correlational. Given the difficulty in randomizing sermons, we still lack sound empirical evidence on the causal impact of this important religious and social institution on individuals’ beliefs and behavior.

2.2 Religion and Gender in Punjab, Pakistan

Punjab, Pakistan’s most populous province home to over 127.6 million people, is overwhelmingly Muslim: approximately 98% of the population identifies as such, with the majority following the Sunni tradition (Pakistan Bureau of Statistics, 2023). Moreover, religious observance is also high; nationally, over 90% of Pakistanis report that religion is very important in their daily lives and 59% of Muslims report attending their mosque at least weekly (Pew Research Center, 2012). At the center of this religious life is the imam, who occupies a position of considerable religious and social authority in Pakistan. For many Pakistanis, the relationship with the imam begins in childhood: most children receive their earliest religious instruction through mosque-based classes led by the imam, establishing him as a trusted figure from a young age. As adults, the imam continues to serve a central role and acts as a local leader by offering religious guidance, leading congregational prayers, conducting funeral

and wedding rites, and helping fund-raise for and organize various community causes among other responsibilities. While formal religious instruction largely ends after childhood, the Friday sermon remains, often making it the primary channel through which many adults continue to receive religious guidance over the course of their lives.

The primary structure out of which the imam operates is the mosque. In Muslim societies, the mosque acts not only as a place of worship and religious instruction but also as a hub for community life, serving to strengthen social networks, aid economic activity, and even act as a space for conflict resolution.⁶ Utilization of the mosque for religious and social purposes, however, is largely limited to men. The audience for the Friday prayer and sermon is almost exclusively male, reflecting both the religious obligation - limited only to men - and prevailing social norms in Pakistan that limit women's mobility and social participation.⁷ The gender-segregated institutional structure, however, is both a feature of the setting and a motivation for the study: any effect of sermon content on women must operate indirectly, through intra-household transmission of information from husbands to wives, making the Friday sermon a useful setting for studying how information, particularly religious information, flows within households.

The role of religion in influencing beliefs about gender is especially pertinent in my setting which suffers from some of the starkest gender disparities in the world. The World Economic Forum ranked Pakistan last of 148 countries in its Global Gender Gap Report in 2025, with large deficits in economic and political participation of women. Female labor force participation stands at roughly 24%, far below the world average of 49% and low even relative to South Asia ([World Bank, 2025](#)). Social norms restricting women's mobility, access to public spaces, and interactions with non-relatives are pervasive and represent binding constraints on women's economic and social opportunities.

Moreover, religious teachings are frequently invoked to justify such restrictions on women. Conservative interpretations of Islamic texts are routinely cited to argue that women's primary roles are domestic, that gender mixing is impermissible, or that women's mobility should be restricted ([Weiss, 2014](#)). At the same time, Islamic doctrine and history contain substantial support for women's participation in social life, with the Prophet Muhammad's first wife, Khadijah, being a successful businesswoman and numerous prophetic sayings emphasizing the obligation of seeking knowledge for both men and women. The gap between what the Islamic scriptural and historical tradition contains and what congregants usually hear from their imams on the topic of women's rights is important for the design of the study.⁸ If imams

⁶The important role of the mosque in all parts of community life dates back to the time of the Prophet Muhammad, whose mosque in Madinah served not only as a place of worship but also as a court for settling disputes, a center for distributing public revenue, a place to receive foreign delegations, and a shelter for the poor ([Omer, 2013](#)).

⁷In theory, women are allowed to participate in congregational prayer at mosques if there is a separate section for women but the lack of such spaces as well as the fact that there is no similar religious obligation on women to pray in congregations makes this rare in practice.

⁸Conservative religious discourse in Pakistan often emphasizes injunctions regarding veiling and gender segregation, drawing selectively on Quranic verses and prophetic traditions to argue against women's presence in public life. It is important to note that the sermon scripts used in this study do not challenge these interpretations, but rather draw on well-established verses and historical examples that are squarely within mainstream Sunni Islam but that are typically under-emphasized in regular Friday sermons. The experimental variation thus emphasizes prosocial arguments already present in the tradition rather than introducing novel

rarely address women’s rights in their sermons or if the usual interpretation is restrictive, then experimentally varying sermon content to foreground the prosocial elements of Islam offers an opportunity to test whether religious messaging can shift deeply held beliefs about gender.

2.3 The Auqaf Department and Study Mosques

The study is implemented through an official partnership with the Punjab Government’s Auqaf and Religious Affairs Department. The Auqaf Department is a provincial government body responsible for the administration of *Auqaf* properties which are Islamic charitable endowments known as *Waqf*, plural *Auqaf*, that include mosques, shrines, and associated land and other assets. The department was established in 1960 under the West Pakistan Waqf Properties Ordinance of 1959, which nationalized the administration of prominent religious endowments in the country. Several historians have chronicled the history of the department, arguing that its goal was to increase state control over important religious sites whose hereditary saints (*pirs*) were locally influential and a potential threat to state power, extract the large revenues these sites generated, and push the nation-building ideology of a “Singular Islam,” weakening the pluralistic local practices historically associated with many of these sites (Malik, 1996; Ibad, 2019). In informal conversations, department bureaucrats noted that the most important reason sites are likely to be acquired today is in the aftermath of a dispute regarding ownership. Nationalization is nonetheless the exception rather than the rule: Pakistan’s first economic census counted roughly 600,000 mosques nationwide (Rana, 2025), with the vast majority of mosques and shrines built, financed, and managed privately by local communities. The department’s mandate instead is the maintenance and regulation of a small fraction of these sites, often the most historically and religiously significant ones in the province. The sample utilized for this study is the universe of 309 Auqaf-administered mosques in the Punjab province.⁹

Crucially for this study, the Auqaf Department directly employs the imams who serve in its mosques, making them salaried government employees. Because Auqaf imams are state employees, the department exercises a degree of administrative authority over them that would not exist in privately-managed mosques, making the experimental design of this study possible. The department occasionally does direct imams to deliver content on specific topics, lending institutional precedence to the type of intervention studied here.¹⁰ However, such campaigns are rare, and in ordinary weeks, imams at Auqaf mosques exercise considerable discretion over the content of their Friday sermons, much like imams at privately-managed mosques. This contrasts with the types of centralized sermon regimes discussed earlier, such as those in Egypt or Turkey where sermons are mandated each week, and provides a natural

or heterodox claims, with the scripts being drafted by mainstream religious scholars employed by the Auqaf Department and approved by a committee comprising senior religious leadership.

⁹The Auqaf Department officially notes that it has 437 mosques under its jurisdiction, but when enumerators visited these sites, many had no evidence of government oversight nor any government staff. I also excluded around 20 mosques that were used during the pilot, as well as several key mosques in Lahore, such as Badshahi Mosque and Data Darbar, that attract tens of thousands of worshipers for Friday prayer, making treatment delivery and, particularly, measurement of attendance there difficult.

¹⁰For instance, in the past, imams have led public health campaigns, assisted with providing flood relief, and delivered messages of communal harmony in the aftermath of sectarian violence.

control group in which imams deliver their standard sermons with no state input as well as the opportunity to evaluate how business-as-usual sermons change in the aftermath of a prosocial messaging campaign.

Auqaf mosques are geographically dispersed throughout the province, spanning major urban centers, smaller towns, and rural areas. Their locations are shown on a map of Punjab in Figure A1. Approximately 13% are located in rural areas (the rest are urban), 37% are situated in residential neighborhoods (as opposed to commercial areas), and 25% also have an associated Sufi shrine. Almost all of the mosques in my sample are Sunni, with just one being Shia. According to estimates derived from baseline data, the median mosque is attended by approximately 250 congregants every week for Friday prayer and weekly Friday prayer attendance for all 309 mosques totals approximately 116,000 individuals. The Friday prayer is preceded by a sermon in Urdu, and occasionally Punjabi, and is anywhere from 15-45 minutes long.¹¹ An example congregation receiving treatment sermons is shown in Figure A2.

It is important to note that Auqaf mosques represent a specific subset of the broader mosque landscape in Punjab. They tend to be older, more historically prominent, and are more likely to be located in dense urban areas or near shrines compared to the hundreds of thousands of privately managed mosques across the province. Thus, we may worry that the congregants who attend Auqaf mosques differ relative to the broader population, especially problematic if attending a state mosque selects for more pro-state individuals. However, at least anecdotally, the vast majority of congregants that we interacted with at these sites tended not to be aware that the mosques were run by the state or even what the Auqaf department was. This is corroborated by my baseline survey, in which trust in state institutions was low and consistent with estimates from other studies with more generalizable samples.¹² Moreover, mosque choice in Pakistan is driven overwhelmingly by proximity: in my baseline data, 74% of respondents reported that distance was the most important factor in choosing where to pray. This suggests that while there is likely geographic selection, the congregants in my sample are broadly representative of the neighborhoods in which these mosques are located. I return to discussions of generalizability in Section 3.2.

3 Experimental Design and Data

This section describes the experimental design and data for this study. Fieldwork started in September 2024 and concluded in July 2026. Piloting was conducted in Summer 2023.¹³

¹¹The average sermon length is 27.9 minutes.

¹²The mean response to the question, “To what extent do you trust state institutions?” was 4.6 on a 0-10 scale, almost identical to the 4.9/10 documented in Acemoglu et al. (2020) for a random sample of rural male household heads in Punjab, Pakistan.

¹³The study was pre-registered at AEARCTR-0012715 and received ethical approval from Harvard University-Area Committee on the Use of Human Subjects with protocol ID IRB24-0495.

3.1 Experimental Design

3.1.1 Treatments

The primary treatments utilized for this study are sermon scripts with prosocial sermon content on either women’s rights or neighbors’ rights. Each treatment consists of two distinct scripts, delivered over consecutive Fridays, with mosques in the pure control group receiving business-as-usual sermon content without any prompting from the government. The treatment sermons were developed by two senior religious scholars employed by the Auqaf Department, and were reviewed and approved by an Auqaf leadership committee consisting of senior imams and department administrative staff to ensure that the content was theologically sound and uncontroversial. The two treatment topics were chosen for their policy relevance - low levels of women’s social and economic participation and limited social trust and cooperation are pervasive in Pakistan - and allow me to evaluate the extent to which the domain of imams’ messaging influences their effectiveness.

Each sermon script emphasizes unique components of women’s and neighbors’ rights within the Islamic tradition. The first women’s rights script discusses the importance of kindness towards women, drawing extensively from the life of the Prophet Muhammad, and ends with the importance of women’s education in Islam. The second script focuses on the importance of women’s participation in social, economic, and political life, using examples from the Quran as well as early Islamic history. On the other hand, the first neighbors’ rights script discusses the importance of neighbors in Islam, emphasizing the obligation to help neighbors in need, including through loans and by sending them food. While the second focuses on the importance of not harming neighbors, the role of the community mosque in building social trust, and community cleanliness as a religious and social obligation. All sermon scripts conclude with a concrete action that congregants are asked to perform in the following week to be able to apply what they have heard: the women’s rights sermons ask men to spend time discussing their aspirations for their daughters with their wives, while the neighbors’ rights sermons ask men to spend an hour the following week cleaning their neighborhood.

The following excerpts, illustrate the content of the scripts. The women’s rights sermons argue, for instance:

Dear brothers! In the name of God, the most compassionate, the most merciful... One of the rights of women is that they have been given the right to work... Hazrat Khadijah, the first wife of the Prophet had a business before Islam and after the marriage, the Prophet never prevented her from engaging in it, but on the contrary, appreciated her for helping him out with financial matters.

Similarly, the neighbors’ rights sermons ground their appeals in analogous prophetic teachings:

The Holy Quran and the Noble Prophet have given great importance to the relationship of neighborliness in their teachings and guidance... Islam outlines several rights of neighbors. The Prophet said: “He is not a believer who sleeps full while knowing his neighbor is hungry.”

To explore mechanisms, I also cross-randomize two additional dimensions within the treatment arms: the framing of the sermon content and whether imams encourage transmission of sermon content to wives. The framing dimension varies whether the final quarter of each sermon script is presented in fully religious language - grounding arguments solely in Quranic verses, stories from the Prophet Muhammad’s life, and Islamic history and law - or in secular language, appealing to modern practical, economic, and social concerns with little religious content.¹⁴ This variation helps evaluate what types of messaging are effective for imams to deliver, the extent to which the imam’s persuasive authority is tied to religious argumentation, and also allows me to test the model presented in Section 4, which predicts that treatment effects will depend on how the framing of content interacts with a person’s priors. The entire sermon cannot be framed in fully secular language because it would be culturally artificial in my context, so the secular framing arm should be thought of as making the sermon *more* secular rather than fully secular while the religiously-framed sermon is fully religious.¹⁵ The information-sharing dimension varies whether sermons conclude with an explicit plea from the imam asking congregants to share what they heard with their wives, or end without such a plea.¹⁶ The goal of this second cross-randomization is to evaluate whether increased sharing of religious information in the household increases effects for men (e.g. through reinforcement effects or the threat of cognitive dissonance) or attenuates them (e.g. by reducing the bargaining power of men after discussions on women’s rights). The control group, absent any treatment scripts, are not cross-randomized to either of these sub-treatments. Full sermon scripts, translated from Urdu into English, associated with each of the treatments arms are provided in Appendix.

This yields a 2x2x2 design within the treatment arms plus a control group, for a total of 9 experimental cells, as summarized in Table A1. Randomization was stratified by mosque size (i.e., Friday prayer attendance tercile) and residential/commercial status of the mosque to allow for clean evaluations of heterogeneity in treatment effects across these key dimensions at endline; for instance, larger mosques may provide stronger signals about social norms but less personal exposure to the imam, while the effect of the neighbors’ rights treatment may be reinforced in residential mosques if kinder neighbors following sermons further reinforce treatment effects.

To implement treatments, imams were invited to their respective Auqaf district offices where they received a presentation explaining the study and were given two printed sermon

¹⁴To illustrate the difference more concretely, the first religiously-framed women’s rights script argues, using sayings from the Prophet Muhammad, that seeking knowledge is obligatory for every Muslim and gives the example of the Prophet’s wives as teachers of senior companions, while the secular version argues that educated women can better support their children’s education, manage household budgets more effectively, and supplement household income. In a similar vein, the first religiously-framed neighbors’ rights script presents cleanliness as an act of faith carrying divine reward, while the secular version emphasizes that clean neighborhoods reduce the spread of disease and improve mental wellbeing.

¹⁵It should be noted, however, that the majority of mosque-goers do not listen to the full sermon and instead arrive only in time for the concluding remarks, so the religious/secular section is the part most likely to be heard by the majority of congregants.

¹⁶The information sharing sub-treatments append a brief concluding passage in which the imam asks congregants to convey what they have heard to the women in their households, invoking a saying from the Prophet Muhammad to: “Return to your families, stay among them, teach them (the religion), and instruct them to act upon it.” In the no-sharing condition, the sermons conclude with no such plea.

scripts to deliver over the following two consecutive Fridays as close to verbatim as possible. District head imams and senior Auqaf personnel were present at these meetings to address imams' concerns and to lend institutional weight to the request, maximizing the probability of compliance. Control imams were not invited to these meetings to minimize the potential for spillovers. I discuss compliance further in Section 3.3.

3.1.2 Outcomes

I pre-registered five primary behavioral outcome measures, three relevant to women's rights and two to neighbors' rights. All primary outcomes involve costly actions for respondents to take rather than self-reported attitudes or behavior. The lab-in-field games are played with real Pakistani rupees, equivalent to 42% of the average daily wage in my setting. For the main analysis, I aggregate the three women's rights outcomes into a standardized women's rights index and the two neighbors' rights outcomes into a standardized neighbors' rights index, following [Anderson \(2008\)](#) and standardizing relative to the control group mean and standard deviation.

The first women's rights outcome is a dictator game in which respondents were given PKR 300 (USD 1.06) and asked how much of it they would like to keep for themselves and how much to donate to a fund that helps women find employment. The amount allocated serves as a costly measure of respondents' willingness to financially support women's economic participation. The second is spouse survey consent: respondents were asked whether they consent to having their wife surveyed independently over the phone, a measure proxying men's willingness to give their wives greater autonomy in a setting where men routinely mediate women's interactions with outsiders. The third outcome is petition signing: respondents were asked whether they were willing to sign a public petition to increase women's representation in Pakistani parliament, as a measure of men's support for women's political participation. For neighbors' rights, the first key outcome is a parallel dictator game in which respondents allocated PKR 300 between themselves and a poor member of their community, serving as a measure of respondents' willingness to take costly actions to support neighbors. The second is community cleanliness: enumerators independently rated the cleanliness of the area where they performed each survey on a 0-10 scale prior to starting the survey, to evaluate whether the imam's plea to clean one's community translated into observable changes in the cleanliness of surrounding communities.

In addition to these costly behavioral measures, I also examine several secondary outcomes capturing self-reported beliefs and behavior to examine the more subtle ways in which sermon content may be having effects over and above my behavioral measures. To capture beliefs, I ask respondents a series of survey questions on a scale from 0-10 and construct indices measuring men's beliefs about women's competence, education, and employment, as well as beliefs about the importance of neighbors, trust in neighbors, and willingness to help neighbors; I examine effects on each of these indices separately as well as on versions pooling all questions. To separate effects on personal beliefs from those on second-order beliefs about social norms or religious beliefs, I modify a subset of these questions to ask what respondents think other men in their community believe or what they think Islamic teachings have to say. To capture self-reported behavior, I ask respondents a series of questions about their time-use, religious practices, as well as various metrics for interactions with neighbors and

other household members.

To measure spillover effects within the household, female enumerators survey wives over the phone conditional on both the husband’s and wife’s consent. Because wives are surveyed over the phone, they cannot be administered the costly behavioral measures, but the self-reported measures follow those for men closely. In addition, I collect measures of wives’ well-being and employment behavior, as well as their perceptions of their husbands’ time-use and beliefs to capture whether men are indeed behaving differently inside the home. To evaluate impacts on imams, I survey them in person, which allows me to collect both the belief measures and the behavioral outcomes administered to congregants with the exception of spouse survey consent which was not administered to imams in keeping with the cultural norms of my setting.

Finally, I explore equilibrium dynamics at the mosque level by collecting two key outcomes. On the supply side, I measure whether delivering the highly prosocial sermon content causes imams to endogenously change their future sermons - for example, due to changes in imams’ own beliefs or due to positive or negative responses from congregants after such content. To this end, I evaluate effects on imams’ “non-treatment” sermons - those delivered once the treatments conclude and imams are no longer prompted to deliver any specific content. Enumerators record and transcribe these post-treatment sermons, which are rated on a scale from 0-10 along a number of key content dimensions by a custom GPT developed specifically for the analysis of sermon content transcribed in the local language, yielding a quantitative measure of each mosque’s sermon content after the intervention has ended.

On the demand side, I evaluate whether my sermon treatments cause congregation size to change endogenously. Congregation size could increase if prosocial content is what congregants want to hear, decrease if congregants vote with their feet against content they dislike, or remain unchanged if mosque attendance is not very elastic to sermon content. Congregation size is recorded by enumerators who count the number of people present right before the Friday prayer begins, and serves as a revealed-preference measure of demand for the entire congregation, not just the men in my sample.

Impacts on men were assessed 2-4 weeks (an average of 2.6 weeks) after the second and final treatment sermon, while the timing of the wife and imam surveys was more variable, with surveys taking place an average of 5.7 and 3.2 weeks after the conclusion of treatments for wives and imams respectively. Effects on “non-treatment” sermon content and attendance were assessed both in the short and the long run: on the first Friday after the final treatment sermon, and then once more either 6 months or 1 year after the conclusion of treatments.¹⁷ Survey question order was randomized for all respondents to ensure that treatment effects were not confounded by order effects, such as earlier questions on one topic priming responses to the other topic or reduced attention at the time of later questions.

3.1.3 Estimating Equations

Treatment is assigned at the mosque-level while outcomes are measured at the individual level. I estimate the following primary intent-to-treat (ITT) specification:

¹⁷The staggered treatment roll-out created quasi-random variation in the time between the final treatment and this long run measurement: for 58% of mosques, the long-run measurement took place 6 months after the conclusion of treatments, and for the remaining 42% it took place 1 year after.

$$y_{im} = \alpha + \beta_1 \text{WomenRights}_m + \beta_2 \text{NeighborRights}_m + \theta_s + \epsilon_{im} \quad (1)$$

where y_{im} is the outcome of interest for individual i in mosque m measured at endline, WomenRights_m and NeighborRights_m are indicators for whether the individual received the women’s rights or neighbors’ rights treatment sermons respectively, θ_s represents fixed effects for the randomization strata s , and ϵ_{im} is the error term.¹⁸ Standard errors are clustered at the level of the treatment, i.e., at the mosque level. The coefficients β_1 and β_2 estimate the average ITT effect of more prosocial sermon content on women’s and neighbors’ rights relative to control group business-as-usual sermons. The same specification is used to estimate effects on wives and imams. For mosque/imam-level outcomes, I estimate analogous specifications at the mosque/imam-level but with robust standard errors. For self-reported outcomes measured at baseline, I include the baseline value of the outcome to improve precision.

In addition to this main specification, to evaluate impacts of secular vs religious framing, I also disaggregate my treatment indicators as follows:

$$y_{im} = \alpha + \beta_1 \text{WomenReligious}_m + \beta_2 \text{WomenSecular}_m + \beta_3 \text{NeighborReligious}_m + \beta_4 \text{NeighborSecular}_m + \theta_s + \epsilon_{im} \quad (2)$$

where WomenReligious_m , WomenSecular_m , $\text{NeighborReligious}_m$, and NeighborSecular_m represent religious and secular framing for the women’s rights and neighbors’ rights treatments respectively. By comparing whether β_1 and β_2 as well as β_3 and β_4 are significantly different from each other, I test the extent to which framing of sermon content matters. An analogous specification is used to estimate the effects of my information-sharing sub-treatments.

3.2 Sample and Data

My primary sample consists of male congregants drawn from the universe of 309 Auqaf mosques in Punjab, Pakistan. From each mosque, I randomly sampled and recruited 15 men, with recruitment taking place in two stages. First, the imam introduced the study team during his Friday sermon and asked congregants to volunteer for a research study on the sources of individuals’ religious and social beliefs and behavior; an enumerator then collected phone numbers from as many volunteers as possible, with a target of at least 50 per mosque. Then, congregants were called back in random order from the list of phone numbers, and the first 15 to fulfill the recruitment criteria via a brief phone survey were enlisted for the study. The recruitment criteria were: 1) the respondent had to have heard at least 10 minutes of the previous two Fridays’ sermons in the same mosque, 2) be aged between 18 and 50, and

¹⁸Strata fixed effects were indicators for: 1) residential/commercial status of the mosque, 2) mosque size attendance tercile at baseline, 3) whether the mosque was a misfit during randomization (for 21 mosques, stratification cell sizes were not divisible by the number of treatment cells, and these misfit mosques were pooled across strata and randomly assigned to treatment groups with the same treatment probabilities used in the main randomization).

3) be married.¹⁹ The first criterion selects regular sermon listeners at the study mosque - excluding those who attend only for the prayer itself, are temporary migrants, or frequently change mosques - and thereby increases the likelihood that respondents were present for the treatment sermons to be delivered several months after recruitment. The second and third recruitment criteria were chosen to increase the likelihood that the men surveyed had relatively young daughters for whom educational and labor market decisions were salient as well as wives to allow for the spouse survey consent outcome and information-sharing sub-treatments to be meaningful.

I recruited a total of 4,667 men at baseline, out of which 3,892 (84%) completed the endline survey. Table A2 reports baseline summary statistics for the endline sample and tests balance across the three main treatment arms. The average respondent is 38 years old with 10 years of education and a monthly household income of approximately PKR 42,000 (USD 150.6). He prays 3.9 of the five daily prayers and attended 3.6 Friday sermons in the past month, consistent with a sample screened on regular mosque attendance. Imam trust is very high at 8.6/10 relative to state trust which is relatively low at 4.7/10. Baseline attitudes toward neighbors are relatively warm: respondents rate the importance of neighbors at 7.3/10 and trust in neighbors at 7.0/10, though willingness to lend to a neighbor is lower at 5.9/10. Attitudes toward women’s rights are more conservative: agreement that men make better decisions than women averages 8.1/10, while support for women delaying marriage for education and for the importance of women having jobs are both around 5/10. Table A2 shows that the endline sample is balanced across my main treatment arms on key variables collected at baseline.

Data collection for this project proceeded district by district. Baseline surveys were conducted in person between August 2024 and January 2025. Treatment delivery and endline surveys followed from January 2025 to January 2026 and were staggered in the same district-wise order due to logistical constraints arising from the geographic dispersion of mosques. The average gap between a respondent’s baseline and the treatment sermons at his mosque was 7.7 months. This gap, together with the fact that neither the imams nor the study team ever indicated that the treatment sermons were related to the study or that the study’s purpose was to study sermons, reduces the potential for experimenter demand effects that can plague similar interventions in other settings.

3.3 First Stage

To evaluate how closely imams followed the treatment scripts, an enumerator was present in the mosque at the time of the treatments to record the audio of the sermons. Recordings were transcribed and the content rated along several dimensions by a custom GPT trained for this purpose. Figure 1 shows average ratings for how closely imams followed the overall message of both sermon scripts. The rating for each mosque is computed by taking the average of the two compliance ratings, one for each of the treatment sermons. As can be seen in the figure, the overall compliance was relatively high with an average rating of 7/10 over all treatment mosques. Importantly, compliance is very similar across the various treatment

¹⁹8.2% of those called were ineligible because they had not heard the previous two Fridays’ sermons in the same mosque, 11.3% were not aged between 18-50, and 11.7% were unmarried. Overall, 71.5% of those administered the phone recruitment survey were found to be eligible for the study.

arms, indicating no differential compliance and allowing for clean comparisons of TEs in the various treatment groups. It should be noted, however, that because imam adherence is imperfect and there is no guarantee that the respondent who attended the mosque at baseline was also present for both treatment sermons in the same mosque, the results in the sections to follow should be read as intent-to-treat effects of attending a treatment mosque at baseline, and likely understate the effect of hearing two highly prosocial sermons in full.²⁰

While the compliance ratings tell us how faithfully the imams followed the assigned scripts, they do not tell us how the treatments caused sermon content to change relative to business-as-usual sermons in control mosques. If imams frequently discuss topics such as women’s and neighbors’ rights in their standard sermons already, then we may be concerned about weak treatments that are unlikely to lead to much change in congregants’ beliefs and behavior. In Figure A3, I find that this is not the case by comparing the content of treatment relative to control sermons in treatment weeks. The treatments moved sermon content sharply, causing imams to focus far more on rights (the rights rating in control mosques is 0.8/10 relative to 7.2/10 in treatment mosques) and social topics while somewhat crowding out purely religious topics. The treatments also cause content to become less conservative and less likely to contain hate speech: ratings of conservative content fall from 7.1 to 5.9, and hate speech, already uncommon at 1.3/10 in control mosques, more than halves to below 0.5/10 in treatment mosques.

This exercise also shows some minor differences between the women’s rights and neighbors’ rights treatment arms; the neighbors’ rights treatments are less likely to focus on historical topics and somewhat less likely to discuss political or economic topics, owing to differences in the treatment scripts.²¹ When it comes to the key dimensions of conservativeness and the extent to which rights, religious topics, and social topics are covered, however, both women’s and neighbors’ rights treatments received very similar ratings.

4 Theoretical Framework

To organize the interpretation of my treatment effects, I present a simple model of belief formation in which congregants value both religious and secular objectives and update their beliefs in response to the information in sermons. The standard Bayesian benchmark presented in this section delivers two sharp predictions. First, comparing treatment arms within a framing condition (the religious women’s and neighbors’ rights arms with each other

²⁰A key recruitment criteria of the study - that the respondent must have listened to at least 10-minutes of the previous two Fridays’ sermon in the same mosque - helps increase the likelihood that the congregant was present at the time of the treatments but does not guarantee it especially since the average time between baseline and treatments was 7.7 months. We could not ask the respondent directly whether they attended the treatment sermon in their original mosque since this would reveal the nature of the treatments thereby increasing the likelihood of surveyor bias but we did ask respondents to report the number of sermons they attended in any mosque in the previous month. The mean for this question was high at 3.6/4, suggesting that most respondents were likely present for both treatment sermons.

²¹The women’s rights scripts had more historical stories to draw from relative to the neighbors’ rights sermons given the nature of the topics. Moreover, the women’s rights sermons emphasized the importance of women’s economic and political participation causing the “political” and “economic” ratings to be relatively high, while the analogous content did not apply for neighbors’ rights leading to relatively low ratings.

or the secular treatment arms with each other), the ranking of treatment effects must be the inverse of the ranking of the corresponding priors. Second, as per standard Bayesian logic, the model permits no cross-domain interaction: updating from a signal depends only on priors within the same domain. In Section 6, I test both predictions and present a modification to the standard framework in which religious priors gate secular persuasion.

4.1 A Simple Bayesian Framework

Mosque-goers have preferences over consumption in this life and the next. Action y^* is God's will on earth and maximizes consumption in the after-life but is uncertain. Similarly, action z^* maximizes consumption during life and is also uncertain. Individuals choose an action to jointly minimize the weighted distance to y^* and z^* . I assume quadratic preferences and define α as religiosity, the weight the individual places on conforming to God's will relative to the secular optimum. Formally, individual i chooses y_i to maximize expected utility as follows:

$$-E_i(\alpha(y_i - y^*)^2 + (1 - \alpha)(y_i - z^*)^2) \quad (3)$$

The FOC and some algebra gives us optimal y_i ,

$$y_i = \alpha E_i(y^*) + (1 - \alpha)E_i(z^*) \quad (4)$$

Individuals have priors over y^* : $s_i \sim N(y^*, \frac{1}{p_y})$ where p_y indicates the subjective precision reflecting confidence in one's own prior. Similarly, priors over z^* are: $z_i \sim N(z^*, \frac{1}{p_z})$.

Control group gets no signal so the decision is simple:

$$y_i^C = \alpha s_i + (1 - \alpha)z_i \quad (5)$$

For the treatment group, individuals get either a religious $R_i \sim N(y^*, \frac{1}{p_R})$ or non-religious $N_i \sim N(z^*, \frac{1}{p_N})$ signal from the imam in the form of a sermon about the optimal action. As rational bayesians, treatment individuals update their beliefs and the updated choice is:

$$y_i^{Rel} = \alpha \frac{p_y s_i + p_R R_i}{p_y + p_R} + (1 - \alpha)z_i \quad (6)$$

$$y_i^{Sec} = \alpha s_i + (1 - \alpha) \frac{p_z z_i + p_N N_i}{p_z + p_N} \quad (7)$$

Treatment effects are given by subtracting equation 5 from equations 6 and 7. The treatment effect for religious framing is:

$$y_i^{Rel} - y_i^C = \alpha \frac{p_R}{p_y + p_R} (R_i - s_i) \quad (8)$$

And, the treatment effect for secular framing is:

$$y_i^{Sec} - y_i^C = (1 - \alpha) \frac{p_N}{p_z + p_N} (N_i - z_i) \quad (9)$$

4.2 Predictions

Equations (8) and (9) deliver a few intuitive predictions: treatment effects are increasing in signal surprise, trust in the imam’s religious or secular messaging, and, for religious framing, increasing in religiosity which conversely dampens the secular treatment effect. Moreover, since both religious arms are scaled by $\alpha \frac{p_R}{p_y + p_R}$ and both secular arms by $(1 - \alpha) \frac{p_N}{p_z + p_N}$, these terms difference out when comparing topics with the same framing. Thus, the ranking of treatment effects across topics must be the inverse of the ranking of the corresponding priors. Finally, the model permits no cross-domain interaction. Religious priors do not enter the secular treatment effect in equation 9, and secular priors do not enter the religious treatment effect in equation 8, so updating from a signal depends only on priors in the domain of that signal. I take these predictions to the data in Section 6.

5 Results

In this section, I present the effects of my treatments on men, women, and imams, as well as on mosque-level congregation size and sermon content.

5.1 Women’s Rights Outcomes

Table 1 presents the effects of the treatment sermons on my primary women’s rights outcomes. The outcomes in columns (1)-(3) are allocations in the women’s employment dictator game, spouse survey consent rates, and petition signing rates respectively, while column (4) pools these outcomes as a women’s rights index. Sermons have large and statistically significant impacts on these costly behavioral outcomes. Men that attended the women’s rights mosques allocated PKR 37 (33%) more to a fund supporting women’s employment in the dictator game, were 8.5 p.p. (19.5%) more likely to consent to having their wife be surveyed, and 4.9 p.p. (11.2%) more likely to sign a petition supporting women’s political participation (though the effect on the petition outcome is statistically insignificant). Pooling these outcomes together, assignment to receive two sermons on women’s rights increased the women’s rights index by a sizable 0.23 SD.

I next examine effects on self-reported measures of men’s beliefs and behavior as they pertain to women. Appendix Table A3 presents treatment effects on belief indices constructed from survey questions about women’s competence, education, and employment in columns (1)-(3) respectively, and column (4) pools all questions. Women’s rights sermons produce a statistically significant effect of 0.11 SD on the pooled belief index, driven primarily by a

large shift in beliefs about women’s education (0.18 SD). Effects on beliefs about women’s competence and employment are positive (0.07 SD and 0.11 SD respectively) but statistically insignificant. In Table A4, I evaluate effects on self-reported behavioral outcomes. Women’s rights sermons reduce the amount of time men report their wives spend on household chores and increase men’s own comfort in talking to their wives, but have no effect on the time men spend with family members or on men’s perceptions of how much time their wives spent working or outside the home.

For comparison, the 0.11 SD and 0.23 SD effects on beliefs and behavior respectively is within the range of other leading gender interventions: Dhar, Jain and Jayachandran (2022) finds that a 2-year school-based gender curriculum for adolescents shifts gender attitudes by 0.18 SD, Field et al. (2021) evaluates the impact of increasing women’s financial control and finds impacts of 0.11 SD and 0.09 SD on a labor market engagement index and men’s perceived norms respectively, and Bursztyn, González and Yanagizawa-Drott (2020) finds that correcting misperceptions about social norms increases men’s willingness to sign their wives up for a job-matching platform by 36%.

5.2 Neighbors’ Rights Outcomes

Table 2 presents the effects of the treatment sermons on my primary neighbors’ rights behavioral outcomes. The outcomes in columns (1) and (2) are allocations in the poor neighbor dictator game and enumerator assessed community cleanliness respectively, while the outcome in column (3) is the neighbors’ rights index that pools both outcomes. Men in the neighbors’ rights treatment donated PKR 24 (19%) more to help poor neighbors in the dictator game, but I find no statistically significant change in community cleanliness, suggesting that the imam’s plea to spend an hour in the following week cleaning the neighborhood did not translate into improvements in community cleanliness observable by enumerators. The overall pooled effect on the neighbors’ rights behavioral index is 0.19 SD.

In Appendix Table A5, I look at analogous effects on belief indices about neighbors that quantify the importance individuals place on neighbors, their trust in neighbors, and likelihood of helping neighbors in columns (1)-(3) respectively, while column (4) pools all questions. Examining the results, neighbors’ rights sermons produce positive but statistically insignificant effects on all neighbors’ rights indices: individuals report a 0.10 SD greater importance of neighbors, a 0.05 SD increase in trust in neighbors, and 0.07 SD greater likelihood of helping neighbors with a pooled index effect of 0.06 SD, suggesting that sermons on women’s rights have a larger impact on beliefs relative to sermons on neighbors’ rights.

In Appendix Table A6, I look at additional self-reported behavioral outcomes covering men’s time use and interactions with neighbors. Neighbors’ rights sermons increased the time individuals reported spending with neighbors or in activities that improve their community (19% and 39% respectively), and men also report knowing more neighbors and asking for and receiving help from them more often, though there is no impact on frequency of food sent to neighbors.

Interestingly, while there are no cross-topic effects of the treatments on my behavioral outcomes, Table A5 shows that the women’s rights sermons make beliefs about neighbors less prosocial: men who received women’s rights sermons report a 0.14 SD lower likelihood of helping neighbors and a significant 0.08 SD reduction in the pooled neighbors’ rights index.

On the other hand, an analogous cross-domain effect does not occur for sermons on neighbors’ rights that actually increased the pooled women’s rights index by 0.05 SD as can be seen in Table A3 (though this effect is insignificant). This suggests that the women’s rights sermons led to a substitution of prosocial beliefs from one group to another while neighbors’ rights sermons improved prosocial beliefs across domains albeit weakly.²²

5.3 Downstream Impacts on Wives

A distinctive feature of the Friday sermon is that it is delivered exclusively to men, so any effects on women must operate through intra-household transmission, by either husbands sharing what they’ve heard with wives or husbands changing their own behavior in ways that affect their wives, or both. Table 3 presents TEs on the beliefs and well-being of wives that were surveyed by phone conditional on the husband’s consent. Wives of men who received women’s rights sermons report a 0.19 SD increase in prosocial beliefs about women, and the effect on their own well-being is positive but imprecisely estimated (0.12 SD). On the other hand, wives of men who received sermons on neighbors’ rights report no change in prosocial beliefs about neighbors even as they update their beliefs on women’s rights, potentially reflecting the downstream impact of the general prosociality effect observed from the neighbors’ rights treatments discussed above.

In Table A8, I find no impact on whether wives have a job, are looking for a job, or on beliefs about difficulty of finding a job if wives looked. In Table A9, I investigate wives’ perceptions of their husbands behavior and beliefs and find that wives report their husbands spending less time talking to family but perceive them as being more supportive of their daughters’ education.

These downstream effects on wives, while necessarily measured conditional on consent and therefore subject to selection concerns, provide suggestive evidence that sermon content permeates throughout households beyond just the direct impact on men. To test for the role of selection in driving these results, in Table A10, I evaluate the extent to which my endline sample of wives was balanced at baseline. Given the low level of overlap between my baseline and endline sample of wives, I can only do this exercise using 19% of my endline observations, but I find that this sub-sample of wives is balanced on almost all variables including the belief indices measured at baseline.²³ The wives’ subsample, however, is small, so I turn to husbands to assess balance more comprehensively. If the wife effects are driven purely by sermons changing the composition of husbands that consent to having their wives surveyed, the endline sample of consenting husbands should be unbalanced at baseline. In Table A10, I find that husbands of the full sample of endline wives are balanced, suggesting that the wife effects are unlikely to be driven purely by selection.

²²In Table A7, I evaluate the effects of my treatments on overall prosociality more explicitly. Columns (1) and (2) reproduce the belief effects on my pooled women’s rights and neighbors’ rights indices, while column (3) collapses all belief questions into a single prosociality index. The results show that the overall effect of both women’s rights and neighbors’ rights treatments on overall prosociality is very similar.

²³The exception is whether the wife has a job; wives of husbands in the neighbors’ rights treatment group are 13.6 p.p. more likely to have a job at baseline while wives in the women’s rights treatment group are balanced.

5.4 Supply-Side Effects: Post-Treatment Sermon Content and Imams

I next examine whether the changes to sermon content induced by the treatments persisted even once the treatments concluded or if, conversely, imams renege later on what they said during the treatment sermons. In Table 4, I examine the content of the first sermon the imams delivered after the treatments concluded, recorded the first Friday after the final treatment sermon. It is worth reiterating that imams were provided with no instructions for this sermon, so any effect should be interpreted as reflecting the imam’s own personal decision as to what to say. Imams who delivered women’s rights and neighbors’ rights sermons continue to discuss rights, their sermons become less conservative, and are less likely to feature hate speech. In Table A11, I explore effects on additional content dimensions and find that the increase in rights related content comes from less discussion of political, economic, and historical topics while there is no change in religious content.

One explanation for this persistence is that publicly proclaiming prosocial content over multiple sermons changed imams’ own beliefs, which I test by examining effects on the imams themselves. Table A12 shows that delivering sermons on women’s rights causes imams to behave in ways and report beliefs that are more prosocial towards women (0.19 SD and 0.17 SD respectively). Interestingly, while delivering sermons on neighbors’ rights does not seem to change imams’ beliefs and behavior towards neighbors, it does cause imams to report much more prosocial beliefs about women (a 0.21 SD effect), mirroring the domain-independent prosociality effect of the neighbors’ rights sermon on men and wives.

In Table A13, I explore potential unintended negative consequences of my sermon treatments from a policy perspective. For instance, we may imagine that utilizing imams for information dissemination emboldens them to speak on topics outside their expertise or that it changes their beliefs about the extent to which religion should be a part of politics and society. The results show that the treatments do not change imams’ beliefs about the extent to which they should discuss non-religious topics (column 1), give advice on voting or health (columns 2 and 3), and do not make them more likely to think that religion should be a part of politics (column 4).²⁴ We may also worry that being asked to deliver sermons by the state, especially if they contain content which may alienate their audience, may reduce imams’ sense of autonomy or satisfaction with their government job. Columns 5 and 6 of Table A13 suggest that this was not the case.

5.5 Demand-Side Responses: Attendance

I conclude the results section by examining whether the sermon treatments generate endogenous impacts on the demand-side by changing the number of people that attend the congregation in treatment mosques. The effects on mosque attendance are presented in Table 5. Column (1) shows that mosques assigned to women’s rights sermons experienced a 12% decline in Friday prayer attendance relative to the control group, while no attendance effect is observed for mosques assigned to neighbors’ rights sermons in any specification. The log

²⁴In Table A14, I also evaluate whether male respondents trust their imam more especially with respect to voting or worldly matters and find that this is not the case. I also do not find that trust in state institutions is lower at endline for men in my treatment groups.

specification in column (1) is my preferred specification: attendance is count data and a small number of very large congregations generate outliers that prevent level effects from being detected in the raw headcounts as is shown in column (2). Once the raw data is winsorized, however, the effect re-emerges: winsorizing at the 99th percentile in column (3) yields a statistically significant decline of 43 congregants (11.1% of the control mean), while winsorizing at the 95th percentile in column (4) produces a similar decline of 9.6%. These effects are at the mosque-level and so the demand-side attendance effects represent impacts on the full congregation, beyond just those respondents included in the study.

I interpret this as evidence of backlash to the women’s rights content: while the sermons shifted the beliefs and behavior of some men, it also drove some congregants away. In Table A15, I investigate whether these effects appear after just 1 week of treatment delivery or whether the negative effect of women’s rights sermons on attendance take two weeks of prosocial content delivery. Attendance after the first treatment sermon falls by almost as much as after the second, suggesting that the drop is driven by the initial exposure to women’s rights content rather than accumulated with repeated delivery.

6 Mechanisms

In this section, I explore the mechanisms that may be driving my treatment effects. I first disaggregate my treatments by religious and secular framing and use the resulting treatment effects to test the predictions of the standard Bayesian framework of Section 4. The results reveal an asymmetry that the standard model cannot fully account for given the structure of individuals’ priors, and I present a modification in which priors in one domain are allowed to impact updating from signals in another. I then turn to other potential mechanisms that may help explain my results.

6.1 Testing the Model: Religious vs Secular Framing

In the standard Bayesian model presented earlier, the treatment effect rankings should correspond to prior rankings: while the rankings will be moderated by religiosity and precisions for comparisons within topics, across topics with the same framing, the treatment effect ranking should perfectly follow the inverse of the prior ranking. Moreover, the model permits no cross-domain interaction, so updating from a signal should depend only on priors in the domain of that signal. I test these predictions with my data.

In Table 6, I disaggregate my treatments by whether they were framed in religious or secular language. Doing so reveals a striking asymmetry. For women’s rights sermons, religious framing produces substantially larger effects than secular framing: the religiously framed sermons increase the women’s rights index by 0.33 SD, while the secularly framed sermons produce a much smaller effect of 0.14 SD (a difference of 0.19 SD, significant at the 1% level). For neighbors’ rights sermons, however, the pattern reverses: secularly framed sermons produce a larger and statistically significant effect of 0.25 SD on the neighbors’ rights index, while religiously framed sermons produce a smaller effect of 0.14 SD which is insignificant. I am not powered to reject the null of no difference in the case of the neighbors’ rights treatment effects, but the difference of 0.11 SD is substantive. Similar prosocial content

is thus more effective when grounded in religious arguments for women’s rights but in secular arguments for neighbors’ rights.

Whether this asymmetry is consistent with the model’s predictions depends on the structure of individuals’ priors. In Figure 2, I present individuals’ baseline religious and secular priors on a 0-10 scale with higher values meaning more prosocial priors. To construct religious priors, I take the average rating individuals gave across a set of questions asking what Islamic teachings say about the importance of, trust in, and obligations toward neighbors in the neighbors’ rights case, and about women’s decision-making, education, and employment in the women’s rights case. Constructing secular priors is less straightforward, so I take the average of two measures: individuals’ personal priors and their priors about social norms. Personal priors average ratings from the same set of questions but asking for individuals’ own personal beliefs about neighbors and women, while the norms questions ask for individuals’ second-order beliefs about people from their community. The two secular measures give almost identical values - suggesting a lack of misperception about social norms - so I take their average as the secular prior, but conclusions are unchanged if I use either measure alone.

As is clear from Figure 2, individuals’ priors on women’s rights are low in absolute terms, and religious priors are less prosocial than secular priors (3.7/10 and 4.2/10 respectively), while neighbors’ rights priors are relatively high, with religious priors exceeding secular priors (8.0/10 vs 6.7/10). Comparing these prior rankings to the treatment effect ranking in Table 2, the data largely conforms to the model’s predictions. Within a given topic and across framings, lower priors produce larger effects: religious framing dominates for women’s rights (0.33 SD vs 0.14 SD) while secular framing dominates for neighbors’ rights (0.26 SD vs 0.14 SD). Even across topics and within framing, the religious treatments follow prior rankings (the far lower religious priors on women’s rights produce the largest effect), but comparing the secular arms breaks the pattern. The secular treatment effect for women’s rights is very low despite low priors while the secular treatment effect for neighbors is high despite relatively high secular priors. This suggests that updating from secular signals depends on something beyond secular priors, and the data point to religious priors: secular persuasion is weak when religious priors are low and strong exactly when they are high. I next formalize this intuition.

6.2 A Model of Cross-Domain Permissibility

I modify the standard utility function to allow religious priors to affect the weight individuals place on the secular objective. Individual i now maximizes:

$$- E_i(\alpha(y_i - y^*)^2 + (1 - \alpha)\phi(s_i)(y_i - z^*)^2) \quad (10)$$

The distance to the secular optimum is now also weighted by the religious permissibility function ϕ , which is positively valued and weakly increasing in the religious prior. This allows for the possibility that if individuals’ religious priors are too low, they may care less about matching their secular ideals.²⁵ The first-order condition gives $y_i = \tilde{\alpha}E_i(y^*) + (1 - \tilde{\alpha})E_i(z^*)$,

²⁵In deeply religious contexts, an individual may fully understand and believe a secular signal about, for example, the financial benefits of women working, but feel that acting on it is not permissible given their religious commitments. Conversely, an individual with strong religious priors on the importance of neighbors

where $\tilde{\alpha} = \frac{\alpha}{\alpha + (1-\alpha)\phi(s_i)}$ is the effective religiosity: the weight on the religious objective after accounting for permissibility. Updating proceeds exactly as before and treatment effects become:

$$\begin{aligned} y_i^{Rel} - y_i^C &= \tilde{\alpha} \frac{p_R}{p_y + p_R} (R_i - s_i) \\ &= \frac{\alpha}{\alpha + (1-\alpha)\phi(s_i)} \frac{p_R}{p_y + p_R} (R_i - s_i) \end{aligned} \tag{11}$$

$$\begin{aligned} y_i^{Sec} - y_i^C &= (1 - \tilde{\alpha}) \frac{p_N}{p_z + p_N} (N_i - z_i) \\ &= \frac{(1-\alpha)\phi(s_i)}{\alpha + (1-\alpha)\phi(s_i)} \frac{p_N}{p_z + p_N} (N_i - z_i) \end{aligned} \tag{12}$$

Of course, setting $\phi = 1$ returns the standard model. However, with $\phi \neq 1$, religious priors impact persuasion from secular signals: when religious priors are low, individuals place little weight on the secular objective and under-respond to secular signals, while the reverse holds when religious priors are high. At least descriptively, allowing religious priors to gate secular persuasion in this way reconciles the pattern of treatment effects with the baseline prior results. In the women’s rights domain, low religious priors constrain secular persuasion and raise effective religiosity, explaining both the small secular effect and the very large religious effect; in the neighbors’ rights domain, high religious priors license engagement with secular arguments while lowering effective religiosity, explaining the reverse.

The updated model’s key new prediction, and a sharp departure from standard Bayesian models, is that the secular treatment effect should be increasing in religious priors, which I test in Table A17. I run my religious-secular disaggregated specification but interact the treatment dummies with indicators for above-median baseline religious and secular priors in the relevant domain. For ease of readability of the table, I pool the neighbors’ rights group with control in the first column and women’s rights group with control in the second, though results are stable in the fully disaggregated specification. For women’s rights, the secular treatment effect on the behavioral index nearly triples for respondents with above-median religious priors and this difference is significant at the 10% level. Religious priors thus increase updating from secular signals, in stark contrast to the standard Bayesian case of no cross-domain interaction. For neighbors’ rights, the analogous interaction is also positive but imprecisely estimated. All other interactions in the table are either negative or close to 0, consistent with the signal surprise prediction from Bayesian updating.

might feel that their religious foundation licenses them to engage with secular knowledge. In principle, the modification could be symmetric, with secular priors gating religious persuasion through an analogous function ψ , but I focus on religious permissibility because the puzzle above relates to the secular treatment effect rankings and also because, in my setting, religion is the domain that determines what is permissible rather than the reverse.

6.3 Other Mechanisms

I next explore additional mechanisms that may be driving treatment effects. The first is information sharing: sermon effects may operate not only through what men hear at the mosque but through what they subsequently share with others, particularly wives. The direction of any such effect is theoretically ambiguous. Sharing sermon content could amplify effects by prompting useful household conversations, or by raising the threat of cognitive dissonance for men who relay prosocial messages but fail to act on them (Aronson, Fried and Stone, 1992). Alternatively, sharing content designed to increase women’s autonomy and well-being could shift household bargaining dynamics in ways men prefer to avoid, dampening effects. My information-sharing sub-treatments, in which imams end the sermon by asking congregants to share what they heard with wives, allow me to test whether exogenously encouraging sharing changes treatment effects.

Table A16 presents treatment effects disaggregated by these sub-treatments. The information sharing plea produces relatively modest and statistically insignificant differences in treatment effects. For women’s rights sermons, the sharing treatment yields a coefficient of 0.28 SD compared to 0.18 SD in the no-sharing condition, but I cannot reject the null of equality. For the neighbors’ rights sermons, the no-sharing treatment arm actually produces larger effects (0.26 SD vs 0.12 SD), though again the difference is not statistically significant. Taken together, I find no evidence that explicitly encouraging men to share sermon content with wives meaningfully amplifies or attenuates treatment effects, potentially suggesting that the plea adds little to whatever information sharing already occurs naturally after Friday prayers. Notably, the concern that sharing women’s rights content could dampen effects by threatening men’s household bargaining position finds little support in the data; if anything, the coefficients suggest that sharing content that is prosocial towards women with wives increases rather than decreases treatment effects for women’s rights sermons, though this difference is insignificant.

Another mechanism that could be driving treatment effects is social norms: what is unique about sermons as a persuasion tool is that they are delivered publicly to a full congregation, so each listener gets not only a signal about religious doctrine but also about others’ beliefs, potentially shifting behavior through effects on second-order beliefs. Alternatively, the social norms component may matter less and effects may run through the effect of sermons on individuals’ religious beliefs. In Table A18, I evaluate which channel dominates by decomposing endline beliefs into personal beliefs, beliefs about social norms, and religious beliefs. The results suggest that the impacts of sermons derive from factors beyond norms: the neighbors’ rights sermons move religious beliefs (0.17 SD) while leaving perceived norms unchanged, and the women’s rights sermons move all three categories by similar magnitudes though the effects are insignificant. Congregants thus appear to view sermons more as a signal about religious truth rather than as information about what others believe, once again highlighting the importance of religious priors for belief updating in this setting.

The norms channel also generates testable predictions across mosques. If sermons persuade by informing listeners about others’ beliefs, effects should be larger where that signal is stronger, for example in bigger congregations where more of the community is observed hearing the same message, and in residential mosques, where congregants know that the men praying

beside them are their own neighbors.²⁶ In Table A19, I interact my pooled treatments with mosque attendance terciles and the residential/commercial status of the mosque, variables that my randomization was stratified by. Treatment effects on women’s rights outcomes are very similar across both dimensions. For neighbors’ rights, point estimates rise with mosque size and are larger in residential mosques, but no interaction term is statistically distinguishable from zero.

7 Conclusion

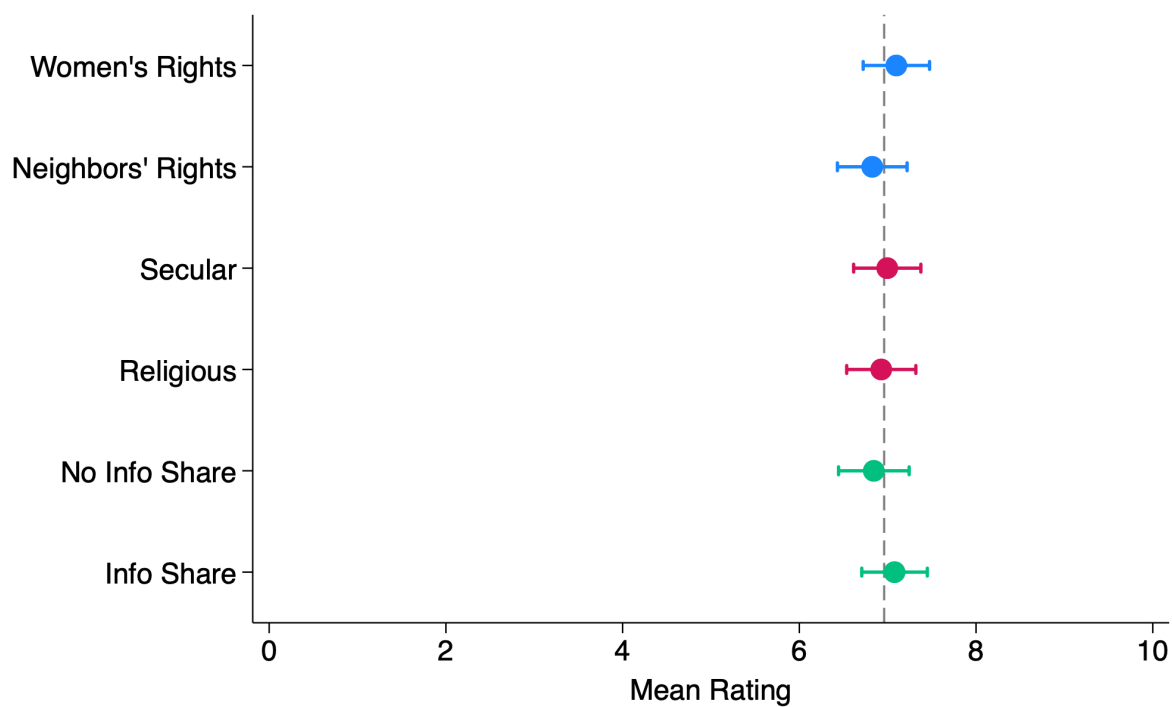
In this paper, I study how religion drives beliefs and behavior by focusing on a key religious institution in Muslim societies: the Friday sermon. Working with the Punjab Auqaf Department, I randomized sermon content in 309 state-administered mosques in Punjab, Pakistan, and found sizable effects of just two sermons on women’s or neighbors’ rights. Men who received the sermons shifted their costly behavior by 0.23 SD and 0.19 SD respectively, with suggestive evidence that effects extended downstream to wives who never heard the sermons themselves. These are large impacts coming from a fairly light-touch intervention: the treatments consisted of roughly an hour of content delivered through an institution congregants already attend, at essentially zero marginal cost to the state. A key limitation of the study is the relatively short time horizon of my outcomes, measured 2-4 weeks after treatments concluded. Whether the effects I document persist, remains an important and open empirical question.

The conclusion that sermons can be systematically used as a policy tool should, however, be made with caution. Mosques that delivered women’s rights sermons lost 12% of their congregations, so sustained campaigns of information dissemination through sermons risk alienating the very audiences they seek to reach. The use of sermons for behavioral change also raises important normative concerns. State direction of religious content sits uneasily with longstanding arguments for separating Church from State, and the same machinery that delivered prosocial messages in this study could be used to support more controversial agendas. Indeed, control over sermon content remains actively contested across the Muslim world, with countries ranging from full centralization, as in Turkey and Egypt where the same state-mandated sermon is delivered in all mosques, to regimes like Pakistan’s where imams usually have broad discretion over what to say. Yet these concerns stand in tension with the status quo in many Muslim-majority countries, where women’s labor force participation remains among the lowest in the world and religious arguments are routinely invoked to justify restrictions on women’s education, employment, and mobility. Navigating between these positions is a difficult tightrope for policymakers to walk, and the political economy of interactions between states and religious leaders is an important area for further research.

²⁶Neighbors are precisely the people whose views are most relevant for the behavior of a congregant’s wife, who spends her days in the neighborhood, and, in the case of the neighbors’ rights sermons, they are also the very people the content concerns.

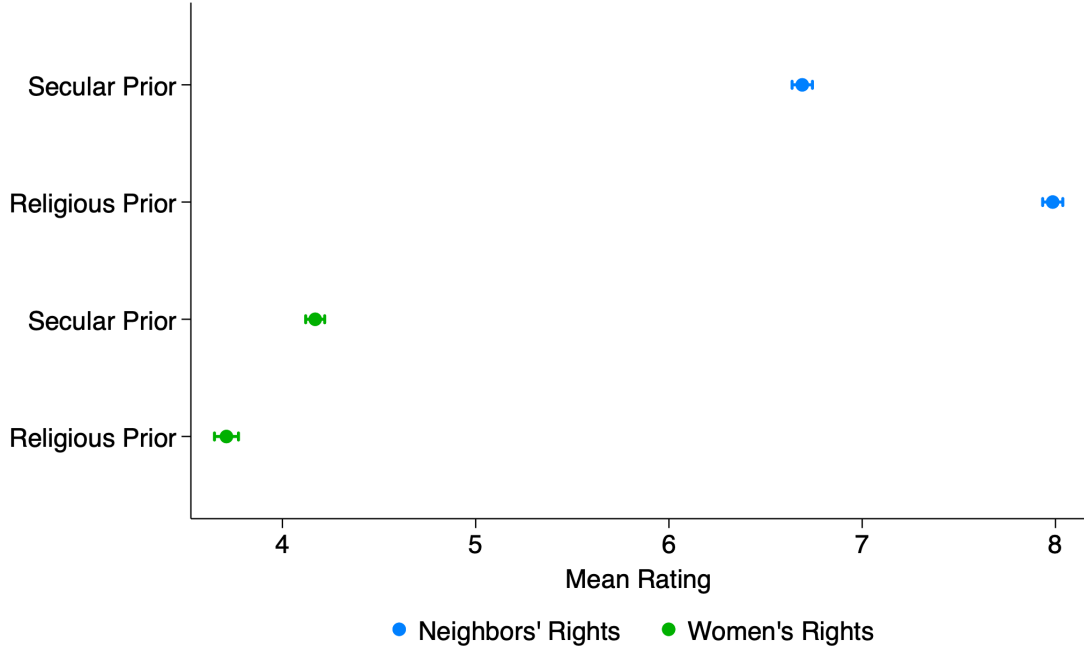
Tables and Figures

Figure 1: Compliance Across Treatment Arms



Notes: Ratings are shown for 206 treatment mosques only. Ratings were computed by taking the average of the compliance ratings for both treatment sermons and were done by feeding both the sermon script and the transcribed sermon to the LLM and posing the following question: “On a scale from 0 to 10, how closely did the overall message of the imam’s sermon match the message of the given script?” The dotted line at 7.0/10 shows the average compliance rating over all treatment arms.

Figure 2: Religious vs Secular Priors



Notes: Ratings are averages of self-reported survey responses on a scale from 0-10 with higher values representing more prosocial ratings. "Religious Prior" represents average religious beliefs expressed at baseline. "Secular Prior" represents average secular beliefs (average of beliefs about social norms and personal beliefs) expressed at baseline.

Table 1: Behavioral Outcomes: Women's Rights

Dependent Variable	Allocation	Spouse Survey	Petition	Pooled
	(1)	(2)	(3)	(4)
Women's Rights	37.0819*** (7.4395)	0.0846** (0.0400)	0.0494 (0.0403)	0.2340*** (0.0512)
Neighbors' Rights	6.2484 (7.1849)	0.0425 (0.0429)	-0.0230 (0.0395)	0.0369 (0.0576)
N	3892	3892	3892	3892
R-Squared	0.0334	0.0054	0.0102	0.0292
Control Mean	111.5473	0.4326	0.4380	-0.0003

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are male mosque-goers recruited from 309 Auqaf mosques in Punjab, Pakistan. Standard errors clustered at the mosque level. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator. Column (1) reports the amount in Pakistani rupees allocated to a women's employment fund in a dictator game in which the respondent divides PKR 300 between himself and the fund. Outcome in Column (2) is an indicator equal to one if the respondent consented to having his wife independently surveyed by phone. Column (3) reports an indicator equal to one if the respondent signed a public petition supporting women's political participation in Pakistani parliament. Column (4) pools the three outcomes in Columns (1)-(3) into a Women's Rights Index, an inverse covariance-weighted (ICW) index constructed following Anderson (2008), in standard deviation units standardized relative to the control group mean and standard deviation.

Table 2: Behavioral Outcomes: Neighbors' Rights

Dependent Variable	Allocation	Enum Clean	Pooled
	(1)	(2)	(3)
Women's Rights	0.9456 (7.2097)	0.1408 (0.1585)	0.0559 (0.0660)
Neighbors' Rights	24.0638*** (7.7036)	0.1873 (0.1476)	0.1899*** (0.0667)
N	3892	3892	3892
R-Squared	0.0285	0.0037	0.0179
Control Mean	127.0208	7.0485	0.0019

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are male mosque-goers recruited from 309 Auqaf mosques in Punjab, Pakistan. Standard errors clustered at the mosque level. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator. Column (1) reports the amount (PKR) allocated to a poor neighbor in a dictator game in which the respondent divides PKR 300 between himself and a randomly chosen poor person in his community. Column (2) reports enumerator-rated community cleanliness on a 0-10 scale, recorded independently before the survey began. Column (3) pools both outcomes into a Neighbors' Rights Index, an inverse covariance-weighted (ICW) index constructed following Anderson (2008), in standard deviation units standardized relative to the control group mean and standard deviation.

Table 3: Beliefs and Well-Being of Wives

Dependent Variable	Women's Rights		Neighbors' Rights
	Beliefs	Well-Being	Beliefs
	(1)	(2)	(3)
Women's Rights	0.1860*** (0.0483)	0.1232 (0.0967)	0.0780 (0.0753)
Neighbors' Rights	0.1191** (0.0502)	0.0763 (0.1109)	-0.0057 (0.0784)
N	618	618	618
R-Squared	0.0419	0.0157	0.0088
Control Mean	-0.0118	0.0141	0.0091

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are wives of male mosque-goers, surveyed over the phone by female enumerators conditional on consent from both the husband and the wife. Standard errors clustered at the mosque level. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator. Column (1) is an inverse covariance-weighted (ICW) Women's Rights Beliefs Index following Anderson (2008) pooling wives' self-reported survey responses to all questions quantifying women's competence, education, and employment, in standard deviation units standardized relative to the control group. Column (2) is an ICW Well-Being Index aggregating wives' self-reported responses to questions on happiness, life satisfaction, health, and autonomy, in standard deviation units standardized relative to the control group. Column (3) is an ICW Neighbors' Rights Beliefs Index pooling wives' self-reported survey responses to all questions quantifying the importance of, trust in, and likelihood of helping neighbors, constructed analogously to Column (1).

Table 4: Post-Treatment Sermon Content

Dependent Variable	Women's Rights	Neighbors' Rights	Conservative Content	Hate Speech
	(1)	(2)	(3)	(4)
Women's Rights	0.4996* (0.2569)	0.1248 (0.1648)	-0.6161*** (0.1133)	-0.9666*** (0.2470)
Neighbors' Rights	-0.1628 (0.1621)	1.2096*** (0.2991)	-0.6228*** (0.1212)	-0.4985* (0.2931)
N	305	305	305	305
R-Squared	0.0604	0.0882	0.1101	0.0493
Control Mean	0.4118	0.2157	7.1569	1.5294

Notes: * 0.10 ** 0.05 *** 0.01. Unit of observation is the mosque. Standard errors are robust. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator. The outcome in each column is a content rating (0-10 scale) for the first sermon delivered by the imam after the conclusion of treatment sermons. Sermon audio was recorded by enumerators, transcribed, and then rated by a custom LLM. Column (1) rates the extent to which the sermon discussed women's rights; Column (2) the extent to which the sermon discussed neighbors' rights; Column (3) rates the extent to which sermon content was conservative; Column (4) rates the extent to which hate speech was present in the sermon. Higher values indicate greater presence of the relevant content.

Table 5: Post-Treatment Attendance

Dependent Variable	Attendance			
	Log(Attendance)	Raw	Winsor99	Winsor95
	(1)	(2)	(3)	(4)
Women's Rights	-0.1286* (0.0749)	-4.3112 (24.5350)	-42.8391** (19.7288)	-33.6513 (21.6043)
Neighbors' Rights	0.0357 (0.0702)	23.5460 (23.8581)	7.3605 (23.1723)	11.5367 (21.2896)
N	304	304	304	304
R-Squared	0.6400	0.8577	0.8187	0.6639
Control Mean	5.6031	386.3883	386.3883	352.1262

Notes: * 0.10 ** 0.05 *** 0.01. Unit of observation is the mosque. Standard errors are robust. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator, as well as the first week's Friday prayer attendance for statistical power. The outcome is Friday prayer headcount measured by enumerators on the first Friday after the conclusion of all treatment sermons. For treatment mosques, this is the Friday following the second treatment sermon; for control mosques, this is two Fridays after the first week of sermon recording. Column (1) reports the natural log of attendance; Column (2) reports the raw headcount; Columns (3) and (4) report headcounts winsorized at the 99th and 95th percentiles, respectively.

Table 6: Religious vs Secular Framing

Dependent Variable	Women's Rights	Neighbors' Rights
	(1)	(2)
Women Secular	0.1407** (0.0642)	0.0279 (0.0858)
Women Religious	0.3322*** (0.0526)	0.0855 (0.0761)
Neighbors Secular	0.1189 (0.0735)	0.2469*** (0.0771)
Neighbors Religious	-0.0416 (0.0677)	0.1351 (0.0876)
N	3892	3892
R-Squared	0.0417	0.0205
Control Mean	-0.0003	0.0019
Ho: Women Rel = Women Sec	0.0020	0.5446
Ho: Neighbors Rel = Neighbors Sec	0.0546	0.2550

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are male mosque-goers recruited from 309 Auqaf mosques in Punjab, Pakistan. Standard errors clustered at the mosque level. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator. Outcome in column (1) is the Women's Rights Index, an inverse covariance-weighted (ICW) index constructed following Anderson (2008) that aggregates: 1) allocation to a women's employment fund in a PKR 300 dictator game, 2) consent to having the respondent's wife independently surveyed by phone, and 3) willingness to sign a petition supporting women's political participation in Pakistani parliament. Outcome in column (2) is the Neighbors' Rights Index which aggregates: 1) allocation to a poor neighbor fund in a PKR 300 dictator game, and 2) enumerator-rated community cleanliness on a 0–10 scale recorded independently before each survey. Treatments are disaggregated into four arms: Women Religious, Women Secular, Neighbors Religious, Neighbors Secular. In the religious framing arms, all content is framed in religious language utilizing Quranic verses, prophetic tradition, and Islamic history; in the secular framing arms the final quarter of each script is framed in secular language, appealing to modern practical, economic, and social concerns. "Ho: Women Rel = Women Sec" reports the p-value from a test of equality of coefficients between the two women's rights framing arms; "Ho: Neighbors Rel = Neighbors Sec" reports the analogous test for the neighbors' rights arms. All index values are in standard deviation units.

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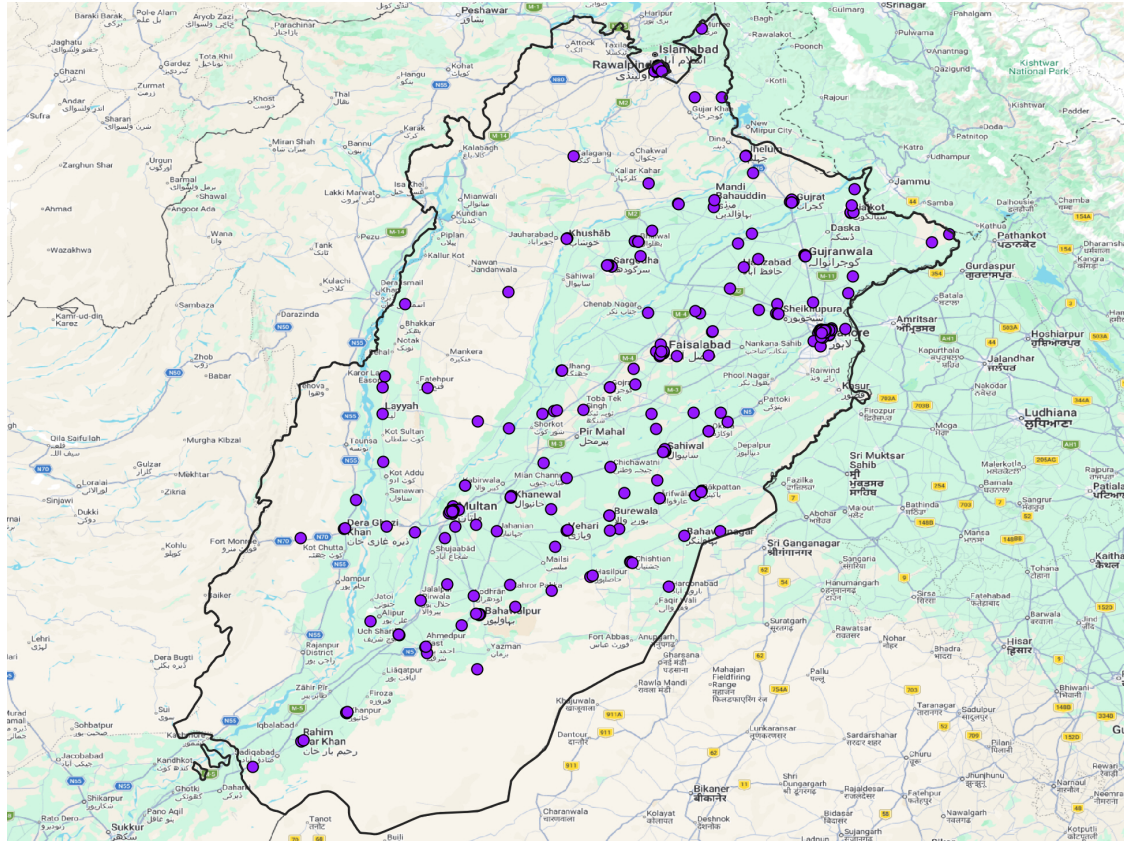
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Appendix

Figure A1: Spatial distribution of Auqaf mosques



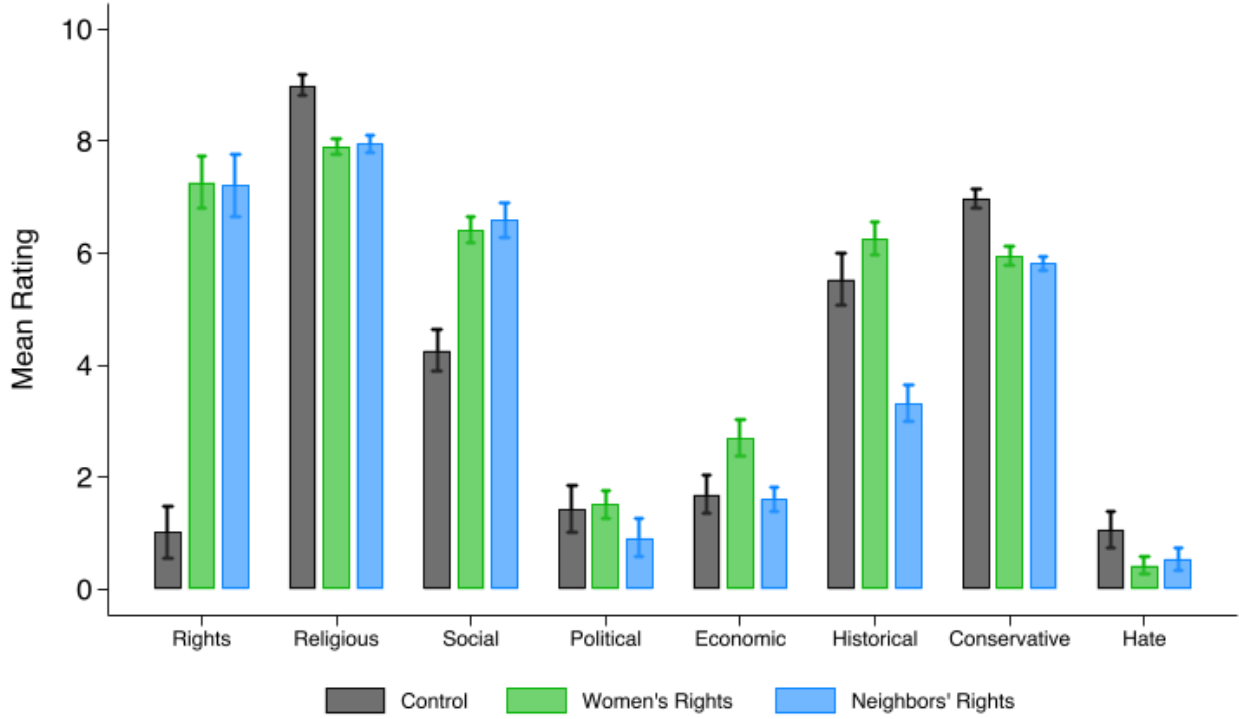
Notes: The map shows the geographic distribution of the 309 Auqaf mosques included in the study across Punjab, Pakistan. The border of Punjab province in Pakistan is shown using the black line while Auqaf mosques are shown as purple dots. Mosques are administered by the Punjab Government's Auqaf and Religious Affairs Department, whose imams are salaried government employees. Study mosques span major urban centers, smaller towns, and rural areas throughout the province. Approximately 13% are located in rural areas, 37% in residential neighborhoods, and 25% have an associated Sufi shrine. Combined Friday prayer attendance across all 309 mosques is approximately 116,000 individuals per week based on baseline counts.

Figure A2: Example Congregation



Notes: Photographs show the setting of a standard Friday sermon at an Auqaf mosque in Punjab, Pakistan. The top image shows the imam delivering a treatment sermon on women's rights before the Friday prayer. The bottom image shows mosque congregants listening to the sermon.

Figure A3: Sermon Content During Treatment Weeks



Notes: The figure displays mean content ratings for sermons delivered during the two treatment weeks separately for control mosques (business-as-usual sermons) and treatment mosques. For treatment mosques, ratings are averages across the two treatment sermon recordings; for control mosques, ratings are from the first week of sermon recording only since only the first and non-treatment weeks were recorded. Sermon audio was recorded by enumerators, transcribed, and then rated by a custom LLM on a scale from 0-10. Eight content dimensions are displayed: rights, religious topics, social topics, political topics, economic topics, historical topics, conservative content, and hate speech. Higher values indicate greater presence of the relevant content.

Table A1: Randomization

	Religious (Share)	Religious (No Share)	Secular (Share)	Secular (No Share)	Total
Control					103
Women's Rights	26	26	25	26	103
Neighbors' Rights	26	26	26	25	103

Notes: The table summarizes the $2 \times 2 \times 2$ factorial randomization design used in this study. Mosques were assigned to one of three topic conditions, Women's Rights, Neighbors' Rights, or Control, with treatment mosques further cross-randomized across two framing conditions (Religious vs Secular) and two information-sharing conditions (Share vs No Share), yielding nine experimental cells. Control mosques were not cross-randomized on framing or sharing sub-treatments since they were given no treatment scripts. Randomization was stratified by mosque Friday prayer attendance tercile and residential/commercial status of the mosque. Cell sizes reflect the number of mosques assigned to each condition out of 309 total.

Table A2: Endline Sample Balance

	N	Control Mean	Control SD	Community Mean	Treatment SD	Women Mean	Treatment SD	Diff1	Diff2
<u>General</u>									
Age	3892	37.67	7.51	37.42	7.60	37.76	7.94	-0.242	0.104
Education	3883	10.00	3.73	9.61	3.81	9.86	3.64	-0.381	-0.121
Income	3649	42039.97	24954.99	44297.06	22549.24	42666.11	23506.72	2,250.294	788.294
Daughters Nr	3892	1.31	1.18	1.34	1.23	1.33	1.21	0.028	0.015
Pray (Daily)	3881	3.86	1.23	3.95	1.16	3.88	1.23	0.093	0.025
Sermons Attend (Monthly)	3886	3.56	0.70	3.52	0.75	3.46	0.77	-0.036	-0.100
Imam Trust	3886	8.57	1.80	8.47	1.64	8.53	1.64	-0.100	-0.036
State Trust	3861	4.71	3.09	4.72	3.02	4.48	2.89	0.007	-0.225
<u>Neighbors' Rights</u>									
Neighbors Important	3890	7.32	2.15	7.37	2.16	7.55	2.19	0.058	0.239
Neighbors Trust	3885	7.00	2.13	6.93	2.24	6.94	2.22	-0.069	-0.055
Neighbor Loan	3886	5.91	2.39	5.98	2.32	5.80	2.41	0.076	-0.092
Enum Clean	3892	6.89	2.16	7.08	2.00	7.07	1.97	0.187	0.183
Belief Index (Neighbors)	3892	0.01	0.55	0.02	0.55	0.01	0.54	0.010	-0.000
<u>Women's Rights</u>									
Men Better Decisions	3887	8.12	2.10	7.93	2.08	7.94	2.06	-0.186	-0.176
Women Delay Marriage	3868	5.33	2.97	4.82	3.04	5.00	2.95	-0.509*	-0.321
Women Job	3883	5.03	2.84	5.03	2.78	5.07	2.82	-0.004	0.041
Spouse Survey	3892	0.64	0.48	0.56	0.50	0.60	0.49	-0.076	-0.036
Belief Index (Women)	3892	-0.01	0.43	0.03	0.44	0.03	0.45	0.032	0.040

Notes: * 0.10 ** 0.05 *** 0.01. The table reports balance tests for baseline characteristics across treatment arms for the endline men sample. Columns report sample means and standard deviations by treatment arm; Diff1 and Diff2 report the coefficients on the Neighbors' Rights and Women's Rights treatment indicators, respectively, from a regression of each variable on both treatment indicators and stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator, with standard errors clustered at the mosque level. The General panel reports demographic and religiosity characteristics: Age (years), Education (years), Income (PKR/month), Daughters Nr (number of daughters), Pray (Daily) (number of the five daily prayers performed, 0–5), Sermons Attend (Monthly) (number of Friday sermons attended in the past four weeks, 0–4), and Imam Trust (0–10 scale, where 0 is “not at all” and 10 is “a lot”). The Neighbors' Rights panel reports Neighbors Important, Neighbors Trust, and Neighbor Loan (0–10 scales measuring, respectively, the importance of neighbors, trust in neighbors, and willingness to loan to a neighbor if asked), Enum Clean (enumerator-rated community cleanliness, 0–10 scale, recorded independently before each survey), and the Belief Index (Neighbors), an inverse covariance-weighted (ICW) index constructed following Anderson (2008) that aggregates all Neighbors' Rights belief items, in standard deviation units standardized relative to the control group mean and standard deviation. The Women's Rights panel reports Men Better Decisions, Women Delay Marriage, and Women Job (0–10 scales measuring agreement with statements about men's decision-making superiority, women delaying marriage for education, and the importance of women having jobs, respectively), Spouse Survey (an indicator equal to one if the respondent's wife completed or agreed to complete the wife survey), and the Belief Index (Women), an ICW index constructed analogously to the Belief Index (Neighbors), aggregating all Women's Rights belief items, also in standard deviation units standardized relative to the control group.

Table A3: Beliefs about Women

Dependent Variable	Women's Rights			
	Competence	Education	Employment	Pooled
	(1)	(2)	(3)	(4)
Women's Rights	0.0660 (0.0534)	0.1758*** (0.0637)	0.1135 (0.0749)	0.1149*** (0.0438)
Neighbors' Rights	-0.0240 (0.0481)	0.0761 (0.0615)	0.0356 (0.0723)	0.0479 (0.0395)
N	3892	3892	3892	3892
R-Squared	0.0485	0.0919	0.0457	0.0894
Control Mean	0.0003	-0.0009	0.0018	-0.0004

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are male mosque-goers recruited from 309 Auqaf mosques in Punjab, Pakistan. Standard errors clustered at the mosque level. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator, as well as the baseline value of each index as a control. All outcomes are inverse covariance-weighted (ICW) indices constructed following Anderson (2008), reported in standard deviation units standardized relative to the control group. Column (1) is a Women's Competence Index, aggregating responses to questions that elicit men's beliefs about women's competence. Column (2) is a Women's Education Index, aggregating responses to questions that elicit men's beliefs about women's education. Column (3) is the Women's Employment Index, aggregating responses to questions that elicit men's beliefs about women's employment. Column (4) is a pooled Women's Rights Beliefs Index pooling all questions used to construct the indices in the previous columns into one index. Higher values in all columns imply more prosocial beliefs.

Table A4: Self-Reported Behavior (Women's Rights)

Dependent Variable	Time-Use (Daily Hrs)			Wife			
	Wife	Daughters	Sons	Job Hrs	Chores Hrs	Outside Hrs	Comfort
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Women's Rights	-0.0049 (0.2351)	-0.1439 (0.2087)	0.0285 (0.2087)	-0.2019 (0.1824)	-0.4135* (0.2173)	-0.0172 (0.1965)	0.3525** (0.1729)
Neighbors' Rights	0.0720 (0.2425)	-0.1432 (0.2109)	-0.0611 (0.2069)	-0.2744 (0.1863)	0.0244 (0.2103)	0.1585 (0.1921)	0.1527 (0.1754)
N	3841	2650	2822	3892	3892	3892	3873
R-Squared	0.0152	0.0222	0.0199	0.0324	0.0272	0.0136	0.0434
Control Mean	3.4373	2.9026	2.8089	1.2764	5.3048	2.6251	7.4124

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are male mosque-goers recruited from 309 Auqaf mosques in Punjab, Pakistan. Standard errors clustered at the mosque level. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator, as well as the baseline value of each outcome as a control where available. Columns (1)-(3) report the respondent's self-reported daily time-use in hours with family members: Column (1) is average daily time spent talking with the respondent's wife; Column (2) is average daily time spent talking with daughters (restricted to respondents who have daughters); Column (3) is average daily time spent talking with sons (restricted to respondents who have sons). Columns (4)-(6) capture the respondent's perceptions of his wife's activities: Column (4) is the respondent's estimate of daily hours his wife spends on paid work; Column (5) is the estimate of daily hours spent on household chores; Column (6) is the estimate of daily hours spent outside the home. Column (8) reports the respondent's self-reported comfort level in talking with his wife, on a 0-10 scale.

Table A5: Beliefs about Neighbors

Dependent Variable	Importance	Trust	Help	Pooled
	(1)	(2)	(3)	(4)
Women's Rights	-0.1149 (0.0708)	-0.0468 (0.0540)	-0.1352** (0.0593)	-0.0867* (0.0471)
Neighbors' Rights	0.1034 (0.0723)	0.0546 (0.0560)	0.0680 (0.0676)	0.0560 (0.0575)
N	3892	3892	3892	3892
R-Squared	0.0702	0.0555	0.0784	0.0691
Control Mean	-0.0019	0.0002	0.0004	0.0006

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are male mosque-goers recruited from 309 Auqaf mosques in Punjab, Pakistan. Standard errors clustered at the mosque level. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator, as well as the baseline value of each index as a control. All outcomes are inverse covariance-weighted (ICW) indices constructed following Anderson (2008), reported in standard deviation units standardized relative to the control group. Column (1) is the Neighbors' Importance Index, aggregating responses to questions that elicit beliefs about the importance of neighbors. Column (2) is the Neighbors' Trust Index, aggregating responses to questions that elicit beliefs about trust in neighbors. Column (3) is the Neighbors' Help Index, aggregating responses to questions that elicit beliefs about individuals' likelihood of helping neighbors. Column (4) is a pooled Neighbors' Rights Beliefs Index pooling all questions used to construct the indices in the previous columns into one index. Higher values in all columns imply more prosocial beliefs.

Table A6: Self-Reported Behavior (Neighbors' Rights)

Dependent Variable	Time-Use (Weekly Hrs)		Neighbors			
	Neighbors	Improving	Know	Ask Help	Receive Help	Food Send
	(1)	(2)	(3)	(4)	(5)	(6)
Women's Rights	-0.0595 (0.1780)	-0.0955 (0.1371)	1.2855* (0.7389)	-0.2117 (0.2224)	-0.1520 (0.2178)	-0.6373** (0.2847)
Neighbors' Rights	0.4367** (0.1942)	0.5072*** (0.1654)	2.1451*** (0.6609)	0.5289* (0.2724)	0.6386** (0.2828)	0.5086 (0.4126)
N	3892	3892	3892	3892	3892	3892
R-Squared	0.0726	0.0644	0.1217	0.0742	0.0801	0.1253
Control Mean	2.3010	1.3218	6.7182	1.7806	2.0608	3.5119

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are male mosque-goers recruited from 309 Auqaf mosques in Punjab, Pakistan. Standard errors clustered at the mosque level. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator, as well as the baseline value of each outcome as a control where available. Columns (1)-(2) report self-reported weekly time-use in hours: Column (1) is weekly time spent interacting with neighbors while Column (2) is weekly time spent on activities improving the community. Columns (3)-(6) report self-reported behavior toward neighbors: Column (3) is the number of neighbors the respondent knows by name; Column (4) is the number of times in the past month the respondent's neighbors asked him for help; Column (5) is the number of times in the past month the respondent received help from his neighbors; Column (6) is the number of times in the past month the respondent's household sent food to neighbors.

Table A7: Prosocial Beliefs

Dependent Variable	Women's Rights	Neighbors' Rights	Overall
	(1)	(2)	(3)
Women's Rights	0.1149*** (0.0438)	-0.0867* (0.0471)	0.0318 (0.0301)
Neighbors' Rights	0.0479 (0.0395)	0.0560 (0.0575)	0.0497 (0.0304)
N	3892	3892	3892
R-Squared	0.0894	0.0691	0.0735
Control Mean	-0.0004	0.0006	0.0012

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are male mosque-goers recruited from 309 Auqaf mosques in Punjab, Pakistan. Standard errors clustered at the mosque level. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator, as well as the baseline value of each index as a control. All outcomes are ICW indices following Anderson (2008) in standard deviation units. Column (1) reproduces the pooled Women's Rights Beliefs Index from Table A3, Column (4). Column (2) reproduces the Neighbors' Rights Beliefs Index from Table A5, Column (4). Column (3) is an Overall Prosocial Beliefs Index that pools all the women's rights and neighbors' rights questions used to construct the indices in columns (1) and (2) into a single overall prosociality index.

Table A8: Employment Behavior of Wives

Dependent Variable	Job	Job Search	Job Search Easy
	(1)	(2)	(3)
Women's Rights	-0.0005 (0.0316)	-0.0220 (0.0257)	-0.4769 (0.3512)
Neighbors' Rights	-0.0037 (0.0267)	-0.0360 (0.0239)	-0.2851 (0.3341)
N	618	618	618
R-Squared	0.0051	0.0202	0.0204
Control Mean	0.0769	0.0769	4.8791

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are wives of male mosque-goers, surveyed by phone by female enumerators conditional on consent from both the husband and the wife. Standard errors clustered at the mosque level. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator. Column (1) is an indicator equal to one if the wife has a paid job at endline. Column (2) is an indicator equal to one if the wife is actively searching for a job. Column (3) is a self-reported measure on a scale from 0-10 for how easy it would be to find a job if the wife were to look.

Table A9: Perceptions of Husbands' Time-Use and Beliefs

Dependent Variable	Husbands' Time-Use			Husbands' Beliefs	
	Wife	Sons	Daughters	Daughter Edu	Daughter Job
	(1)	(2)	(3)	(4)	(5)
Women's Rights	-1.2358*** (0.3966)	-1.2211*** (0.3960)	-1.0392*** (0.3376)	0.7659** (0.3743)	-0.2799 (0.2898)
Neighbors' Rights	-0.6847 (0.4148)	-0.5863 (0.4076)	-0.6322* (0.3561)	0.1685 (0.3812)	-0.2218 (0.3146)
N	618	487	462	618	618
R-Squared	0.0467	0.0451	0.0425	0.0296	0.0084
Control Mean	4.4176	3.9653	3.7574	12.7363	5.3901

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are wives of male mosque-goers, surveyed by phone by female enumerators conditional on consent from both the husband and the wife. Standard errors clustered at the mosque level. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator. Columns (1)–(3) report wives' perceptions of their husbands' daily time-use: (1) hours husband spends talking with the wife; (2) hours spent with sons; (3) hours spent with daughters. Columns (4)–(5) report wives' perceptions of their husbands' beliefs: (4) husband's desired years of schooling for daughters; (5) whether the wife believes her husband would like their daughter to have a job.

Table A10: Endline Sample Balance (Wives and Husbands)

	N	Control		Neighbors' Rights		Women's Rights		Diff1	Diff2
		Mean	SD	Mean	SD	Mean	SD		
Baseline Wives Sample									
Age	113	33.88	9.08	34.69	9.32	34.82	6.20	0.812	0.937
Education	113	8.61	4.62	8.57	4.90	7.29	5.00	-0.035	-1.317
Job	113	0.00	0.00	0.10	0.30	0.05	0.23	0.095	0.053
Job Search	113	0.06	0.24	0.05	0.22	0.00	0.00	-0.013	-0.061
Children Nr	113	3.15	1.79	3.36	2.14	3.00	1.59	0.206	-0.152
Daily Pray	113	4.09	1.28	4.07	1.35	4.08	1.10	-0.019	-0.012
Well-Being	113	0.00	0.83	0.10	0.65	-0.04	0.75	0.098	-0.050
Beliefs Women	113	0.04	0.50	0.05	0.50	0.09	0.32	0.009	0.051
Beliefs Neighbors	113	-0.01	0.56	0.04	0.54	-0.04	0.44	0.048	-0.032
Full Wives Sample									
Age (Husband)	618	37.97	7.14	37.07	7.32	37.65	7.76	-0.904	-0.321
Education (Husband)	618	10.08	3.60	9.33	3.54	10.01	3.54	-0.757	-0.069
Income (Husband)	585	42807.02	25000.31	42000.00	23371.35	40931.37	21624.09	-807.018	-1,875.645
Children Nr (Husband)	616	2.82	1.63	2.80	1.74	2.57	1.66	-0.021	-0.249
Daily Pray (Husband)	613	3.81	1.25	3.92	1.20	3.83	1.31	0.112	0.022
Beliefs Women (Husband)	618	0.03	0.40	0.03	0.45	0.05	0.42	-0.002	0.014
Beliefs Neighbors (Husband)	618	0.01	0.56	0.07	0.57	-0.01	0.51	0.062	-0.017
Spouse Survey (Husband)	618	0.70	0.46	0.67	0.47	0.58	0.50	-0.029	-0.125
Enum Clean (Husband)	618	6.77	2.12	6.96	1.93	6.83	2.19	0.184	0.051

Notes: * 0.10 ** 0.05 *** 0.01. The table reports balance tests for pre-treatment baseline characteristics across treatment arms for the wives' sample. Columns report sample means by treatment arm (Control, Neighbors' Rights, and Women's Rights) and the p-value from an F-test of joint equality across arms, from a regression of each characteristic on treatment indicators and stratification fixed effects with standard errors clustered at the mosque level. The upper panel tests balance for wives in the endline sample that could be matched to a baseline wife observation (approximately 19% of endline wives). The lower panel tests balance of husband characteristics for the full endline sample of wives.

Table A11: Post-Treatment Sermon Content

Dependent Variable	Religious	Social	Political	Economic	Historical
	(1)	(2)	(3)	(4)	(5)
Women's Rights	0.0807 (0.1861)	-0.4729 (0.2915)	-0.6469* (0.3587)	-0.3939 (0.2711)	-0.6019** (0.3053)
Neighbors' Rights	-0.0017 (0.1704)	-0.4779 (0.3027)	-0.4112 (0.3876)	-0.5048** (0.2416)	-1.1220*** (0.3219)
N	305	305	305	305	305
R-Squared	0.0114	0.0232	0.0150	0.0269	0.0447
Control Mean	8.7549	4.6176	2.2157	1.9608	5.7059

Notes: * 0.10 ** 0.05 *** 0.01. Unit of observation is the mosque. Standard errors are robust. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator. The outcome in each column is a content rating (0-10 scale) for the first sermon delivered by the imam after the conclusion of treatment sermons. Sermon audio was recorded by enumerators, transcribed, and then rated by a custom LLM. Column (1)-(5) rate the extent to which the sermons discussed religious, social, political, economic, and historical topics respectively. Higher values indicate greater presence of the relevant content.

Table A12: Behavior and Beliefs of Imams

Dependent Variable	Women's Rights		Neighbors' Rights	
	Behavior	Beliefs	Behavior	Beliefs
	(1)	(2)	(3)	(4)
Women's Rights	0.1935* (0.1156)	0.1690** (0.0831)	-0.0131 (0.1128)	0.0299 (0.0909)
Neighbors' Rights	0.0887 (0.1066)	0.2079*** (0.0785)	-0.0792 (0.1120)	0.0302 (0.0903)
N	244	242	244	243
R-Squared	0.0243	0.0652	0.0323	0.0054
Control Mean	-0.0000	-0.0024	0.0000	-0.0101

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are imams of Auqaf mosques. Standard errors are robust. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator. All outcomes are inverse covariance-weighted (ICW) indices constructed following Anderson (2008), in standard deviation units standardized relative to the control group. Column (1) is the Imams' Women's Rights Behavior Index, an ICW index of: 1) allocation to a women's employment fund in a PKR 300 dictator game, and 2) willingness to sign a petition supporting women's political participation. Column (2) is the Imams' Women's Rights Beliefs Index, constructed from the full set of survey questions quantifying beliefs about the competence, education, and employment of women. Column (3) is the Imams' Neighbors' Rights Behavior Index pooling: 1) allocation to a poor neighbor fund in a PKR 300 dictator game, and 2) enumerator-rated community cleanliness. Column (4) is the Imams' Neighbors' Rights Beliefs Index, constructed from the full set of survey questions quantifying beliefs about the importance of neighbors, trust in neighbors, and likelihood of helping neighbors.

Table A13: Domain Expansion and Job Satisfaction of Imams

Dependent Variable	Domain Expansion				Job Satisfaction	
	Non-Rel	Rel Politics	Vote Advice	Health Politics	Autonomy	Satisfaction
	(1)	(2)	(3)	(4)	(5)	(6)
Women's Rights	-0.2480 (0.3445)	-0.1363 (0.3346)	-0.5245 (0.4972)	0.0117 (0.3192)	0.4709 (0.3152)	0.2901 (0.2413)
Neighbors' Rights	0.0554 (0.3168)	-0.2748 (0.3376)	-0.7109 (0.4472)	-0.5191 (0.3439)	0.1524 (0.2981)	-0.1015 (0.2526)
N	241	242	242	242	238	236
R-Squared	0.0083	0.0167	0.0230	0.0158	0.0143	0.0369
Control Mean	7.4865	7.8667	5.5333	7.2533	7.7838	8.4306

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are imams of Auqaf mosques. Standard errors are robust. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator. All outcomes are on a 0–10 scale. Column (1) reports whether imams think they should have more say in non-religious matters. Column (2) reports the extent to which imams think religion should play a bigger role in politics. Column (3) reports whether imams think they should be advising congregants on how to vote. Column (4) reports whether imams think they should be advising congregants on health matters. Column (5) reports self-reported satisfaction with the autonomy the imam says they have in their government job. Column (6) reports imams' overall self-reported satisfaction with their government job.

Table A14: Trust

Dependent Variable	Imam Trust				State
	Overall	Voting	Religious	Worldly	Overall
	(1)	(2)	(3)	(4)	(5)
Women's Rights	0.1599 (0.1897)	0.0363 (0.3359)	0.0653 (0.1532)	0.0526 (0.2869)	0.3109 (0.1986)
Neighbors' Rights	0.1660 (0.2030)	0.1821 (0.3122)	0.0553 (0.1601)	0.2164 (0.2685)	0.1049 (0.2071)
N	3882	3854	3885	3874	3837
R-Squared	0.0369	0.0566	0.0326	0.0345	0.0884
Control Mean	7.8128	5.3624	8.1278	6.3840	5.3841

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are male mosque-goers recruited from 309 Auqaf mosques in Punjab, Pakistan. Standard errors clustered at the mosque level. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator, as well as the baseline value of each outcome as a control. All outcomes are on a 0–10 scale. Column (1) is overall trust in the respondent's imam. Column (2) is trust in the imam for guidance on voting decisions. Column (3) is trust in the imam on religious matters. Column (4) is trust in the imam on worldly (non-religious) matters. Column (5) is respondents' overall trust in state institutions.

Table A15: Post-Treatment Attendance (Week 2)

Dependent Variable	Log(Attendance)	Raw	Winsor99	Winsor95
	(1)	(2)	(3)	(4)
Women's Rights	-0.1303* (0.0769)	-13.4000 (19.8221)	-42.7288** (19.6908)	-32.7889 (21.9218)
Neighbors' Rights	-0.0258 (0.0827)	16.6429 (31.3080)	-7.1849 (25.3513)	0.4150 (23.5680)
N	302	302	302	302
R-Squared	0.5710	0.8258	0.7956	0.6248
Control Mean	5.6031	386.3883	386.3883	352.1262

Notes: * 0.10 ** 0.05 *** 0.01. Unit of observation is the mosque. Standard errors are robust. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator, as well as the first week's Friday prayer attendance for statistical power. The outcome is Friday prayer headcount measured by enumerators on the day of the second treatment sermon, while for control mosques, it is headcount two Fridays after the first week of sermon recording. Column (1) reports the natural log of attendance; Column (2) reports the raw headcount; Columns (3) and (4) report headcounts winsorized at the 99th and 95th percentiles, respectively.

Table A16: Information Sharing

Dependent Variable	Women's Rights	Neighbors' Rights
	(1)	(2)
Women No Share	0.1848*** (0.0613)	0.0265 (0.0741)
Women Share	0.2825*** (0.0591)	0.0849 (0.0881)
Neighbors No Share	0.0907 (0.0783)	0.2636*** (0.0832)
Neighbors Share	-0.0172 (0.0622)	0.1155 (0.0809)
N	3892	3892
R-Squared	0.0334	0.0221
Control Mean	-0.0003	0.0019
Ho: Women Share = Women No Share	0.1301	0.5426
Ho: Neighbors Share = Neighbors No Share	0.1951	0.1282

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are male mosque-goers recruited from 309 Auqaf mosques in Punjab, Pakistan. Standard errors clustered at the mosque level. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator. Outcome in column (1) is the Women's Rights Index, an inverse covariance-weighted (ICW) index constructed following Anderson (2008) that aggregates: 1) allocation to a women's employment fund in a PKR 300 dictator game, 2) consent to having the respondent's wife independently surveyed by phone, and 3) willingness to sign a petition supporting women's political participation in Pakistani parliament. Outcome in column (2) is the Neighbors' Rights Index which aggregates: 1) allocation to a poor neighbor fund in a PKR 300 dictator game, and 2) enumerator-rated community cleanliness on a 0–10 scale recorded independently before each survey. Treatments are disaggregated into four arms: Women Share, Women No Share, Neighbors Share, Neighbors No Share. In the sharing arm, sermons conclude with an explicit plea from the imam asking congregants to share what they have heard in the sermon with wives, while in the no sharing arm, sermons do not conclude with such a plea. "Ho: Women Share = Women No Share" reports the p-value from a test of equality of coefficients between the women's rights sharing/no sharing arms; "Ho: Neighbors Share = Neighbors No Share" reports the analogous test for the neighbors' rights arms. All index values are in standard deviation units.

Table A17: Heterogeneity by Baseline Religious and Secular Priors

Dependent Variable	Women's Rights	Neighbors' Rights
	(1)	(2)
Religious	0.3000*** (0.0681)	0.3605*** (0.1028)
Secular	0.0957 (0.0974)	0.2808*** (0.0967)
Religious x 1(Religious Prior > Median)	0.0298 (0.0756)	-0.2270** (0.1020)
Secular x 1(Religious Prior > Median)	0.1874* (0.0981)	0.0939 (0.1104)
Religious x 1(Secular Prior > Median)	-0.0175 (0.0709)	-0.2332** (0.1009)
Secular x 1(Secular Prior > Median)	-0.1237 (0.1023)	-0.2152** (0.1003)
N	3648	3759
R-Squared	0.0406	0.0463
Control Mean	-0.0003	0.0019

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are male mosque-goers from 309 mosques. Standard errors clustered at mosque-level. Outcome in column 1 is index that collapses my primary women's rights outcomes: 1) allocation in dictator game, 2) spouse survey consent, 3) petition consent. Outcome in column 2 is index that collapses my primary neighbors' rights outcomes: 1) allocation in dictator game, 2) enumerator-measured community cleanliness. Indices constructed using Anderson (2008) and units are standard deviations. "Religious Prior" represents average religious beliefs expressed at baseline. "Secular Prior" represents average secular beliefs (average of beliefs about social norms and personal beliefs) expressed at baseline.

Table A18: Personal vs Norms vs Religious Beliefs

Dependent Variable	Women's Rights			Neighbors' Rights		
	Personal	Norms	Religious	Personal	Norms	Religious
	(1)	(2)	(3)	(4)	(5)	(6)
Women's Rights	0.0711 (0.0688)	0.0905 (0.0670)	0.0974 (0.0845)	-0.1174* (0.0665)	-0.1528** (0.0731)	0.0441 (0.0938)
Neighbors' Rights	-0.0506 (0.0608)	-0.0642 (0.0646)	-0.0281 (0.0799)	0.1067 (0.0699)	0.0189 (0.0788)	0.1734* (0.0957)
N	3892	3870	3886	3892	3871	3889
R-Squared	0.0606	0.0312	0.0500	0.0838	0.0807	0.0525
Control Mean	0.0015	-0.0006	-0.0014	-0.0032	-0.0045	-0.0036

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are male mosque-goers recruited from 309 Auqaf mosques in Punjab, Pakistan. Standard errors clustered at the mosque level. All regressions include stratification fixed effects for mosque attendance tercile, residential/commercial status, and a misfit indicator, as well as the baseline value of each index as a control. All outcomes are ICW indices following Anderson (2008) in standard deviation units. For women's rights (Columns 1-3): 1) Personal Beliefs Index, constructed from the respondent's own survey responses on women's competence, education, and employment; 2) Social Norms Index, constructed from analogous questions about what other men in the community think; 3) Religious Prior Index, constructed from analogous questions about what Islamic teaching says on women's rights. For neighbors' rights (Columns 4-6): 4) Personal Beliefs Index for neighbors; 5) Social Norms Index for neighbors; 6) Religious Prior Index for neighbors.

Table A19: Heterogeneity on Mosque-Level Dimensions

Dependent Variable	Women's Rights		Neighbors' Rights	
	(1)	(2)	(3)	(4)
Women	0.2408*** (0.0891)	0.2357 (0.1527)	0.1368 (0.1076)	-0.1351 (0.1993)
Neighbors	0.0989 (0.0939)	0.2616 (0.1743)	0.1094 (0.1120)	0.0800 (0.1999)
WomenxAttendance2	-0.0077 (0.1173)		-0.0663 (0.1497)	
WomenxAttendance3	-0.0126 (0.1332)		-0.1797 (0.1652)	
NeighborsxAttendance2	-0.1594 (0.1358)		0.0857 (0.1655)	
NeighborsxAttendance2	-0.0214 (0.1415)		0.1538 (0.1582)	
WomenxResidential		-0.0026 (0.1099)		0.1392 (0.1328)
NeighborsxResidential		-0.1646 (0.1168)		0.0809 (0.1426)
N	3892	3892	3892	3892
R-Squared	0.0319	0.0325	0.0239	0.0193
Control Mean	-0.0003	-0.0003	0.0019	0.0019

Notes: * 0.10 ** 0.05 *** 0.01. Respondents are male mosque-goers recruited from 309 Auqaf mosques in Punjab, Pakistan. Standard errors clustered at the mosque level. All regressions include a misfit indicator. Outcome in columns (1)-(2) is the Women's Rights Index, an inverse covariance-weighted (ICW) index constructed following Anderson (2008) that aggregates: 1) allocation to a women's employment fund in a PKR 300 dictator game, 2) consent to having the respondent's wife independently surveyed by phone, and 3) willingness to sign a petition supporting women's political participation in Pakistani parliament. Outcome in columns (3)-(4) is the Neighbors' Rights Index which aggregates: 1) allocation to a poor neighbor fund in a PKR 300 dictator game, and 2) enumerator-rated community cleanliness on a 0-10 scale recorded independently before each survey. Both outcomes are in standard deviation units. Each column adds interactions between the pooled treatment indicators and one mosque-level characteristic: Columns (1) and (3) interact with mosque attendance tercile (low as base, interactions with medium and high tercile indicators); Columns (2) and (4) interact with residential/commercial status of the mosque. Randomization was stratified by both attendance tercile and residential/commercial status of the mosque.