Safe Spaces or Elite Networks? The Effects of Peer Composition on Political Effectiveness*

Ankita Baidya[†] Apurva Bamezai[‡] Siddharth George[§]
Siddharth Hari[¶] M.R. Sharan[‖] Munish Sharma[**]

Friday 11th September, 2026

Preliminary draft — please do not circulate or cite.

Abstract

Leaders of marginalised groups often lack both the knowledge and connections to make the state more responsive to their constituents' concerns. We compare two approaches to empowering marginalised politicians — safe spaces and elite networks — by randomly assigning elected Scheduled Caste (SC) leaders in Bihar, India, to peer groups composed only of fellow SCs or to groups drawn from the elite-dominated political class. Only safe spaces close governance knowledge gaps: SC leaders in SC-only groups acquire 0.15 standard deviations more knowledge, eliminating the gap with non-SC politicians, while SC leaders in mixed groups show no gains, despite interacting with more educated, experienced, and connected peers. Safe spaces work through engagement: their members know their peers better, participate more actively, and hold higher-quality discussions that generate solutions on the issues they campaigned on. Mixed groups instead build ties to the bureaucrats who control scheme implementation, while safe spaces connect SC leaders to political parties. Each additional safe-space SC leader shifts village development spending towards the projects SC politicians campaign on and SC citizens want. Our findings show that access to advantaged peers alone may not be sufficient to empower marginalized leaders: the social setting in which interactions occur shapes whether networks translate into learning and political access.

Keywords: developing countries, politicians, governance, public service, peer networks

JEL Classification codes: H4, H7, D73, D78, D83, D85

*We are very grateful to Ankita Baidya, Antisha Nigam, Swathi CS, Sawal Choudhary, Ashish Thakur, Shreya Ray, Ria Dutta, Shivani Pandey, Vijay Prakash, and Chanchal Kumar Singh for excellent research support. The authors express gratitude to Balamurugan D and Dr. N Saravana Kumar, who served as Principal Secretaries of the Rural Development Department, Government of Bihar, at different points during the study, for their valuable support in facilitating the implementation of the experiment. We thank anonymous reviewers at the Weiss Fund and JPAL Governance Initiative. Funding from the Weiss Fund, JPAL Governance Initiative and the International Growth Center is gratefully acknowledged. The opinions expressed in the paper are those of the authors and do not necessarily reflect the views of the World Bank Group or its Board of Executive Directors.

[†]GRAMA. ankitabaidya98@gmail.com
[‡]Ashoka University. apurva.bamezai@ashoka.edu.in
[§]National University of Singapore. segeorge@nus.edu.sg
[¶]The World Bank. shari@worldbank.org
[‖]University of Maryland. sharan@umd.edu
[**]GRAMA. munish.94sharma@gmail.com

1 Introduction

Marginalised groups often struggle to learn the hidden curriculum of their professions—the tacit knowledge, unwritten norms, and relationships that determine who succeeds. The problem is acute in politics. Leaders from marginalised communities are elected to make government work for their constituents, yet they often lack the knowledge and networks this requires. In other domains, notably education, peer networks are a common intervention to empower disadvantaged groups and narrow inequalities (Booth et al., 2018; Kofoed and McGovney, 2019; Bandiera et al., 2020). These interventions take two contrasting forms. The first provides safe spaces: peers from one's own community, with whom members can speak freely and discuss the issues that matter to them. The second provides elite networks: advantaged peers, from whom members can learn the hidden curriculum and gain the connections they lack. Which approach better empowers marginalised groups?

In this paper, we compare safe spaces and elite networks as strategies for empowering marginalised politicians. We run a large-scale experiment with elected village leaders in the Indian state of Bihar that randomises the composition of the peer groups these leaders join. Bihar is well suited to this comparison for two reasons. First, divisions between marginalised Scheduled Castes (SCs) and other groups are severe: SCs faced centuries of untouchability, remain poorer and less educated than their neighbours, and held fewer than 2% of village council presidencies before seats were reserved for them in 2006. Second, owing to those quotas, Bihar's political class is representative of its population, so marginalised leaders govern alongside both their own communities and elites.

Our experiment is embedded in a broader intervention covering 7,719 ward members (WMs), the lowest tier of elected politicians in India, which assigned a random subset to peer groups of 10–12 that met in person and virtually over a year (Bamezai et al., 2026). Within this design, we randomly assigned SC WMs either to groups composed entirely of other SC leaders ("safe spaces") or to groups drawn from the full sample of elected leaders, who come disproportionately from elite families and social groups ("elite networks"). Of the 2,533 SC WMs in the experiment, 808 were assigned to treated groups: 422 to safe spaces and 386 to elite networks. The remaining 1,725, randomised to control, provide the counterfactual.

We find that only safe spaces close governance knowledge gaps. To measure what WMs know, we ask them at endline to list the steps required to implement major government schemes, answer factual questions about scheme rules, and identify effective solutions to common governance challenges. SC leaders assigned to SC-only groups acquire

0.15 standard deviations (SD) more knowledge: they gain formal knowledge of schemes and procedural knowledge of how to implement them, and score significantly higher on an index combining all our measures. SC leaders assigned to mixed groups show no gains. Their non-SC groupmates do learn, so mixed groups widen the knowledge gap between SC and non-SC leaders; the gains from safe spaces, by contrast, close it entirely.

Why do safe spaces generate more learning? We first rule out the explanation that SC-only groups were of higher quality or had more information to share. If anything, mixed groups have stronger peers: their members are more educated, more experienced, better connected, and more knowledgeable at baseline. Yet mixed and SC-only groups generate a similar number of solutions to the problems they discuss, and average WM quality is a weak predictor of whether a group discusses effectively or produces solutions. Nor is the effect of safe spaces simply the effect of having more own-community peers: within mixed groups, treatment effects for both SC and non-SC WMs are unrelated to the share of peers from their own community.

We argue that safe spaces change how SC WMs engage with their peer groups: they come to know their peers better, participate more actively, and hold more effective discussions. SC WMs assigned to safe spaces are more likely to report knowing their groupmates well. They are more active in the group's WhatsApp thread, sending more messages and sharing more content, and their peers are more likely to name them as effective contributors to the group's discussions. The discussions themselves are also better. Enumerators rated the quality of over 4,800 group discussions, a measure we validate by showing that WMs in groups with higher-rated discussions learn more. By this measure, safe-space discussions are 0.085 SD higher quality. Safe spaces also change what discussions produce: SC WMs in these groups generate significantly more solutions on the schemes they campaigned on at baseline. Group problem-solving, in other words, concentrates on the issues these leaders promised their voters.

Which SC WMs gain from each kind of group? We estimate conditional average treatment effects using causal forests (Wager and Athey, 2018). Most SC WMs are predicted to benefit from assignment to a safe space, with the largest gains among those with below-median baseline knowledge. Predicted gains from mixed groups are confined to a small share of SC WMs in the right tail of advantage: the best-connected and most advantaged, those already equipped to profit from contact with elites.

Safe spaces have a drawback: they do not build bureaucratic networks. SC WMs assigned to mixed groups develop significantly stronger ties to block-level bureaucrats; SC WMs assigned to safe spaces do not. These ties are valuable. Block-level bureaucrats hold administrative authority over most major schemes, and they offer WMs a route to im-

plementation that does not depend on the GP head, with whom WMs are frequently in conflict (Kumar and Sharan, 2025).

What safe spaces do build is access to political parties. Parties are formally banned from Bihar's panchayat elections: candidates cannot run on a party ticket or use party symbols. In practice, parties are involved, and roughly 20% of WMs report party affiliations at baseline. SC WMs assigned to safe spaces are significantly more likely to be connected to a political party at endline. The gains are not limited to parties rooted in SC communities[1]: connections to other parties rise as well, if anything by more. Safe spaces thus broaden SC WMs' political access well beyond their own community. These connections carry weight: parties give WMs levers to access funds and to influence GP decision-making.

These shifts in knowledge and networks feed into what village governments plan to do. WMs hold little formal power: the GP head commissions funds, and WMs directly control only a small share of their GP's spending. Their main influence runs through the Gram Panchayat Development Plan (GPDP), the annual plan that fixes the projects a GP will undertake and the money attached to each, drawn up in meetings where WMs negotiate for their wards' priorities (Bamezai et al., 2026). Using administrative GPDP records, we find that safe spaces enable SC leaders to represent their communities in these plans. Each additional safe-space SC WM in a GP shifts planned spending towards the schemes that SC WMs campaign on and towards those that SC citizens want. Mixed-group SC WMs shift spending towards SC citizens' preferences as well, but by less, and they have no effect on the schemes SC WMs campaign on. Bureaucratic networks without commensurate gains in knowledge or political access, in other words, deliver less change.

Contribution to literature. Our paper contributes to research on what kinds of social settings empower marginalised groups. Economists have studied the two approaches we compare largely in parallel. Work on integration randomises contact with advantaged peers—on sports teams (Lowe, 2021), among classmates (Rao, 2019), roommates (Boisjoly et al., 2006; Corno et al., 2022), and military squads (Dahl et al., 2021)—and finds that contact reduces prejudice and builds cross-group ties, though the measured gains often accrue to the attitudes of the advantaged rather than to the capabilities of the marginalised. Work on own-group settings shows that they build capability directly: women-only classrooms raise achievement (Booth et al., 2018), girls' clubs increase self-employment and reduce early marriage (Bandiera et al., 2020), peer support makes business training effective for constrained women (Field et al., 2016), and women's groups close gender gaps in political participation (Prillaman, 2023). A third strand finds that elite

[1]These include the Lok Janshakti Party and the Hindustani Awam Morcha.

networks carry large returns and systematically exclude outsiders (Zimmerman, 2019; Michelman et al., 2022; Cullen and Perez-Truglia, 2023). Head-to-head comparisons of own-group and mixed settings exist for ability tracking (Duflo et al., 2011; Booij et al., 2017) and for intergroup attitudes (Mousa, 2020). To our knowledge, ours is the first experimental evidence on which of the two approaches empowers marginalised politicians.

Our paper also adds to the literature on peer effects. Peers shape learning and performance among students (Duflo et al., 2011; Sacerdote, 2011), workers and managers (Cai and Szeidl, 2018; Sandvik et al., 2020; Papay et al., 2020; Iacovone et al., 2022), and farmers (Foster and Rosenzweig, 1995; Conley and Udry, 2010). Politicians remain largely outside this literature: most work in political economy examines politicians in isolation (Battaglini and Patacchini, 2019), and studies of peer influence among legislators centre on voting and cosponsorship rather than learning (Fowler, 2006; Harmon et al., 2019; Battaglini et al., 2020; Canen et al., 2023). In companion work, we show that peer groups can build the capacity of elected politicians (Bamezai et al., 2026). None of this work asks which peers disadvantaged politicians should be grouped with. This is the margin our experiment isolates, and the one that turns out to determine whether they learn at all.

Finally, we contribute to the literature on affirmative action in politics. Existing work studies electoral quotas: reservations place members of marginalised groups in office and shift policy towards their communities (Pande, 2003; Chattopadhyay and Duflo, 2004; Besley et al., 2004; Chin and Prakash, 2011; Dunning and Nilekani, 2013; Jensenius, 2015; Gulzar et al., 2020; Kumar and Sharan, 2026). The focus is on entry—who gets to govern—while the leaders quotas elect are left to learn on the job: women in reserved seats initially underperform and catch up only with experience (Afridi et al., 2017). Recent experiments shape who stands for office (Dal Bó et al., 2024; Gulzar and Khan, 2025). We study the complementary margin: helping marginalised leaders govern once elected. A peer-learning intervention closes the knowledge gap that quota-elected SC leaders face and steers public spending towards the communities reservations were designed to serve.

The rest of the paper is organised as follows. Section 2 provides background on local governance, caste, and political parties in Bihar. Section 3 describes the experiment. Section 4 describes the data. Section 5 presents the empirical strategy, Section 6 the results, and Section 7 concludes.

2 Background

2.1 Local Governance in Bihar

Rural governance in Bihar follows the Panchayati Raj system. The smallest unit of rural local government in the state is the Gram Panchayat, a self-governing body comprising a group of villages. Every five years, the citizens of each Gram Panchayat (GP) elect a representative from each ward as well as the head of the GP, commonly known as the Mukhiya. Together, the ward members and the GP head form the village council that governs the panchayat. As representatives of their respective wards and panchayats, council members are expected to address the issues on which they campaigned, respond to citizens' preferences, and organise and participate in meetings to determine local priorities and address concerns raised by citizens.

Ward members and the GP head are also responsible for implementing most rural development schemes funded by the national and state governments. The elected body oversees the delivery of most public services and welfare benefits. A small staff of bureaucrats assists the village council with implementing government programmes.

2.1.1 Role of Ward Members

Ward members constitute the lowest tier of elected politicians in India and represent the smallest administrative subdivision of government. Each ward member contests elections from their ward of residence, which typically comprises around 1,000 citizens. They are responsible for delivering public services and welfare benefits, redressing public grievances, and resolving implementation bottlenecks within the ward.

Ward members are formally required to participate in delivering several public goods, including schemes for the construction of drains and lanes (*Nali Gali*), solid and liquid waste management (*Lohiya Swachh Bharat Abhiyan*, LSBA), the provision of tap water (*Nal Jal*), and solar street lights.[2] Ward members are also formally responsible for identifying beneficiaries within their wards for welfare programmes such as pensions, subsidised food, employment provided under the Mahatma Gandhi National Rural Employment Guarantee Scheme (NREGA), housing construction subsidies (*Pradhan Mantri Awas Yojana*, PMAY), and toilet construction subsidies (*Swachh Bharat Abhiyan*, SBM).

Ward members also serve as the first point of contact for citizens with grievances or problems related to government schemes. They are required to preside over *Ward Sabha*

[2]WM responsibilities under the tap water (*Nal Jal*) scheme have changed over time. WMs were given additional powers and responsibilities in 2016, while a cabinet order in May 2023 transferred some of these powers to the Public Health Engineering Department (PHED).

meetings, at which residents may raise issues for discussion. Citizens can also approach ward members with complaints about local public goods, such as the quality of roads, and public services, such as the absenteeism of local childcare workers. These complaints are often formalised through petitions that ward members submit to local bureaucrats.

Because ward members serve both as their citizens' local representatives and as implementers of government schemes, they often mediate between their constituents and higher-level officials and politicians, such as the GP head, who exercise *de facto* control over the allocation of public resources. This mediating role is particularly important because ward members directly control only a small fraction of their GP's overall expenditure.

2.2 Caste and SCs

Class and hierarchy in Indian society are predominantly determined by caste. Caste is a fixed social group to which an individual is assigned at birth, typically through their father's caste. A distinct feature of the caste system is its rigid hierarchy, which allows higher castes to secure higher social and *de facto* economic status while restricting upward mobility and inclusion, particularly for those excluded from the four *varnas*.[3]

Within the caste system, groups that face or have historically faced extreme social exclusion and economic backwardness[4] are categorised as Scheduled Castes (SCs) in the Constitution of India. The caste system continues to produce persistent inequalities in Indian society. These inequalities shape education and health indicators, labour market outcomes (Deshpande, 2011; Singh and Thorat, 2014) and opportunities (Thorat and Newman, 2007), migration (Munshi and Rosenzweig, 2016), and marriage market outcomes (Desai and Vanneman, 2012).

2.2.1 SCs in Bihar

While caste hierarchies manifest differently across states, no state in India has attained complete reversal or parity (Deshpande, 2011). Historically, SCs in rural Bihar could not own land, conduct trade, or receive education, and worked mostly as landless agricultural labourers (*bataidars*), leather craftsmen, sanitation workers, clothes washers, or toddy-tappers. Although the occupational distribution of SC groups has widened since the abolition of untouchability and the introduction of reservations in 1950, most SCs continue to

[3]The laws governing the caste system were codified in the *Manusmriti*, or the "Laws of Manu", which defines the four *varnas* as the Brahmins (priests), the Kshatriyas (warriors), the Vaishyas (traders), and the Shudras (workers and farmers).

[4]Especially through untouchability—the practice of physical exclusion or segregation by upper castes. This mostly includes groups excluded from the traditional *varna* system.

work as agricultural labourers or in informal, low-paying jobs.

With the introduction of reservations for local political office in Bihar in 2006, SCs came to hold 17% of GP head positions across the state. Before reservations, Sharan and Kumar (n.d.) find that SCs held fewer than 2% of GP head positions in Bihar and owned 0.37 SD fewer assets than non-SCs. SC leaders who win reserved seats also earn less, have fewer years of schooling, and are younger than non-SC leaders. They are also 47 percentage points more likely to report belonging to the "lower" income class on their election affidavits.

2.3 Bureaucrats and Political Parties

2.3.1 Bureaucratic Staff

In the Panchayati Raj system, the GP head and WMs are assisted by bureaucratic staff appointed through Bihar's Department of Panchayati Raj and Department of Rural Development. These bureaucrats assist elected representatives with scheme implementation at different levels and also play a role in monitoring law and order, ensuring compliance, and permitting activities.

At the block level, the Block Development Officer (BDO) and the Block Panchayati Raj Officer (BPRO) are key officials responsible for administrative and logistical aspects of scheme implementation. The BDO is appointed by the Bihar Public Service Commission and holds administrative authority over the implementation of employment provided under the National Rural Employment Guarantee Act (NREGA), toilet construction under *Swachh Bharat Abhiyan*, housing under *Pradhan Mantri Awas Yojana* (PMAY), and other schemes introduced by the central government.

The BPRO, appointed by the state government through the Department of Panchayati Raj, is the administrative authority over state-level schemes such as drains and lanes construction (*Nali Gali*), provision of tap water (*Nal Jal*), solar street lights, and the construction of *panchayat bhawans* (local government offices).

At lower levels, the village council is assisted by staff including the Panchayat Secretary, Employment Secretary (*Rozgar Secretary*), Sanitation Secretary (*Swachhta Grihi*), Housing Assistant (*Awas Sahayak*), and Junior Engineer. These officials assist with day-to-day implementation, provide technical expertise for particular schemes, and support planning and budgeting at the panchayat level.

While the GP head holds signatory authority to commission funds for implementation and supervises panchayat-level staff, any elected representative on the village council can engage directly with block-level officials to expedite scheme implementation.

2.3.2 Party Affiliation

As a rule, GP elections in Bihar are not conducted along party lines. Political parties have no formal role in nominating candidates, and candidates contest elections independently rather than on behalf of a party. This is the norm in many Indian states.

In practice, however, candidates are often endorsed by political parties, higher-level politicians campaign for them, and voters are aware of candidates' political affiliations. In a survey conducted by Dunning and Nilekani (2013), 72% of respondents report knowing the party affiliation of the GP head. In our surveys, WMs report whether they are affiliated with a political party at both baseline and endline and, if so, the name of the party.[5]

2.4 Gram Panchayat Development Plans (GPDP)

Gram Panchayat Development Plans (GPDPs) set out the schemes and projects that GPs plan to undertake. These include centrally funded schemes such as drains and lanes construction (*Nali Gali*), housing construction subsidies (*Pradhan Mantri Awas Yojana*, PMAY), and the provision of tap water (*Nal Jal*), as well as other public goods and welfare projects prioritised by citizens.

During village council meetings (*Gram Sabha*), the GP head and WMs gather with citizens to deliberate on schemes and issues of importance to the GP. WMs represent their constituents, raise issues specific to their wards, and negotiate over which projects are prioritised. Development plans are also discussed and determined at GP meetings held exclusively among elected representatives. Deliberations in these meetings shape the annual plan for each financial year, including the number of projects planned for each ward under each scheme and their corresponding estimated costs.

3 Research Design

3.1 Peer Effects Intervention

This study was conducted as part of a broader peer effects intervention (Bamezai et al., 2026) designed to study how peer networks affect the performance of locally elected politicians in rural Bihar. We sampled WMs across 10 districts of Bihar and randomly assigned them to treatment, control, or a spillover sample. Treated WMs were assigned to groups of 10–12 and participated in six in-person and virtual meetings over approximately one year.[6]

[5] At baseline, approximately 20% of surveyed WMs reported a political party affiliation.
[6] The six meetings took place between January 2023 and June 2024.

Because most WMs have limited professional networks outside their GPs, the intervention created peer groups of WMs drawn from across GPs within the same district. Moderators attended each meeting to record attendance and maintain the structure of the discussion around work-related issues. They were instructed not to participate substantively in the discussions.[7]

3.2 Randomization of SC Ward Members

The peer effects intervention samples a total of 7,719 ward members of which 3,460 were assigned to control groups, 2,424 to treatment groups and 1,835 ward members formed the spillover sample. While it was only the treatment groups that were exposed to peer group meetings, we randomly assign control ward members into peer groups of 10-12, to have a comparable set to our treatment sample. As a result, we have a total of 498 groups of which 206 were actually treated to peer meetings while the remaining 292 fictitious groups were assigned to control [8].

Within this sample, 2,533 ward members are SC. Across treatment and control, we randomly assign SC ward members to either SC-Only groups — groups where all members are SC, or in Mixed groups — groups where members can belong to any caste. The variation of treated groups as being either SC-only or Mixed allows us to identify how each group type distinctly impacts the performance of individual SC ward members in the role of local level political leaders.

Given the experiment design, we have a total of 808 treated SC Ward Members of which 386 are randomly assigned to Mixed groups and 422 assigned to SC-Only groups. To have a comparable untreated sample, we assign 564 of the SC WMs in control to fictitious SC-only groups and 1,161 of control SC ward members to fictitious Mixed groups.

3.3 Sampling

The peer effects intervention follows a two-stage randomisation within a total of 10 districts [9], first sampling GPs and then wards. Within each district, GPs were randomly drawn

[7] See Bamezai et al. (2026) for details on the intervention.

[8] Similar to treatment groups, the ward members in the control groups were randomized from within the same district

[9] The districts were selected based on population and region. 7 of the 10 distrcts were selected in terms of rural population, the remaining 3 were selected to represent districts from the south and the east.

out of 85% of the GPs within a 55 KM radius. Out of the randomly drawn GPs, 40% of GPs were assigned to treatment and the rest to control. For the second stage, we randomly drew 2 treatment wards and two spillover wards from each GP for the first 6 districts surveyed. In case of the last 4 districts, we surveyed four treatment wards and control wards, while keeping the spillover wards surveyed to two. Each group had 12 members, except in Samastipur district, where groups had 10 members. Table A3 and A4 detail the sampling strategy at the GP and Ward level that is followed for the larger peer effects intervention.

SC WMs: We oversampled SC WMs — 32.8% of our sample are SC versus 20.6% in our sample districts. Like other WMs, SCs are randomised into treatment, spillover or control. However, in addition, SC WMs are randomly assigned either to SC-only groups or mixed groups (both in treatment and control), which contain both SC and non-SC WMs. Out of 206 treatment groups, 36 were SC-only and these contained 53% of SC WMs.

4 Data

4.1 Data Sources

This study draws on data collected as part of the larger peer effects experiment described in Bamezai et al. (2026). These include surveys of WMs, records of peer-group meetings, administrative data, and a citizen survey.

The first two datasets are the baseline survey of 2,533 SC WMs and the endline survey of 2,064 SC WMs. These surveys collect information on demographic characteristics, political experience, campaign priorities, governance activities, and professional relationships. Third, we collected detailed records of peer-group interactions, allowing us to measure the informational content of meetings and exposure to peer learning. Fourth, we use administrative data on local governance outcomes, including GPDP records and NREGA administrative data. Finally, we conducted a citizen survey to measure spending priorities, perceptions of local governance, and assessments of elected representatives.

Using these data, we construct two broad sets of outcomes: WM-level outcomes and downstream governance outcomes.[10] WM-level outcomes include measures of knowledge, networks, and agency. Downstream governance outcomes capture public spending priorities, programme implementation, and citizens' preferences and perceptions of local governance. In addition, we use a rich set of baseline covariates, including WMs' caste,

[10] Appendix E provides detailed descriptions of variable construction and reproduces the survey questions used to construct the principal knowledge, network, confidence, and conflict measures.

education, political experience, and campaign priorities, as well as ward- and GP-level demographic characteristics.[11] Below, we provide an overview of these outcome measures.

4.2 WM-Level Outcomes

4.2.1 Knowledge

WMs' Knowledge We collect data on knowledge from the baseline and endline WM surveys. At baseline, we ask WMs to list the steps required to implement different schemes. At endline, we construct four measures of knowledge. First, we measure formal knowledge of codified procedures required for scheme implementation. Second, we measure tacit knowledge of informal implementation practices. Third, we construct a measure of procedural knowledge using scheme-specific factual questions about implementation rules and processes. Finally, we measure knowledge of best practices for addressing common governance and implementation challenges. We aggregate these four measures into a Combined Knowledge Index. The construction of these indices is detailed in Section E.1. The first two draw on questions asking WMs to list the steps required to implement a range of schemes. Steps explicitly codified in official guidelines contribute to the Formal Knowledge Index, while steps that reflect commonly understood field practices contribute to the Tacit Knowledge Index; both are standardised relative to the control group. The Procedural Knowledge Index instead uses objectively scored questions about specific scheme rules—such as eligibility criteria and documentation requirements—where answers are coded as correct or incorrect. Finally, the Best Practices Index uses scenario-based questions to capture whether WMs can identify effective, concrete solutions to common implementation challenges, distinguishing these from generic responses. The Combined Knowledge Index aggregates all four measures.

Knowledge Flow To measure the informational content of peer interactions, we collect detailed records of discussions during peer meetings.[12] For each discussion topic, we identify, where possible, the WM who raised the issue and the WM who proposed a solution. We also record the content of the problem and proposed solution.[13] Using these records,

[11] Ward populations are obtained from the Bihar State Election Commission, while GP-level demographic characteristics are drawn from Census 2011.

[12] Each meeting included a trained note-taker responsible for recording the issues discussed, the participants contributing solutions, and the content of proposed solutions.

[13] A problem might be: *The GP head is not releasing funds for the tap water scheme*." An example solution might be: *Call for a ward sabha* (*community meeting*), *put forward the issue among the constituents, and make a joint representation to the GP head asking him to release funds*." Alternatively: "*Petition the Block Development Officer by writing a letter and copying higher-level officials*." In in-person meetings, we observed that WMs would occasionally discuss the precise wording of petitions to higher-level officials or exchange phone numbers of

we construct scheme-specific measures of exposure to peer learning. For each WM and scheme, we measure both the number of best practices to which the WM was exposed and the total time spent discussing that scheme.

After each in-person meeting, WMs are asked which other WMs contributed the most to the discussion. Moderators also independently rate the overall usefulness of the discussion of each scheme on a Likert scale from 1 to 5. Using these records, we construct measures of meeting quality. These include meeting-scheme-level measures of usefulness, based on moderator ratings, and WM-level measures of the number of times a WM is identified by peers as a top contributor.

4.2.2 Networks

We measure networks using both baseline and endline surveys. At baseline, WMs report whether they know and discuss work-related matters with other WMs within and outside their GP. At endline, we first measure whether treated WMs know randomly selected members of their assigned peer groups. In the control arm, WMs are asked about members of their fictitious groups. This allows us to assess whether the intervention led WMs to form connections within their assigned peer groups. We then construct measures of two dimensions of professional and political networks: (i) connections with block-level bureaucrats—specifically, the BDO and BPRO, who are responsible for rural development and GP-related administration—and (ii) connections with political parties. For political parties, we also ask WMs which party they are affiliated with and construct measures of affiliation with different types of political parties.[14] These measures allow us to assess whether the intervention expanded professional and political networks among SC WMs (for details, see Section E.2).

relevant bureaucrats when attempting to resolve implementation bottlenecks.

[14]SC political parties include those whose agendas focus primarily on Dalit empowerment, have a primarily SC voter base, and have historically been led by SC party members. In Bihar, these primarily include the *Lok Janshakti Party* (LJP) and *Hindustani Awam Morcha* (HAM). Mainstream political parties include national-level parties with large voter shares and state-level parties that have held substantial shares of seats in the state legislature and national parliament over several decades. These include the Congress, the ruling party (*Bharatiya Janata Party*, BJP), Rashtriya Janata Dal (RJD), and Janata Dal United (JD(U)).

4.3 Governance Outcomes

4.3.1 Gram Panchayat Development Plan (GPDP) Data

We obtain GPDP data from the eGramSwaraj portal.[15] We use GPDP data for the 2024–25 financial year, which coincides with the period of our intervention. Using project descriptions together with the corresponding theme and sector fields, we classify projects into scheme categories.[16] These data are not available at the ward level, so we examine the impact of the intervention on planned spending priorities at the GP level. For further details, see Section E.3.

5 Empirical Analysis

We use three broad classes of empirical specifications. First, we estimate the direct effects of participation in peer groups on ward-level outcomes for SC WMs, comparing effects in SC-only and mixed groups. Second, we examine how group-level outcomes differ between SC-only and mixed groups. Third, we examine downstream governance outcomes within treated GPs based on the group assignment of SC WMs in the GP. For these downstream outcomes, we exploit scheme-level variation in (i) the schemes that SC WMs campaigned on and (ii) SC citizens' preferences for particular schemes.

5.1 Treatment Effects in SC-Only Groups

We estimate the treatment effect for SC WMs assigned to SC-only groups relative to those assigned to mixed groups. We compare SC WMs in treatment and control and interact treatment assignment with assignment to an SC-only group. We use the following specification:

[15] eGramSwaraj is the Government of India's online public portal for managing Gram Panchayat Development Plans (GPDPs), providing information on approved projects, their implementation status, and both planned and actual expenditures financed through Central Finance Commission grants.

[16] The scheme categories are housing construction subsidies (*Pradhan Mantri Awas Yojana*, PMAY), health insurance (*Ayushman Card*), education, water conservation (*Jal Jeevan Hariyali*, JJH), healthcare, marriage assistance (*Mukhyamantri Kanya Vivah Yojana*, MKVY), public grievance redressal (*Lok Shikayat*), solid and liquid waste management (*Lohiya Swachh Bharat Abhiyan*, LSBA), employment provided under the National Rural Employment Guarantee Act (NREGA), drains and lanes construction (*Nali-Gali*), provision of tap water (*Nal-Jal*), pensions, subsidised food rations (Public Distribution System, PDS), public service delivery (Right to Public Services, RTPS), educational financial assistance (scholarships), solar street lights, toilet construction subsidies (*Swachh Bharat Abhiyan*, SBM), and entrepreneurship support (*Mukhyamantri Udyami Yojana*, MUY). Projects that could not be reliably classified into a specific scheme based on the available project description, theme, and sector fields were classified as "Uncategorised".

$$Y_{wd} = \beta_1, \text{TreatedSC-WM}wd + \beta_2 \left(\text{TreatedSC-WM}wd \times \text{SC-Only}wd\right) + \mathbf{X}wd'\gamma + \delta_d + \varepsilon_{wd} \quad (1)$$

where Y_{wd} is the (standardised) outcome of interest for SC WM w in district d; TreatedSC-WMwd is an indicator equal to 1 if SC WM w was assigned to treatment; SC-Onlywd is an indicator equal to 1 if the SC WM's peer group is SC-only (as opposed to mixed); $\mathbf{X}_{wd}$ is a vector of ward-level controls; and δ_d denotes district fixed effects. The sample is restricted to SC WMs in treatment and control. Standard errors are clustered at the GP level. β_1 captures the treatment effect for SC WMs assigned to mixed groups, while β_2—the coefficient of interest—captures the differential treatment effect for SC WMs assigned to SC-only groups.

5.2 Group-Level Outcomes

We estimate correlations between group-level outcomes and SC-only groups using the following specification:

$$Y_g = \beta_1, \text{SC-Only}_g + \mathbf{X}_g'\gamma + \delta_d + \varepsilon_g \quad (2)$$

where Y_g is the outcome of interest for treatment peer group g; SC-Only$_g$ is an indicator equal to 1 if group g is composed entirely of SC WMs (as opposed to a mixed group); $\mathbf{X}_g$ is a vector of group-level controls, included in some specifications; and δ_d denotes district fixed effects. The sample is restricted to treatment groups. Standard errors are robust.

5.3 Downstream Outcomes within Treated GPs

For treated GPs with at least one SC WM, we examine how estimated spending on different schemes varies with the number of SC WMs assigned to SC-only and mixed groups in the GP. We are particularly interested in whether these relationships vary with SC WMs' campaign priorities and SC citizens' spending preferences. We estimate specifications of the following form:

$$\begin{aligned} \text{Cost}_{ij} = {} & \beta_1 \text{SC-Only}_i + \beta_2 \text{Mixed}_i + \beta_3 \text{Priority}_{ij} \\ & + \beta_4 \left(\text{SC-Only}_i \times \text{Priority}_{ij}\right) + \beta_5 \left(\text{Mixed}_i \times \text{Priority}_{ij}\right) \\ & + \mathbf{X}_i'\gamma + \delta_d + \delta_j + \varepsilon_{ij}, \end{aligned} \quad (3)$$

where Cost$_{ij}$ is the estimated GPDP cost (in '000 Rs.) of scheme j in GP i; SC-Only$i$ and

Mixed$i$ denote the number of SC WMs assigned to SC-only and mixed groups in GP i, respectively; $\mathbf{X}i$ is a vector of GP-level controls; and δ_d and δ_j are district and scheme fixed effects. Depending on the specification, Priorityij is one of two measures. SC-Campaignedij is the share of SC WMs in GP i who campaigned on scheme j, while CitizenPrefij is the share of SC citizens in GP i who report scheme j as a spending priority. The interaction coefficients β_4 and β_5 capture whether the association between an additional SC WM of each group type and planned spending varies with SC WMs' campaign priorities or SC citizens' preferences. Standard errors are robust.

5.4 Randomisation and Compliance

Take-up and Participation. Of the 2,533 SC WMs surveyed, approximately 89% expressed interest in participating in peer group meetings. Among SC WMs assigned to treatment, 99% attended at least one peer group meeting, either in person or through online conference calls, and 95% attended multiple meetings. Take-up was similarly high across group types: approximately 99% of SC WMs assigned to mixed groups and 98% of those assigned to SC-only groups attended at least one meeting.

Summary Statistics and Balance. We present summary statistics and assess balance across treatment assignments. Tables A1 and A2 present balance tests for GP- and ward-level characteristics, respectively, comparing treated SC WMs assigned to SC-only and mixed groups. Table A1 shows balance across a range of geographical, demographic, infrastructural, and financial characteristics at the GP level.

At the ward level, Table A2 shows balance between treated SC WMs assigned to SC-only and mixed groups across demographic characteristics, campaign issues, political experience, occupation, and measures of networks and knowledge.[17]

The average SC WM in our sample is approximately 39 years old and has fewer than 9.5 years of education. SC WMs assigned to treatment also have limited prior political experience: 63% of those assigned to mixed groups have no previous experience in the role. As in the full sample of WMs, 82% of treated SC WMs campaigned on drains and lanes construction (*Nali Gali*), followed by the provision of tap water (*Nal Jal*), pensions, and housing construction subsidies (*Pradhan Mantri Awas Yojana*, PMAY).

[17]See Tables A6,A7, andA5 for details on overall ward- and GP-level balance for the larger peer effects intervention.

6 Results

6.1 Knowledge

Direct Effects We begin by studying the impact of peer-group composition on knowledge among SC WMs. We measure knowledge at endline using a standardised combined index of formal, tacit, procedural, and best practices knowledge. Figure 1 compares the distribution of this index for SC and non-SC WMs across treatment conditions. In the first panel, the knowledge distribution for non-SC WMs in control lies marginally to the right of that for SC WMs in control. This gap closes when SC WMs are treated in SC-only groups: in the third panel, the distributions for SC and non-SC WMs largely overlap. In contrast, the gap widens under treatment when SC WMs are assigned to mixed groups, as shown in the second panel.

SC WMs assigned to SC-only groups experience a 0.18 SD increase in knowledge (Table A8). In contrast, SC WMs assigned to mixed groups experience no gains in knowledge, with an estimated treatment effect of -0.05 SD. The magnitudes of the gains appear similar across our different measures of knowledge, suggesting that SC WMs learn broadly.

6.2 What improves knowledge in SC-only groups?

Our results show that SC WMs learn more when they meet with other SC WMs in SC-only peer groups. Several mechanisms could account for this result.

First, we rule out the possibility that SC-only groups had WMs of higher quality than those in mixed groups. Table A14 shows that WMs in mixed groups are more educated (0.55 years lower, $p < 0.05$), while the two groups do not differ significantly in knowledge or confidence.

We also rule out that more information was exchanged: SC-only groups generate a similar number of best practices and raise a similar number of issues for each scheme (see Table A9).

Next, we rule out the possibility that greater own-community representation drives these effects. Among SC WMs in mixed groups, increases in knowledge are not correlated with the number of best practices provided by own-caste peers (Table A10). Thus, simply increasing the share of own-caste peers does not appear to facilitate greater learning among SC WMs. The gains instead emerge when SC WMs are placed in groups composed entirely of other SC WMs.

Instead, we find that SC WMs in SC-only groups develop stronger bonds with their peers, participate more actively inside and outside meetings, and have more effective dis-

cussions. SC WMs in SC-only groups are more likely than those in mixed groups to know their peers after the intervention. Column (1) of Panel A in Table 2 shows that the probability of knowing another WM from the peer group at endline is 9 percentage points higher for SC WMs in SC-only groups ($p < 0.01$). These groups also engage more outside peer meetings. Column (2) of Panel A shows that SC-only groups exchange more WhatsApp messages (46 more messages per group, $p < 0.1$).

We also find that SC WMs in SC-only groups are more likely to be identified as top contributors to discussions, indicating greater participation (Column (1) of Panel B, Table 2). Moreover, moderators rate scheme-level discussions in SC-only groups as more useful (0.09 SD, $p < 0.1$); see Panel B, column (2) of Table 2).

SC WMs in SC-only groups also generate more solutions for schemes that they campaigned on at baseline. Table A11 shows that the number of solutions provided increases by 0.069 for SC WMs in SC-only groups when discussing schemes that they campaigned on at baseline (30% increase). Finally, SC WMs in SC-only groups spend more time discussing different schemes. Table A12 shows that WMs spend, on average, half a minute more discussing each scheme across all six meetings in SC-only groups. However, this additional time is spread across topics rather than concentrated on issues that concern SC citizens or that SC WMs campaigned on (see Figure A1).

Heterogeneous Treatment Effects on Knowledge We explore heterogeneity in treatment effects among SC WMs assigned to SC-only and mixed groups. We use the causal forests method of Wager and Athey (2018) to estimate conditional average treatment effects (CATEs) on the endline knowledge index for both groups.

Figure 2a presents the distribution of CATEs for mixed groups (left) and SC-only groups (right). For SC-only groups, nearly the entire distribution lies above zero, suggesting that most SC WMs are predicted to experience positive knowledge gains from participating in peer group meetings. In mixed groups, by contrast, only a small share in the right tail is predicted to experience positive gains.

Figure 2b plots predicted endline knowledge against baseline knowledge for SC WMs assigned to SC-only and mixed groups. Among SC WMs in SC-only groups, the relative gains are largest for those with baseline knowledge between approximately the 30th and 60th percentiles. In contrast, among SC WMs in mixed groups, only those who are most advantaged at baseline are predicted to benefit from participation in peer groups.

6.3 Networks

Participation in peer groups allows WMs to make gains beyond knowledge. Connecting with politicians who work on similar issues may allow WMs to expand their professional and political networks beyond the peer group itself. For SC WMs, this is particularly relevant because they have weaker political networks before the intervention (0.09 SD, $p < 0.01$; see Table A13).

We first test the effect of the intervention on professional networks among SC WMs assigned to SC-only and mixed groups. Because WMs interact with higher-level bureaucrats to implement development projects in their wards, we examine whether peer group meetings affect their networks with block-level bureaucrats. Column (1) of Table 1 shows that bureaucratic networks improve only for SC WMs in mixed groups. SC WMs in SC-only groups have significantly weaker bureaucratic networks at endline than those in mixed groups. The overall treatment effect for SC WMs in SC-only groups is null ($p = 0.511$).

Political networks show the opposite pattern. Table 1 shows that peer groups significantly improve political networks for SC WMs assigned to SC-only groups, with a 0.16 SD increase ($p < 0.05$) in the political party networks index (Column 2). In contrast, SC WMs assigned to mixed groups show no improvement in political networks.

To understand what drives this improvement, we disaggregate the political networks index into networks with SC political parties and mainstream political parties. Column (3) of Table 1 shows that the improvement among SC WMs in SC-only groups is driven by networks with SC political parties. While the effect is not significantly different between SC WMs assigned to SC-only and mixed groups, the total treatment effect on SC political party networks for SC WMs in SC-only groups is 0.19 SD ($p < 0.1$).

6.4 Downstream Outcomes

To examine how the effects of peer group meetings extend to downstream outcomes, we study the estimated costs of planned projects under each scheme in a GP. Because planning and allocation decisions are made at the GP level, we conduct the analysis at the GP-scheme level. We focus on treated GPs with at least one SC WM and examine how planned spending varies with the number of SC WMs assigned to SC-only and mixed groups. Since higher spending alone need not indicate more effective public service delivery, we examine whether spending is aligned with the campaign priorities of SC WMs and the preferences of SC citizens.

Issues Campaigned Table 3 shows how estimated costs vary with the composition of SC WMs in the GP and their campaign priorities. We find that SC WMs assigned to SC-only groups shift resources towards schemes that SC WMs campaigned on. Column (2) shows that each additional SC WM assigned to an SC-only group is associated with an additional ₹173,148 ($p < 0.05$; an increase of 23%) in estimated spending as the share of SC WMs who campaigned on a scheme moves from zero to one. This differential effect is not statistically significant for SC WMs assigned to mixed groups.

Citizen Preferences Column (4) of Table 3 shows how estimated costs vary with the composition of SC WMs in the GP and SC citizens' preferences. Each additional SC WM assigned to an SC-only group is associated with a ₹16,639 decrease ($p < 0.05$) in estimated spending when the share of SC citizens preferring a scheme is zero. However, spending becomes significantly more aligned with SC citizens' preferences: as the share of SC citizens preferring a scheme moves from zero to one, each additional SC WM assigned to an SC-only group is associated with an additional ₹173,013 ($p < 0.1$; an increase of 30%)in estimated spending. We find a similar, though smaller, alignment effect for SC WMs assigned to mixed groups. As the share of SC citizens preferring a scheme moves from zero to one, each additional SC WM assigned to a mixed group is associated with an additional ₹135,262 ($p < 0.1$; an increase of 23%) in estimated spending.

7 Conclusion

Randomising leaders from marginalised groups into safe spaces and groups with elite networks allows us to directly compare two approaches to empowering marginalised politicians. We find that SC WMs benefit substantially more from peer interactions when they take place in safe spaces. SC WMs assigned to SC-only groups acquire more governance knowledge, closing the knowledge gap with non-SC politicians, while those assigned to mixed groups show no gains. Safe spaces also strengthen political networks and improve how SC WMs engage with their peers. During meetings, WMs in SC-only groups participate more actively, spend more time discussing schemes, and generate more solutions for schemes they campaigned on. Outside meetings, they are more likely to know their peers and interact more on WhatsApp. Moderators also rate discussions in SC-only groups as more useful.

These gains extend to downstream governance outcomes. Having more SC WMs assigned to SC-only groups shifts planned expenditure towards schemes that SC WMs campaigned on and towards those preferred by SC citizens. SC WMs assigned to mixed groups

also shift planned spending towards schemes preferred by SC citizens, but the alignment is weaker, and we find no corresponding alignment with their campaign priorities.

Mixed groups do provide one important benefit: SC WMs assigned to them develop stronger networks with block-level bureaucrats. Access to advantaged peers can therefore provide marginalised politicians with connections they otherwise lack. But these connections are not accompanied by the gains in knowledge, participation, and political networks that we observe in safe spaces. Taken together, our results suggest that simply connecting marginalised leaders to more advantaged peers may not be sufficient to empower them. The social environment in which peer interactions take place shapes whether access to peers translates into learning, political connections, and greater responsiveness to constituents' priorities.

Future research could examine why safe spaces generate more effective knowledge flows. In particular, more work is needed to understand which features of discussion and deliberation facilitate learning among marginalised peers and what limits information diffusion in groups containing more advantaged peers. Future research could also examine whether these effects persist over time and translate into longer-run changes in political behaviour and governance.

References

Afridi, Farzana, Vegard Iversen, and M.R. Sharan, "Women Political Leaders, Corruption, and Learning: Evidence from a Large Public Program in India," *Economic Development and Cultural Change*, 2017, *66* (1), 1–30.

Bamezai, Apurva, Siddharth George, Siddharth Hari, M.R. Sharan, and Munish Sharma, "Learning to Govern: The Impact of Politicians' Peer Networks," 2026. Working paper.

Bandiera, Oriana, Niklas Buehren, Robin Burgess, Markus Goldstein, Selim Gulesci, Imran Rasul, and Munshi Sulaiman, "Women's Empowerment in Action: Evidence from a Randomized Control Trial in Africa," *American Economic Journal: Applied Economics*, 2020, *12* (1), 210–259.

Battaglini, Marco and Eleonora Patacchini, "Social Networks in Policy Making," *Annual Review of Economics*, 2019, *11*, 473–494.

_ , Valerio Leone Sciabolazza, and Eleonora Patacchini, "Effectiveness of Connected Legislators," *American Journal of Political Science*, 2020, *64* (4), 739–756.

Besley, Timothy, Rohini Pande, Lupin Rahman, and Vijayendra Rao, "The Politics of Public Good Provision: Evidence from Indian Local Governments," *Journal of the European Economic Association*, 2004, *2* (2–3), 416–426.

Bó, Ernesto Dal, Frederico Finan, and Pedro Pessoa, "Democratic Renewal: Evaluating a Training Program for New Politicians," Working Paper 33251, National Bureau of Economic Research 2024.

Boisjoly, Johanne, Greg J. Duncan, Michael Kremer, Dan M. Levy, and Jacque Eccles, "Empathy or Antipathy? The Impact of Diversity," *American Economic Review*, 2006, *96* (5), 1890–1905.

Booij, Adam S., Edwin Leuven, and Hessel Oosterbeek, "Ability Peer Effects in University: Evidence from a Randomized Experiment," *Review of Economic Studies*, 2017, *84* (2), 547–578.

Booth, Alison, Lina Cardona-Sosa, and Patrick Nolen, "Do Single-Sex Classes Affect Academic Achievement? An Experiment in a Coeducational University," *Journal of Public Economics*, 2018, *168*, 109–126.

Cai, Jing and Adam Szeidl, "Interfirm Relationships and Business Performance," *Quarterly Journal of Economics*, 2018, *133* (3), 1229–1282.

Canen, Nathan, Matthew O. Jackson, and Francesco Trebbi, "Social Interactions and Legislative Activity," *Journal of the European Economic Association*, 2023, *21* (3), 1072–1118.

Chattopadhyay, Raghabendra and Esther Duflo, "Women as Policy Makers: Evidence from a Randomized Policy Experiment in India," *Econometrica*, 2004, *72* (5), 1409–1443.

Chin, Aimee and Nishith Prakash, "The Redistributive Effects of Political Reservation for Minorities: Evidence from India," *Journal of Development Economics*, 2011, *96* (2), 265–277.

Conley, Timothy G. and Christopher R. Udry, "Learning about a New Technology: Pineapple in Ghana," *American Economic Review*, 2010, *100* (1), 35–69.

Corno, Lucia, Eliana La Ferrara, and Justine Burns, "Interaction, Stereotypes, and Performance: Evidence from South Africa," *American Economic Review*, 2022, *112* (12), 3848–3875.

Cullen, Zoë and Ricardo Perez-Truglia, "The Old Boys' Club: Schmoozing and the Gender Gap," *American Economic Review*, 2023, *113* (7), 2163–2212.

Dahl, Gordon B., Andreas Kotsadam, and Dan-Olof Rooth, "Does Integration Change Gender Attitudes? The Effect of Randomly Assigning Women to Traditionally Male Teams," *Quarterly Journal of Economics*, 2021, *136* (2), 987–1030.

Desai, Sonalde and Reeve Vanneman, "India human development survey-ii (ihds-ii), 2011-12. icpsr36151-v2," Technical Report 2012.

Deshpande, A., *The Grammar of Caste: Economic Discrimination in Contemporary India*, Oxford University Press, 2011.

Duflo, Esther, Pascaline Dupas, and Michael Kremer, "Peer Effects, Teacher Incentives, and the Impact of Tracking: Evidence from a Randomized Evaluation in Kenya," *American Economic Review*, 2011, *101* (5), 1739–1774.

Dunning, Thad and Janhavi Nilekani, "Ethnic Quotas and Political Mobilization: Caste, Parties, and Distribution in Indian Village Councils," *American Political Science Review*, 2013, *107* (1), 35–56.

Field, Erica, Seema Jayachandran, Rohini Pande, and Natalia Rigol, "Friendship at Work: Can Peer Effects Catalyze Female Entrepreneurship?," *American Economic Journal: Economic Policy*, 2016, *8* (2), 125–153.

Foster, Andrew D. and Mark R. Rosenzweig, "Learning by Doing and Learning from Others: Human Capital and Technical Change in Agriculture," *Journal of Political Economy*, 1995, *103* (6), 1176–1209.

Fowler, James H., "Connecting the Congress: A Study of Cosponsorship Networks," *Political Analysis*, 2006, *14* (4), 456–487.

Gulzar, Saad and Muhammad Yasir Khan, "Good Politicians: Experimental Evidence on Motivations for Political Candidacy and Government Performance," *Review of Economic Studies*, 2025, *92* (1), 339–364.

_ , **Nicholas Haas, and Benjamin Pasquale**, "Does Political Affirmative Action Work, and for Whom? Theory and Evidence on India's Scheduled Areas," *American Political Science Review*, 2020, *114* (4), 1230–1246.

Harmon, Nikolaj, Raymond Fisman, and Emir Kamenica, "Peer Effects in Legislative Voting," *American Economic Journal: Applied Economics*, 2019, *11* (4), 156–180.

Iacovone, Leonardo, William Maloney, and David McKenzie, "Improving Management with Individual and Group-Based Consulting: Results from a Randomized Experiment in Colombia," *Review of Economic Studies*, 2022, *89* (1), 346–371.

Jensenius, Francesca Refsum, "Development from Representation? A Study of Quotas for the Scheduled Castes in India," *American Economic Journal: Applied Economics*, 2015, *7* (3), 196–220.

Kofoed, Michael S. and Elizabeth McGovney, "The Effect of Same-Gender or Same-Race Role Models on Occupation Choice: Evidence from Randomly Assigned Mentors at West Point," *Journal of Human Resources*, 2019, *54* (2), 430–467.

Kumar, Chinmaya and M.R. Sharan, "Something to Complain About: How Minority Representatives Overcome Ethnic Differences," 2025. Mimeo, University of Maryland.

_ **and** _ , "The Short- and Long-Run Distributional Consequences of Political Reservation," 2026. Revise and resubmit, Journal of the European Economic Association.

Lowe, Matt, "Types of Contact: A Field Experiment on Collaborative and Adversarial Caste Integration," *American Economic Review*, 2021, *111* (6), 1807–1844.

Michelman, Valerie, Joseph Price, and Seth D. Zimmerman, "Old Boys' Clubs and Upward Mobility Among the Educational Elite," *Quarterly Journal of Economics*, 2022, *137* (2), 845–909.

Mousa, Salma, "Building Social Cohesion between Christians and Muslims through Soccer in Post-ISIS Iraq," *Science*, 2020, *369* (6505), 866–870.

Munshi, K. and M. Rosenzweig, "Networks and Misallocation: Insurance, Migration, and the Rural-Urban Wage Gap," *American Economic Review*, 2016, *106* (1), 46–98.

Pande, Rohini, "Can Mandated Political Representation Increase Policy Influence for Disadvantaged Minorities? Theory and Evidence from India," *American Economic Review*, 2003, *93* (4), 1132–1151.

Papay, John P., Eric S. Taylor, John H. Tyler, and Mary E. Laski, "Learning Job Skills from Colleagues at Work: Evidence from a Field Experiment Using Teacher Performance Data," *American Economic Journal: Economic Policy*, 2020, *12* (1), 359–388.

Prillaman, Soledad Artiz, "Strength in Numbers: How Women's Groups Close India's Political Gender Gap," *American Journal of Political Science*, 2023.

Rao, Gautam, "Familiarity Does Not Breed Contempt: Generosity, Discrimination, and Diversity in Delhi Schools," *American Economic Review*, 2019, *109* (3), 774–809.

Sacerdote, Bruce, "Peer Effects in Education: How Might They Work, How Big Are They and How Much Do We Know Thus Far?," in "Handbook of the Economics of Education," Vol. 3, Elsevier, 2011, pp. 249–277.

Sandvik, Jason J., Richard E. Saouma, Nathan T. Seegert, and Christopher T. Stanton, "Workplace Knowledge Flows," *Quarterly Journal of Economics*, 2020, *135* (3), 1635–1680.

Sharan, MR and Chinmaya Kumar, "The Short-and Long-Run Distributional Consequences of Political Reservation."

Singh, S. and A. Thorat, "Caste Restricted Occupation Mobility; Have Reforms Compelled Employers to Be Caste Blind?," *Himalayan Journal of Contemporary Research*, 2014, *3.*

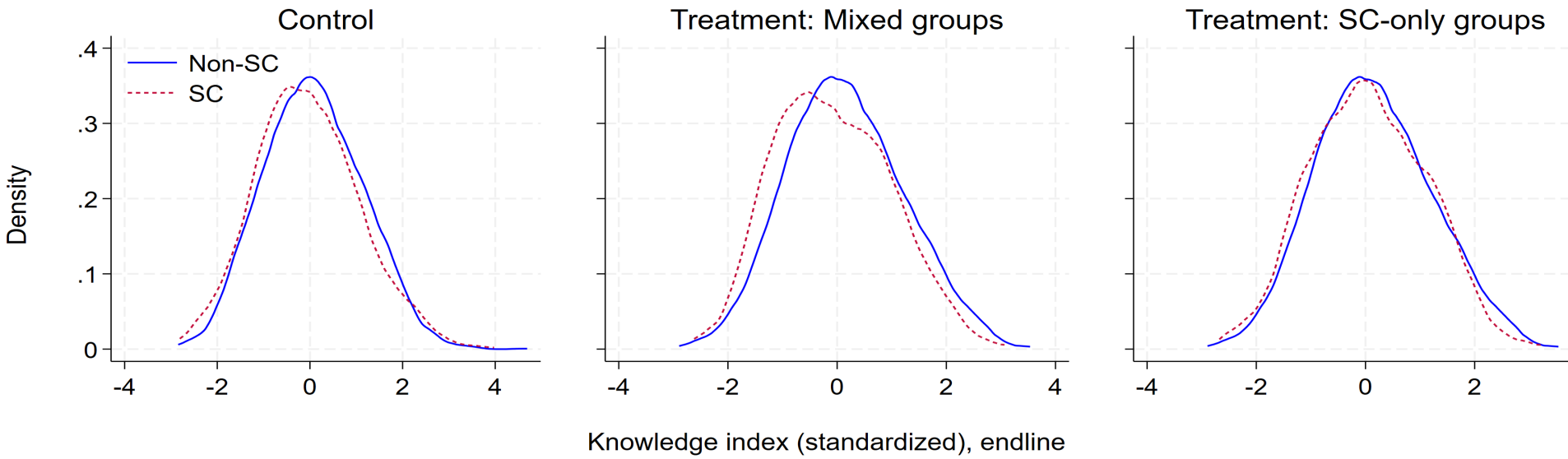
Thorat, S. and K. S. Newman, "Caste and Economic Discrimination: Causes, Consequences and Remedies," *Economic and Political Weekly*, 2007, pp. 4121–4124.

Wager, Stefan and Susan Athey, "Estimation and Inference of Heterogeneous Treatment Effects Using Random Forests," *Journal of the American Statistical Association*, 2018, *113* (523), 1228–1242.

Zimmerman, Seth D., "Elite Colleges and Upward Mobility to Top Jobs and Top Incomes," *American Economic Review*, 2019, *109* (1), 1–47.

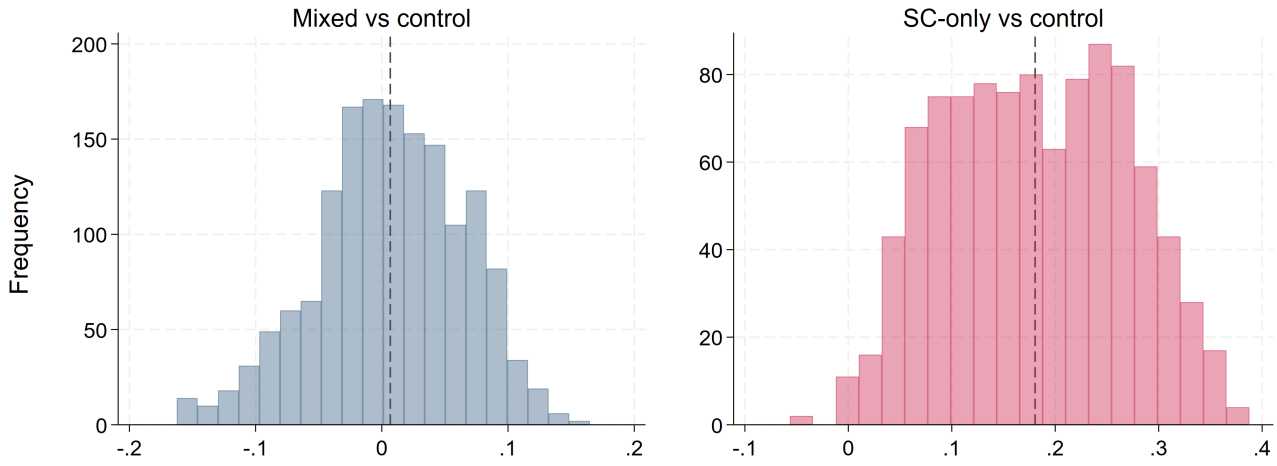
A Main Figures

Figure 1. **Endline Knowledge Distribution: SC vs. Non-SC Ward Members, by Group Type**

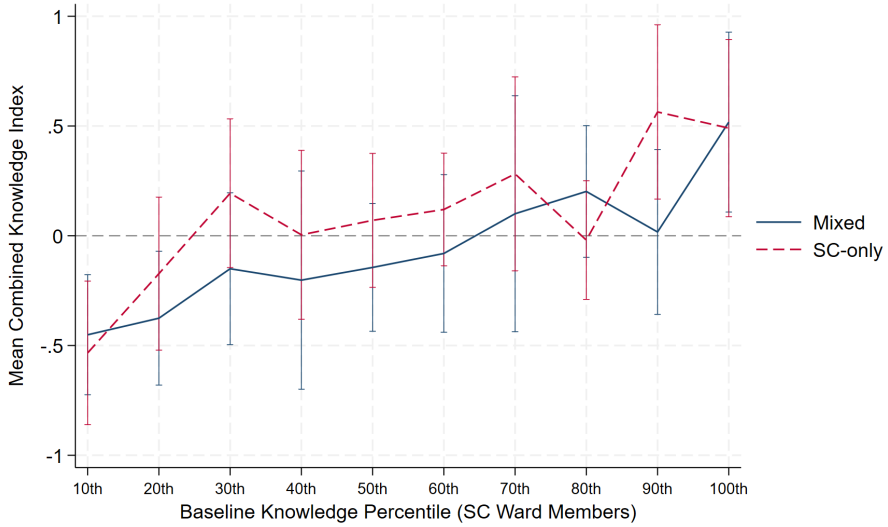


Notes: The above figure shows the kernel density plots of the standardized endline knowledge index. The left panel compares non-SC and SC ward members in control wards; the middle panel compares non-SC ward members and SC ward members in mixed peer groups in treated wards; the right panel compares non-SC ward members and SC ward members in SC-only peer groups in treated wards.

Figure 2. **Heterogeneity in the SC-only Group Effect on Knowledge**



(a) Predicted Individual Treatment Effects on Knowledge (SC Ward Members)



(b) Endline Knowledge by Baseline Knowledge Percentile, SC-only vs. Mixed Groups

Notes: Panel (a) plots predicted individual average treatment effects (IATE) in SD units on knowledge for SC ward members, estimated via causal forest on individual-level characteristics, comparing mixed groups to control (left) and SC-only groups to control (right). Dashed lines represent means. Panel (b) plots mean endline knowledge, with 95% confidence intervals, by baseline knowledge percentile, for SC ward members in treated wards, separately for mixed and SC-only groups.

B Main Tables

Table 1. **Impact on Professional Networks through Heterogeneity by SC only Treatment Groups**

	(1) **Block Bureaucrat Network (std)**	(2) **Political Party Network (std)**	(3) **SC Political Party Network (std)**	(4) **Main Political Party Network (std)**
Treatment Ward	0.1911**	-0.0832	-0.0152	-0.1212
	(0.0783)	(0.0711)	(0.1084)	(0.1023)
Treatment Ward × SC only group	-0.2370**	0.2385**	0.2089	0.2176
	(0.1059)	(0.1022)	(0.1468)	(0.1372)
Observations	1469	1465	1469	1469
Ward-Level Controls	Yes	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes
Control Mean	0	0	0	0
Total Effect p-value	0.511	0.033	0.066	0.310

Notes: The above table reports the treatment effect and the interaction effect of being in an SC only treatment group on professional networks for SC ward members in peer effects intervention sample. The row *Total Effect p-value* reports the p-value from a linear combination test (Treatment Ward + Treatment Ward × SC only group), i.e. the significance of the total treatment effect for SC ward members in SC-only groups. All indices are standardised using the control mean. All regressions include ward-level controls and district fixed effects. Standard errors are clustered at the UGP level and are reported in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 2. **Impact of SC-Only Groups on Treated SC Ward Members: Participation, Peer Bonds and Discussion Quality**

	(1) **Peer Know.**	(2) **WhatsApp Messages**
Panel A: Peer Networks		
SC-only Group	0.090***	46.536*
	(0.033)	(24.025)
Observations	664	206
WM Controls	No	No
Ward-Level Controls	No	No
District Fixed Effects	Yes	Yes
Control Mean	.543	107.041
	Top Contributor Mentions	**Meeting Usefulness (std)**
Panel B: Peer Meeting Quality		
SC-only Group	1.092***	0.085*
	(0.120)	(0.047)
Observations	747	4802
WM Controls	Yes	No
Ward-Level Controls	Yes	No
District Fixed Effects	Yes	No
Meeting Fixed Effects	No	Yes
Scheme Fixed Effects	No	Yes
Moderator Fixed Effects	No	Yes
Control Mean	.202	0

Notes: The above table reports effects and correlations of SC ward members in SC-only groups and SC-only groups on measures of networks outside the meetings and on overall meeting quality. Sample is restricted to treated SC ward members. Panel A, Column (1) reports the effect of being an SC WM in SC-only group on the probability of knowing a peer group ward member outside the meeting; Column (2) reports the SC-only group effect on WhatsApp messages, estimated at the peer group level. Panel B, column (1) reports the effect of being an SC WM in a SC-only group on the number of times a WM is being mentioned as a top contributor by peers in the meeting. Panel B, column (2) reports the correlation of SC-only groups to the usefulness rating provided by moderators on scheme discussions in each peer group meeting. All columns are estimated on treated SC ward members or on treated peer groups. Column (1) of Panel B includes ward member and ward-level controls plus a control for baseline knowledge ranking within group; Column (2) of Panel B absorbs meeting, scheme, and moderator fixed effects. Standard errors are clustered at the UGP level in Panel A Column (1) and Panel B Column (1); robust in Panel A Column (2); and clustered at the peer-group level in Panel B Column (2). $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 3. **GPDP Estimated Cost: Treated GP SC Ward Member Composition, by Issue Campaigning and Citizen Preferences**

	Issues Campaigned		**Citizen Preferences**	
	Est. Cost ('000 Rs.)	Est. Cost ('000 Rs.)	Est. Cost ('000 Rs.)	Est. Cost ('000 Rs.)
Count SC WMs in SC-only groups	-27.422*	-28.260*	-16.908**	-16.639**
	(14.219)	(14.439)	(7.566)	(8.042)
Count SC WMs in Mixed groups	4.525	3.322	2.493	0.865
	(12.213)	(11.554)	(6.157)	(6.851)
SC Campaigned	-100.679	-103.903		
	(85.077)	(91.376)		
Count SC WMs in SC-only groups × SC Campaigned	172.754***	173.148**		
	(66.602)	(73.424)		
Count SC WMs in Mixed groups × SC Campaigned	54.099	55.049		
	(54.691)	(59.938)		
Citizen Pref. for Local Gov.			-176.220	-177.621
			(118.809)	(130.741)
Count SC WMs in SC-only groups × Citizen Pref. for Scheme j			173.224**	173.013*
			(80.554)	(95.663)
Count SC WMs in Mixed groups × Citizen Pref. for Scheme j			134.877**	135.262*
			(66.033)	(75.007)
Observations	5776	5776	8172	8172
Control Group Mean	756.62	756.62	575.01	575.01
GP Level Controls	No	Yes	No	Yes
District Fixed Effects	Yes	Yes	Yes	Yes
Total Effect (SC-only) p-value	0.019	0.039	0.051	0.103
Total Effect (Mixed) p-value	0.240	0.304	0.036	0.071

Notes: Sample restricted to treated GPs with at least one SC ward member in an SC-only or mixed group. Estimated cost is measured in thousands of Rupees. Columns (1)-(2) report results by whether the issue was campaigned on by an SC ward member. Columns (3)-(4) report results by SC citizens' stated preference for local government provision. Columns (2) and (4) additionally include GP-level controls. The rows *Total Effect (SC-only/Mixed, SC Campaigned) p-value* report the p-values from linear combination tests (Count SC WMs in SC-only/Mixed groups) + its interaction with SC Campaigned), i.e. the significance of the total marginal effect of ward member count at full campaigning on the scheme. All regressions control for district and scheme fixed effects. Robust standard errors are reported in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Appendix

C Appendix Figures **33**

D Appendix Tables **34**

E Appendix: Construction of Key Variables **48**

E.1 Knowledge 48

E.2 Networks 50

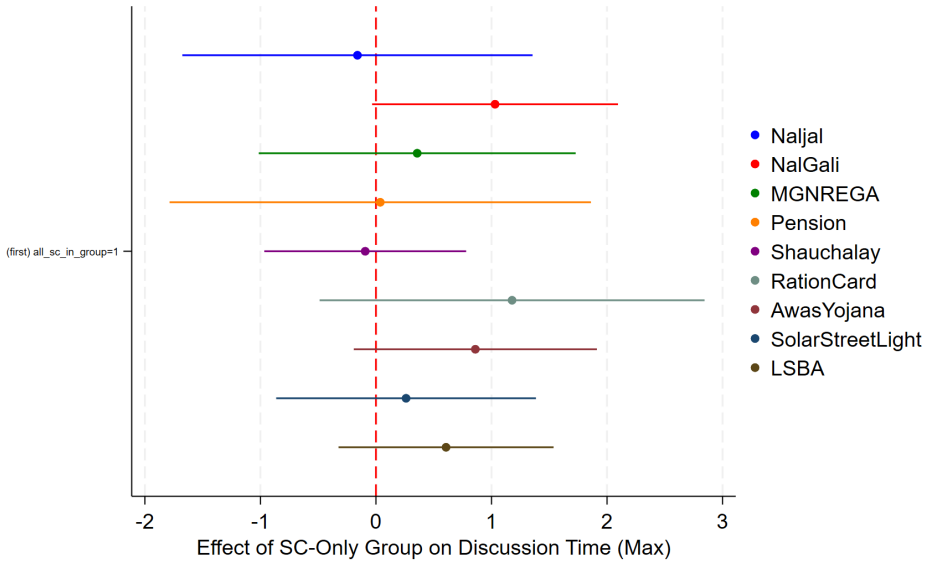
E.3 GPDP Analysis 51

E.4 Ward Member Campaign Priorities 52

E.5 Citizen Preferences 52

C Appendix Figures

Figure A1. **Effect of SC-Only Groups on Discussion Time, by Scheme**



Notes: Each coefficient reports the effect of being in an SC-only group on maximum discussion time for a given scheme, estimated separately by scheme with meeting fixed effects and standard errors clustered at the group level. Sample restricted to SC ward members in treated wards.

D Appendix Tables

Table A1. **Balance Test: Mixed vs. SC-Only Groups, GP-Level Characteristics (Treated GPs)**

Variable	(1) Mixed Group	(2) SC-Only Group	(3) (1) vs (2)
Proportion of SCs (Census 2011)	0.19	0.20	0.00
	(0.09)	(0.10)	(0.00)
Distance to District Headquarters (Census 2011)	29.03	30.02	0.80
	(13.29)	(13.80)	(0.92)
Total GP Area (Census 2011)	1,067.93	1,101.11	41.20
	(530.89)	(716.07)	(40.11)
Total Population of GP (Census 2011)	12,367.67	12,441.68	56.99
	(4,245.73)	(5,115.20)	(317.79)
Number of Villages in GP (Census 2011)	5.52	5.66	0.22
	(4.44)	(4.53)	(0.25)
Percentages of SCs in Main SC Village (Census 2011)	0.55	0.55	0.01
	(0.24)	(0.23)	(0.01)
SC Reserved	0.21	0.19	-0.02
	(0.41)	(0.39)	(0.03)
ST Reserved	0.00	0.00	-0.00
	(0.05)	(0.05)	(0.00)
EBC Reserved	0.19	0.18	-0.00
	(0.39)	(0.38)	(0.03)
Gender Reserved	0.46	0.48	0.02
	(0.50)	(0.50)	(0.04)
Total Educational Facilities (Census 2001)	3.77	3.66	-0.06
	(2.01)	(1.95)	(0.12)
Primary Health Sub Centres (Census 2001)	0.40	0.36	-0.03
	(0.68)	(0.62)	(0.05)
Post Office (Census 2001)	1.05	1.07	0.03
	(0.82)	(0.78)	(0.06)
Bank Facilities (Census 2001)	0.31	0.34	0.02
	(0.65)	(0.64)	(0.04)
Power Supply (Census 2001)	1.91	1.79	-0.10
	(2.03)	(1.90)	(0.14)
Paved Road (Census 2001)	1.95	1.71	-0.26**
	(1.84)	(1.49)	(0.11)
Mud Road (Census 2001)	4.38	4.38	0.04
	(3.38)	(3.35)	(0.21)
Child Welfare Centre (Census 2001)	0.04	0.03	-0.01
	(0.24)	(0.19)	(0.02)
Bus facilities (Census 2001)	0.59	0.50	-0.08
	(1.08)	(0.96)	(0.07)
Mean Village Income (Census 2001)	456,697.81	545,432.50	73,701.26
	(3,002,001.25)	(3,584,405.50)	(228,645.56)
Mean Village Expenditure (Census 2001)	270,188.38	290,684.78	14,159.72
	(1,572,792.38)	(1,492,694.00)	(106,971.91)
Observations	386	422	808

Notes: Sample restricted to treated SC ward members. The table compares GP-level census and administrative characteristics for GPs where the treated SC ward member's peer group is mixed (Column 1) versus SC-only (Column 2); Column (3) reports the difference, with robust standard errors in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A2. **Balance Test: SC Ward Member Characteristics, Mixed vs. SC-Only Groups**

Variable	(1) Mixed Group	(2) SC-Only Group	(3) (1) vs (2)
Ward Population	822.34	802.78	-19.05
	(330.43)	(149.27)	(19.29)
Ward SC Population	323.18	361.28	29.33
	(182.89)	(365.86)	(26.09)
Votes Obtained	159.61	155.53	-2.11
	(60.43)	(58.88)	(4.87)
Tot. Candidates	4.42	4.67	0.27*
	(1.69)	(1.81)	(0.14)
Age	39.17	38.63	-0.54
	(12.11)	(11.55)	(0.93)
SC	1.00	1.00	0.00
	(0.00)	(0.00)	(0.00)
Hindu	0.99	0.99	0.00
	(0.12)	(0.11)	(0.01)
Muslim	0.01	0.00	-0.01
	(0.09)	(0.05)	(0.01)
Years of Education	9.81	9.84	0.24
	(4.11)	(4.29)	(0.32)
*Campaigned:*Drains and lanes	0.85	0.82	-0.02
	(0.35)	(0.38)	(0.03)
Campaigned: Tap water	0.51	0.52	0.02
	(0.50)	(0.50)	(0.04)
Campaigned: Pension	0.20	0.19	-0.00
	(0.40)	(0.39)	(0.03)
Campaigned: Housing	0.29	0.28	0.02
	(0.45)	(0.45)	(0.03)
Prev. Experience	0.37	0.33	-0.03
	(0.48)	(0.47)	(0.03)
Prev. Experience (Family)	0.08	0.08	-0.00
	(0.28)	(0.27)	(0.02)
Income Source: Agriculture	0.23	0.30	0.07**
	(0.42)	(0.46)	(0.03)
Received training	0.90	0.93	0.03
	(0.30)	(0.25)	(0.02)
Observations	386	422	808

Table A2. **Balance Test: SC Ward Member Characteristics, Mixed vs. SC-Only Groups (continued)**

Variable	(1) Mixed Group	(2) SC-Only Group	(3) (1) vs (2)
Knowledge: Housing	0.37	0.38	0.02
	(0.18)	(0.18)	(0.01)
Knowledge: Drains & Lanes	0.21	0.19	-0.01
	(0.22)	(0.21)	(0.02)
Knowledge: Tap Water	0.08	0.10	0.03
	(0.12)	(0.14)	(0.03)
Knowledge: PDS	0.65	0.71	0.06
	(0.37)	(0.35)	(0.06)
Knowledge: Pension	0.51	0.54	0.02
	(0.27)	(0.29)	(0.04)
Knowledge: Solar Lights	0.39	0.37	-0.02
	(0.27)	(0.28)	(0.02)
Knowledge Index Z Score	-0.10	-0.16	-0.02
	(0.99)	(0.97)	(0.07)
Knowledge Index (PCA)	-0.32	0.25	0.72***
	(1.40)	(1.78)	(0.27)
Networks: Block	0.21	0.21	0.02
	(0.48)	(0.49)	(0.04)
Networks: Dist.	0.02	0.04	0.01
	(0.15)	(0.21)	(0.01)
Networks: State	0.00	0.00	-0.00
	(0.05)	(0.00)	(0.00)
Networks: All	0.22	0.24	0.03
	(0.53)	(0.55)	(0.04)
Interested in Peer	0.94	0.97	0.02
Learning	(0.24)	(0.18)	(0.02)
Pol. Party Involvement	0.18	0.18	-0.01
	(0.38)	(0.38)	(0.03)
WhatsApp	0.78	0.76	-0.02
	(0.41)	(0.43)	(0.03)
Observations	386	422	808

Notes: Sample restricted to SC ward members in treated wards, comparing those whose peer group is mixed (Column 1) to those in an SC-only group (Column 2); Column (3) reports the difference, with standard errors clustered at the UGP level in parentheses. The first panel reports balance on ward and candidate characteristics (population, votes, demographics, education, campaign issues, prior experience, income source, and training); the second panel reports balance on baseline knowledge (by scheme and combined index) and peer network measures. All comparisons control for week and district fixed effects. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A3. **Districtwise GP Counts and Sampling Strategy**

District	GP Sampling	Total GPs	Control GP	Treatment GP
Banka	85% of GPs within a 55 KM radius	139	79	60
Darbhanga	85% of GPs within a 55 KM radius	228	132	96
Gaya	85% of GPs within a 55 KM radius	234	138	96
Jehanabad	85% of GPs within a 55 KM radius	75	39	36
Madhubani	85% of GPs within a 55 KM radius	262	154	108
Muzaffarpur	85% of GPs within a 55 KM radius	296	120	176
Purbi Champaran	85% of GPs within a 55 KM radius	282	174	108
Purnia	85% of GPs within a 55 KM radius	156	96	60
Samastipur	82% of GPs with no distance threshold	280	160	120
Saran	85% of GPs within a 55 KM radius	261	153	108
Total		2213	1245	968

Note: This table describes the GP sampling strategy for each district in our sample (col 2) and the counts for total GPs (col 3), control GPs (col 4) and treated GPs (col 5).

Table A4. **District-wise Wards per GP and Sampling Strategy**

District	**Ward Sampling**	**Total Wards**	**Control per GP**	**Treated per GP**	**Spillover per GP**
Banka	4 T/C wards per GP	678	4	4	2
Darbhanga	2 T/C wards per GP	649	2	2	2
Gaya	4 T/C wards per GP	1,125	4	4	2
Jehanabad	4 T/C wards per GP	374	4	4	2
Madhubani	2 T/C wards per GP	742	2	2	2
Muzaffarpur	2 T/C wards per GP	832	2	2	2
Purbi Champaran	4 T/C wards per GP	1,347	4	4	2
Purnia	2 T/C wards per GP	434	2	2	2
Samastipur	2 T/C wards per GP	800	2	2	2
Saran	2 T/C wards per GP	738	2	2	2
TOTAL		7719	3460	2424	1835

Note: This table describes the (i) sampling frame (Column 2) for all 10 districts in the sample and the number of wards across treatment, control and spillover GPs in our sample (Columns 3 to 6).

Table A5. **Balance across Treatment and Control GPs.**

Variable	(1) Control	(2) Treatment	(3) (1) vs (2)
Proportion of SCs (Census 2011)	0.17	0.17	-0.00
	(0.09)	(0.09)	(0.00)
Distance to District Headquarters (Census 2011)	30.27	30.52	0.44
	(13.57)	(13.68)	(0.58)
Total GP Area (Census 2011)	1,053.30	1,042.43	-5.61
	(645.29)	(643.75)	(25.64)
Total Population of GP (Census 2011)	12,455.46	12,426.56	25.66
	(5,232.07)	(5,165.76)	(221.38)
Number of Villages in GP (Census 2011)	5.03	5.10	0.02
	(4.23)	(4.15)	(0.15)
Percentages of SCs in Main SC Village (Census 2011)	0.60	0.59	-0.01
	(0.25)	(0.24)	(0.01)
SC Reserved	0.17	0.17	0.01
	(0.37)	(0.38)	(0.02)
ST Reserved	0.00	0.01	0.00
	(0.06)	(0.08)	(0.00)
EBC Reserved	0.17	0.18	0.01
	(0.37)	(0.38)	(0.02)
Gender Reserved	0.44	0.46	0.02
	(0.50)	(0.50)	(0.02)
Total Educational Facilities (Census 2001)	3.47	3.46	-0.03
	(2.04)	(1.97)	(0.08)
Primary Health Sub Centres (Census 2001)	0.44	0.40	-0.04
	(0.70)	(0.66)	(0.03)
Post Office (Census 2001)	1.07	1.08	0.01
	(0.81)	(0.81)	(0.03)
Bank Facilities (Census 2001)	0.34	0.35	0.02
	(0.63)	(0.65)	(0.03)
Power Supply (Census 2001)	1.80	1.76	-0.04
	(1.86)	(1.94)	(0.08)
Paved Road (Census 2001)	1.76	1.73	-0.04
	(1.63)	(1.62)	(0.07)
Mud Road (Census 2001)	4.10	4.14	0.03
	(3.10)	(3.10)	(0.12)
Child Welfare Centre (Census 2001)	0.05	0.04	-0.02
	(0.55)	(0.29)	(0.02)
Bus facilities (Census 2001)	0.51	0.54	0.03
	(0.91)	(0.95)	(0.04)
Mean Village Income (Census 2001)	415,342.97	366,579.09	-42,466.25
	(4,826,905.50)	(3,172,319.50)	(168,499.31)
Mean Village Expenditure (Census 2001)	928,866.12	255,508.78	-629,090.56
	(21,157,700.00)	(2,111,171.25)	(552,296.69)
Observations	1,301	912	2,213

Notes: This table displays balance for baseline characteristics between treatment (column 2) and control (column 1) GPs from the experiment. The first five rows of the table show estimates for GP level outcomes taken from the 2011 cenus. Rows 6 to 9 show outcomes on proportion of reserved seats for different demographics within a GP. Rows 10 to 16 show proportions for availability of different facilities within a GP. The last two rows show mean values for village income and expenditure in a GP. Column (3) provides difference in means after adjusting for district level fixed effects for each outcome. Figures in parenthesis denote robust standard errors. P-values are signified using: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A6. **Balance across Treatment, Control and Spillover Wards (1)**

Variable	(1) Control	(2) Treatment	(3) Spillover	(4) T vs C	(5) S vs C
Ward Population	811.84	811.35	810.37	4.95	5.87
	(179.01)	(207.82)	(174.30)	(8.26)	(6.37)
Ward SC Population	181.73	190.07	177.60	11.45	9.25
	(186.31)	(237.12)	(209.93)	(7.97)	(6.99)
Votes Obtained	153.88	151.85	152.71	-1.34	0.65
	(59.25)	(58.74)	(57.57)	(2.21)	(1.90)
Tot. Candidates	4.72	4.72	4.63	-0.01	-0.01
	(1.91)	(1.84)	(1.89)	(0.07)	(0.06)
Age	38.96	38.40	39.28	-0.16	0.12
	(11.35)	(11.37)	(11.85)	(0.39)	(0.36)
SC	0.33	0.33	0.32	0.02	-0.00
	(0.47)	(0.47)	(0.47)	(0.02)	(0.02)
Hindu	0.88	0.89	0.86	0.01	-0.01
	(0.33)	(0.31)	(0.34)	(0.01)	(0.01)
Muslim	0.12	0.11	0.13	-0.01	0.01
	(0.32)	(0.31)	(0.34)	(0.01)	(0.01)
Years of Education	10.22	10.29	10.19	-0.03	-0.04
	(3.96)	(3.84)	(4.02)	(0.14)	(0.13)
Campaigned:	0.83	0.82	0.82	-0.00	0.00
Drains and lanes	(0.38)	(0.38)	(0.39)	(0.01)	(0.01)
Campaigned: Tap	0.55	0.52	0.52	-0.01	-0.03*
water	(0.50)	(0.50)	(0.50)	(0.02)	(0.02)
Campaigned:	0.18	0.20	0.20	0.00	0.01
Pension	(0.39)	(0.40)	(0.40)	(0.01)	(0.01)
Campaigned:	0.27	0.28	0.29	-0.03*	0.00
Housing	(0.44)	(0.45)	(0.45)	(0.02)	(0.01)
Prev. Experience	0.32	0.31	0.32	-0.00	-0.00
	(0.46)	(0.46)	(0.47)	(0.02)	(0.01)
Prev. Experience	0.10	0.10	0.09	0.00	-0.01
(Family)	(0.30)	(0.30)	(0.28)	(0.01)	(0.01)
Income Source:	0.33	0.37	0.33	0.02	0.01
Agriculture	(0.47)	(0.48)	(0.47)	(0.02)	(0.01)
Received training	0.92	0.93	0.92	0.01	-0.01
	(0.27)	(0.26)	(0.28)	(0.01)	(0.01)
Observations	3,460	2,424	1,835	5,884	5,295

Notes: This table displays the balance across Treatment, Control and Spillover samples across administrative and baseline survey data. The first nine rows display the mean values and balance for ward level demographic variables. The variables with the prefix *Campaigned* indicate variables that are based on responses to questions asking what issues WMs campaigned on. "Prev. Experience" indicates if the WM/their family has prior experience being a WM. All regressions have district FE. Errors are clustered at the GP level. P values: * 0.1 ** 0.05 *** 0.01.

Table A7. **Balance across Treatment, Control and Spillover Wards (2)**

Variable	(1) Control	(2) Treatment	(3) Spillover	(4) T vs C	(5) S vs C
Knowledge:	0.39	0.38	0.39	-0.01	0.01
Housing	(0.19)	(0.18)	(0.19)	(0.01)	(0.01)
Knowledge:	0.20	0.20	0.21	-0.01	0.00
Drains/Lanes	(0.22)	(0.21)	(0.22)	(0.01)	(0.01)
Knowledge: Tap	0.11	0.11	0.09	0.00	-0.01
Water	(0.17)	(0.15)	(0.16)	(0.01)	(0.01)
Knowledge: PDS	0.73	0.70	0.74	0.02	-0.00
	(0.34)	(0.34)	(0.34)	(0.02)	(0.02)
Knowledge:	0.50	0.52	0.52	0.03	0.01
Pension	(0.25)	(0.27)	(0.25)	(0.02)	(0.01)
Knowledge:	0.38	0.39	0.38	-0.02*	-0.00
Solar Lights	(0.27)	(0.28)	(0.27)	(0.01)	(0.01)
Knowledge Index	0.04	-0.10	0.06	-0.04	0.02
Z Score	(0.99)	(1.00)	(1.01)	(0.03)	(0.03)
Knowledge Index	0.00	-0.03	0.01	0.01	0.01
(PCA)	(1.50)	(1.55)	(1.49)	(0.12)	(0.08)
Networks: Block	0.19	0.23	0.21	0.02	0.01
	(0.44)	(0.49)	(0.47)	(0.02)	(0.01)
Networks: Dist.	0.02	0.02	0.02	0.01	0.00
	(0.15)	(0.15)	(0.15)	(0.01)	(0.00)
Networks: State	0.01	0.00	0.01	0.00	0.00
	(0.09)	(0.07)	(0.08)	(0.00)	(0.00)
Networks: All	0.20	0.24	0.22	0.03	0.01
	(0.49)	(0.53)	(0.52)	(0.02)	(0.02)
Interested in Peer	0.96	0.95	0.94	-0.01	-0.01
Learning	(0.21)	(0.23)	(0.23)	(0.01)	(0.01)
Pol. Party Involvement	0.20	0.21	0.22	-0.01	0.01
	(0.40)	(0.40)	(0.41)	(0.01)	(0.01)
WhatsApp	0.81	0.81	0.81	0.00	0.00
	(0.40)	(0.39)	(0.40)	(0.01)	(0.01)
Observations	3,460	2,424	1,835	5,884	5,295

Notes: This table displays the balance across Treatment, Control and Spillover samples across measures of knowledge and networks from our baseline survey data. The Knowledge Index is a standardized index of WM's knowledge on 6 key schemes, i.e. provision of tap water (*Nal Jal*), subsidy on house construction (*Pradhan Mantri Awas Yojana*, PMAY), drains and lanes construction (*Nali gali*), solar street lights, subsidised food rations (Public Distribution System, PDS) and pensions. We first identify the steps involved in carrying out these schemes. We then calculate the share of the total steps a ward member is able to recount in our survey. We then calculate the PCA score among these variables. Our main network question involves asking ward members to name ward members in their GP/block/district/state who they have work-related discussions. Ward members can name up to 3 such peers. *Networks:* All is the sum of all individuals respondents can name across levels. The variable Whatsapp is a dummy that flags if the WM has access to the application. All regressions have district FE. Errors are clustered at the GP level. P values: * 0.1 ** 0.05 *** 0.01.

Table A8. **Impact on Learning Outcomes through Heterogeneity by SC only Treatment Groups**

	(1) **Formal Knowledge Index (std)**	(2) **Tacit Knowledge Index (std)**	(3) **Procedural Index (std)**	(4) **Best Practices Index (std)**	(5) **Combined Index (std)**
Treated Ward	-0.0871	0.0367	-0.0040	-0.0902	-0.0522
	(0.0715)	(0.0743)	(0.0713)	(0.0715)	(0.0720)
Treated Ward × SC only group	0.1878*	0.1353	0.1694*	0.1550	0.2335**
	(0.1009)	(0.1005)	(0.1007)	(0.1016)	(0.0993)
Observations	1471	1471	1471	1471	1471
Control Mean	0	0	0	0	0
Total Effect p-value	0.168	0.015	0.025	0.384	0.012

Notes: The above table reports the treated ward and treated ward × SC only group interaction effects on learning outcomes for the SC only surveyed sample. The regression also includes the uninteracted SC only group main effect, which is estimated but omitted from this table. The row *Total Effect p-value* reports the p-value from a linear combination test (Treated Ward + Treated Ward × SC only group), i.e. the significance of the total treatment effect for SC ward members in SC-only groups. All indices are standardized using the control mean. Controls determined using double select lasso, including baseline knowledge, confidence, education, age and dummies for access to local bureaucrats and connectivity through phone. Specification accounts for district fixed effects. Standard errors are reported in parentheses and are clustered at the UGP level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A9. **Effect of being in SC-Only Groups on Meeting Outcomes for SC Ward Members**

	(1) **Total Solutions Provided for each Scheme j**	(2) **Total Issues Raised for each Scheme j**
	Data at WM × Scheme level	
SC Only Group	0.007	-0.034
	(0.018)	(0.034)
Observations	7272	7272
Mixed Group Mean	0.23	0.71
Controls	No	No
Scheme Fixed Effects	Yes	Yes

Notes: The above table reports the effect of being a SC WM in SC-only group on scheme-level outcomes for SC Ward Members. The unit of observation is at ward × scheme level. The schemes include Naljal, Naligali, NREGA, LSBA, Shauchalay, Awas, Ration, Pension and Solar Lights. The reference category is an SC ward member in a mixed group. All regressions include scheme fixed effects. Standard errors are clustered at the group level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A10. **Exposure to SC vs Non-SC Peer Solutions and Learning Outcomes for each Scheme**

	(1) **Combined Learning Index (std)**	(2) **Combined Learning Index (std)**
	Data at WM × Scheme level	
Number of Solutions from SC Peers	-0.0063	
	(0.0311)	
Number of Solutions from Non-SC Peers		0.0266
		(0.0168)
Observations	2163	2163
WM Controls	Yes	Yes
Ward-Level Controls	Yes	Yes
District FE	Yes	Yes
Scheme FE	Yes	Yes

Notes: Sample restricted to SC ward members in mixed treated groups, at the ward × scheme level. Column (1) regresses the combined learning index on the number of solutions provided by SC peers in the same group (excluding the ward member's own contribution); Column (2) regresses it on the number of solutions provided by non-SC peers. Both columns include ward member and ward-level controls, and district and scheme fixed effects. Standard errors are clustered at the UGP level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A11. **Effect of SC-Only Groups & Issues Campaigned at Baseline on Solutions Provided (for SC Ward Members)**

	(1) **Total Solutions Provided**
SC-Only Group	-0.006
	(0.025)
Campaigned on scheme j	-0.030
	(0.024)
SC-Only Group × Campaigned on scheme j	0.069**
	(0.032)
Observations	6144
Control Mean	0.23
Controls	No
District Fixed Effects	Yes
Scheme Fixed Effects	Yes
Total Effect p-value	0.080

Notes: This table reports the effect of being an SC WM in an SC-only group on total solutions provided and its interaction with issues campaigned at baseline for each scheme. The unit of observation is ward x scheme. The reference category is mixed groups. The column includes the interaction between belonging to an SC-only group and whether the scheme was campaigned on by the WM. The row *Total Effect p-value* reports the p-value from a linear combination test (SC-Only Group + SC-Only Group × Campaigned on scheme j), i.e. the significance of the total effect of being in an SC-only group for schemes campaigned on. All regressions include district and scheme fixed effects. Standard errors are clustered at the GP level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A12. **Effect of being in SC-Only Groups on Discussion Time (SC sample)**

	(1) **Mean Time Spent in each Meeting for scheme j**
	For SC Ward Members:
SC Only Group	0.590**
	(0.285)
Observations	5285
Control Mean	14.50
Controls	No
Meeting FE	Yes
Scheme FE	Yes

Notes: This table reports the effect of being in an SC-only group on mean discussion time at the group × meeting × scheme level. Sample restricted to SC ward members in treated wards. The reference category is SC WM in mixed groups. All regressions include meeting and scheme fixed effects. Standard errors clustered at the group level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A13. **Are SC Ward Members Worse Off on Professional Networks at Baseline?**

	(1) **Block Bureaucrat Network (std)**	(2) **Political Party Network**
SC Ward Member	-0.0303	-0.0867***
	(0.0250)	(0.0246)
Observations	7277	7277
Non-SC Mean	0.0375	0.0383

Notes: The above table reports the baseline association between individual SC status and professional networks. Column (1) is standardised (mean 0, SD 1 among control ward members); Column (2) is the standardized value for ward members involved in a political party using the control mean. District fixed effects are included in this specification. Standard errors are clustered at the UGP level and are reported in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A14. **Baseline Characteristics of Treated SC Ward Members, SC-only vs Mixed Groups**

	(1) **Education**	(2) **Baseline Knowledge (std)**	(3) **Baseline Confidence (std)**
SC-only Group	-0.5526**	-0.0722	-0.0497
	(0.2297)	(0.0516)	(0.0476)
Observations	2312	2315	2315
Mixed Group Mean	10.388	-0.086	-0.096
District Fixed Effects	Yes	Yes	Yes

Notes: The above table ompares ward members placed in SC-only groups to those placed in mixed groups on baseline education, baseline knowledge, and baseline confidence, without additional controls beyond district fixed effects. The control mean is measured among SC ward members in mixed groups. Standard errors are clustered at the UGP level and are reported in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

E Appendix: Construction of Key Variables

E.1 Knowledge

We measure ward members (WMs) knowledge in five ways:

1. **Formal Knowledge Index**: Peer networks could enhance WMs' understanding of scheme implementation across the spectrum of schemes that affect their constituents. This includes both formal steps and informal (tacit) practices commonly used in the field.[18] We measure the former using a Formal Knowledge Index, which comprises responses to questions about the formal steps required to implement seven major schemes (randomised): solid and liquid waste management (*Lohia Swachhta Bihar Abhiyan*, LSBA), drains and lanes constructions (*Nali Gali*), subsidies for house constructions (*Prdhan Mantri Awas Yojna*, PMAY), solar lights, subsidised food rations (Public Distribution System, PDS), pensions (Old age pensions), and subsidy for toilet constructions (*Swacch Bharat Mission*, SBM). For each scheme, a checklist of steps was compiled using official manuals and interviews with bureaucrats and WMs in both treatment and control groups. The formal steps have the suffix "(F)" in Table F1 .[19]

2. **Tacit Knowledge Index**: Analogous to the Formal Knowledge Index, we construct a Tacit Knowledge Index using the same set of questions (few schemes had only formal steps and no tacit steps, Table F1) but based on responses pertaining to tacit knowledge and informal practices. These informal steps are as important as formal ones for understanding the complete flow of activities, yet they are not documented in any official guidelines. Examples include knowing to who will handover this list of potential works under certain scheme, or to whom this list must be submitted at the block level. Such knowledge is essential for a Ward Member to understand the expected timelines for specific tasks and the procedural workflow involved. The tacit knowledge steps in the table are denoted by the suffix "(T)".

   We construct the Formal Knowledge Index and Tacit Knowledge Index as follows: For the Formal Knowledge Index, for each scheme, we calculate the proportion of formal steps correctly identified by a WM, defined as the number of formal steps reported by the WM divided by the maximum number of formal steps reported by

[18] Treated WMs could acquire this knowledge through peer group discussions that expose them to best practices and practical know-how from more experienced members.

[19] For instance, drains and lanes construction requires a ward meeting to identify the site, Gram Sabha approval, an engineer's cost estimate, and milestone-linked disbursements.

any WM for that scheme. We then average these proportions across all schemes to obtain a single score for each WM. Finally, we standardize this score — subtracting the mean and dividing by the standard deviation across all WMs in the control group — to construct the final index. We construct the Tacit Knowledge Index using the same procedure. See Table F1 for the questions included in the construction of the Formal and Tacit Knowledge Indices.

3. **Procedural Knowledge Index**: While the first two indices use a relative scoring method and primarily captures WMs' breadth of knowledge with respect to how a range of schemes get implemented, we construct another measure — the Procedural Knowledge Index — to capture their knowledge about what is supposed to be done, based strictly on rules. Peer networks could improve WMs' understanding of formal (de jure) rules that govern scheme implementation — such as eligibility criteria, official documentation requirements, and reporting protocols — specifically as they relate to the schemes where WMs have official responsibilities.

   The Procedural Knowledge Index comprises four objectively scored components: two on Solar street Lights (decision on the number of lights and their placement), one on solid and liquid waste management (*Lohiya Swachh Bharat Abhiyan*, LSBA) (who should appoint sanitation workers), and work provided under employment guarantee (National Rural Employment Guarantee Act, NREGA) (who should take attendance of workers at the worksite). WMs were asked factual questions with objectively correct answers about scheme rules. Each component is a binary variable coded 1 if the respondent's answer is correct and 0 otherwise. These binary components are first standardized (converted into z-scores), and we take the average of these standardized scores for each WM. We then standardize this score with respect to the control mean average and standard deviations to arrive at the final index. See Table F3 for the questions included in the construction of this index.

4. **Best Practices Index**: We measure another facet of knowledge that relates to judgment and strategic problem-solving in the face of real-world implementation issues using the Best Practices Index. Peer learning could help WMs identify practical solutions to common implementation challenges. Through peer group discussions, WMs may exchange strategies, troubleshoot collectively, and become more effective at navigating block-level bureaucracies or resolving delivery failures.

   This index draws on scenario-based questions. The WMs' responses were evaluated based on whether they proposed specific, effective actions. Generic responses (e.g.,

"talk to the GP head") were not included in the index. See the italicized options that were included in the index presented in Table F4.[20]

We construct the index in the following way: for each of six schemes (subsidy on Toilet construction (*Swachh Bharat Abhiyan*, SBM), subsidised food rations (Public Distribution System, PDS), Solar street lights, solid and liquid waste management (*Lohiya Swachh Bharat Abhiyan*, LSBA), Provision of tap water (*Nal Jal*) and NREGA), we calculate the number of effective recommendations mentioned by the WM. We then standardize this count for each scheme, followed by taking a mean of the Z-scores of individual components. We then standardize this score with respect to the control mean average and standard deviations to arrive at the final index.

5. **Combined Index**: Finally, we include an index of the first four knowledge indices.

Together, these four indices – and the combined index – provide a multidimensional view of WM knowledge by capturing not just factual understanding of rules and procedures, but also practical familiarity with implementation processes and the capacity to devise effective solutions to real-world governance challenges.

E.2 Networks

Peer learning groups could strengthen WMs' professional networks by exposing them to the networks of other group members. Through repeated group meetings, a WM may learn about and gain access to contacts that peers have cultivated — whether ward members from other blocks, higher-tiered bureaucrats, or political actors. For instance, a more experienced WM might refer a peer to a responsive Block Development Officer (BDO) or connect them with a political leader who can help resolve a local issue. For newly elected representatives, such connections are otherwise difficult to establish independently. We measure these networks along two dimensions.

1. **Block-Level Bureaucrat Network**: Navigating the administrative machinery requires WMs to interact with key block-level officials, particularly the BDO and the Block *Panchayati Raj* Officer (BPRO). These officials oversee scheme approvals, fund disbursements, and administrative clearances that are critical to project implementation

[20] For instance, for the first scenario in which a beneficiary in a ward had not received the cash transfer under the toilet construction scheme, we identified effective solutions — in this case, these were filing a collective petition, speaking to a specific bureaucrat named the Swachhta Grihi, or speaking to the assigned data operator for the scheme.

at the ward level.[21] We capture the strength of these relationships using variables measuring the frequency of interactions with the BDO and BPRO. We construct a standardized index from these variables following the same procedure as above.

2. **Political Party Network**: Political connections can serve as an important resource for WMs in securing support for ward-level projects, mobilizing resources, and navigating political processes. We measure this using a variable capturing a WM's links to political parties - specifically, whether the WM or any of their family members were involved with a political party in any capacity. We construct a standardized score from this variable using the same procedure.

Finally, we construct a **Combined Network Index** by averaging the three standardized indices above and add one more variable using the control group mean and standard deviation. This composite measure captures the overall breadth of a WM's professional network across peers, bureaucrats, and political actors. See Table F6 for these network questions.

E.3 GPDP Analysis

We use Gram Panchayat development Plans (GPDP) administrative data on planned projects and their estimated costs. Each project record includes a project description, as well as fields identifying the broader theme and sector. We use these fields, together with iterative cleaning and keyword matching of project descriptions, to classify projects to scheme categories. This process yields 18 identified scheme categories: subsidy on house construction (*Pradhan Mantri Awas Yojana*, PMAY), Health insurance (*Ayushman* Card), Education, Water conservation (*Jal Jeevan Hariyali*, JJH), Healthcare, Marriage assistance (*Mukhyamantri Kanya Vivah Yojana*, MKVY), Public grievance redressal (*Lok shikayat*), Solid and liquid waste management (*Lohiya Swachh Bharat Abhiyan*, LSBA), Work provided under employment guarantee (National Rural Employment Guarantee Act, NREGA), Drains and lanes construction (*Nali-Gali*), Provision of tap water (*Nal-Jal*), Pension, Subsidised food rations (Public Distribution System, PDS), Public service delivery (Right to Public Services, RTPS), Educational financial assistance (Scholarship), Solar Street Lights, subsidy on Toilet construction (*Swachh Bharat Abhiyan*, SBM), and Entrepreneurship support (*Mukhyamantri Udyami Yojana*, MUY).

[21] For instance, construction works under house construction (*Pradhan Mantri Awas Yojana*, PMAY) or drains and lanes construction *Nali Gali* require cost estimates and approvals routed through the block office, making a WM's relationship with the BDO and BPRO consequential for timely execution.

Projects that cannot be assigned reliably to a specific scheme are retained in a separate "Uncategorized" category rather than being dropped. These are projects for which the available description, theme, and sector information do not permit a credible scheme assignment. We then aggregate project-level information to construct GP–scheme measures of the number of planned projects and total planned expenditure. The relevant table notes indicate whether specifications include the Uncategorized category.

E.4 Ward Member Campaign Priorities

At baseline, WMs were asked what issues they had campaigned on to win the election. WMs selected from a list of schemes and could select more than one issue. We construct a separate binary indicator for each scheme, equal to one if the WM reported campaigning on that issue.

For the analysis, we retain eight campaign categories that are also used elsewhere in the study: subsidy on house construction (*Pradhan Mantri Awas Yojana*, PMAY), NREGA, drains and lanes construction (*Nali Gali*), provision of tap water (*Nal Jal*), Pension, subsidised food rations (Public Distribution System, PDS), Solar street Lights, and subsidy on toilet construction (*Swachh Bharat Abhiyan*, SBM). The remaining baseline campaign categories are not used because they do not appear in the endline survey, citizen survey, or peer-group meeting data. For GP–scheme analyses, we calculate the share of sampled WMs in each GP who reported campaigning on a given scheme.

E.5 Citizen Preferences

In the endline citizen survey, respondents were asked: *"What are the two schemes or issues where the Ward Member (WM) or GP Head should increase spending?"* Respondents selected from a list of 18 schemes and could name at most two. The schemes were:subsidy on house construction (*Pradhan Mantri Awas Yojana*, PMAY), Health insurance (*Ayushman* Card), Education, Water conservation (*Jal Jeevan Hariyali*, JJH), Healthcare, Marriage assistance (*Mukhyamantri Kanya Vivah Yojana*, MKVY), Public grievance redressal (*Lok shikayat*), Solid and liquid waste management (*Lohiya Swachh Bharat Abhiyan*, LSBA), Work provided under employment guarantee (National Rural Employment Guarantee Act, NREGA), Drains and lanes construction (*Nali-Gali*), Provision of tap water (*Nal-Jal*), Pension, Subsidised food rations (Public Distribution System, PDS), Public service delivery (Right to Public Services, RTPS), Educational financial assistance (Scholarship), Solar Street Lights, subsidy on Toilet construction (*Swachh Bharat Abhiyan*, SBM), and Entrepreneurship support (*Mukhyamantri Udyami Yojana*, MUY). We convert these responses into 18 binary in-

dicators, one for each scheme, equal to one if the respondent selected that scheme. For analyses at the GP–scheme level, we calculate the share of sampled citizens in each GP who selected a given scheme.

Table F1. Formal (F) and Tacit (T) Knowledge Index Questions (Part 1)

Question	**Steps**
If you want to get work done in your ward under the lanes and drain construction scheme *Nali gali*, what steps need to be taken?	1. A ward meeting will be held to select the site for construction. (F) 2. The plan will be passed in the Gram Sabha. (F) 3. The Mukhiya will submit this list for the year at the block-level Panchayat office. (T) 4. After the scheme is uploaded to the portal, priority will be given to Dalit and Maha Dalit areas. (T) 5. The Junior Engineer (JE) will prepare the estimate. (T) 6. The work will be assigned to a contractor or agency selected by the block. (F) 7. The JE will prepare the Measurement Book (MB) after 25% of the work is completed. (F) 8. Geo-tagging will be done. (F) 9. An initial payment will be made to the contractor through the Ward Implementation and Management Committee (WIMC). (F) 10. After inspection, the remaining amount will be released. (F) 99. Don't know / don't remember. 100. Others
Under the solar light scheme in your ward, what needs to be done if you want to install a solar light?	1. Each ward will receive 10 solar lights. (F) 2. The scheme is implemented in phases—first four wards, then the next set. (F) 3. The Ward Member (WM) will prepare a list and submit it to the Mukhiya. (F) 4. A Ward Sabha will be held to finalize the installation sites. (F) 5. The list is submitted to the Panchayat. (T) 6. The Mukhiya and Panchayat Secretary will approve the installations upon state allotment. (T) 7. The Bihar Renewable Energy Development Agency (BREDA) company will install the lights under WM supervision. (T) 99. Don't know / don't remember. 100. Others
If you need to implement LSBA in your ward, what steps would you need to take?	1. The Gram Panchayat will be selected by the block office for LSBA implementation. (T) 2. The Mukhiya will call a meeting with WM and identify a site for the Waste Processing Unit (WPU). (T) 3. Construction of the WPU will begin. (F) 4. WMs will prepare a list of interested households. (F) 5. Two dustbins will be distributed to each household. (F) 6. Ward Sabhas will be conducted to select Swachhta Karmis. (F) 7. The Mukhiya will appoint a Swachhta Supervisor. (F) 8. Garbage vehicles/cycles will be distributed to each ward. (F) 9. The Ward Sabha will fix garbage collection timing and set a monthly fee. (T) 99. Don't know / don't remember. 100. Others
If someone in your ward wants to benefit from the Pradhan Mantri Awas Scheme, what steps need to be taken?	1. The WM will check if the online portal is open. (T) 2. A list of eligible households with ID, caste, and address proof will be prepared. (F) 3. The list will be updated based on SC and SECC data.(F) 4. The Awas Sahayak and WM will verify the documents. (F) 5. The list will be submitted through the Mukhiya to the block office. (T) 6. Upon approval, the beneficiary's name will be added to the portal and the first installment will be credited. (F) 7. Construction will begin, and the second installment will be released after verification. (F) 99. Don't know / don't remember. 100. Others
If someone in your ward wants to benefit from the Toilet Scheme, what steps need to be taken?	1. The WM will prepare a list of eligible households with ID, caste, and address proof. (F) 2. The Swachhta Grihi and WM will verify eligibility and check for existing toilets. (F) 3. The list will be submitted to the block office through the Mukhiya. (F) 4. Once approved, the beneficiary is instructed to construct the toilet. (F) 5. Geo-tagging is done by the Swachhta Grihi with the help of the WM. (F) 6. Upon approval of geo-tagging, 12,000 will be transferred to the beneficiary's account.(F) 99. Don't know / don't remember. 100. Others

Table F2. Formal (F) and Tacit (T) Knowledge Index Questions (Part 2)

Question	Steps
If someone in your ward needs to get a ration card, what steps need to be taken?	1. Carry original and photocopies of Aadhar card, caste certificate, and bonafide certificate. (F) 2. Bring original and photocopies of the bank passbook. (F) 3. Have a family group photo (at least one). (F) 4. Apply at the Right to Pubic Services (RTPS) counter in the block office, Common Service Centre (CSC), or online on the EPDS website. (F) 5. Submit documents at the Subdivision Office (SDO) for approval. (F) 99. Don't know / don't remember. 100. Others
If someone in your ward wants to benefit from the Vriddha Pension Scheme, what steps need to be taken?	1. The applicant should be 60 years or older. (F) 2. Carry original and photocopies of the Aadhar card. (F) 3. Carry original and photocopies of the Voter ID. (F) 4. Carry original and photocopies of the bank passbook. (F) 5. Ensure the name matches across all documents. (F) 6. The date of birth should match in Aadhar and Voter ID. (F) 7. Apply at the RTPS counter in the block office, CSC, or online through the state portal. (F) 8. Complete e-KYC. (F) 99. Don't know / don't remember. 100. Others

Table F3. Procedural Knowledge Index Questions

Question	Response Options
According to government rules, who is responsible for selecting the location of the solar lights within the ward under the Solar Light Scheme?	1. Ward Member/Ward Sabha/WIMC 2. Mukhiya 3. Panchayat Secretary 4. Ward Secretary 5. Block level officials 6. BREDA Company 7. Contractor 99. Don't know 100. Others
According to the government rules, who should appoint sanitation workers in the ward under Lohia Swachh Bihar Abhiyan Scheme?	1. Ward Member/Ward Sabha/WIMC 2. Mukhiya 3. Panchayat Secretary 4. Ward Secretary 5. Block level officials 99. Don't know 100. Others
According to government rules, how many solar lights should be installed in one ward under the solar light scheme?	(In rules - 10 per ward)
As per government rules, under MGNREGA scheme, who should take attendance of MGNREGA workers?	0. No work is getting done here 1. Panchayat Rozgar Sevak (PRS) 2. MGNREGA Mate 3. Jeevika Didi 4. Any female worker among those who is not a mate 5. Any worker who is not a mate 6. Panchayat Secretary 7. Mukhiya 8. Ward Member 99. Don't know 98. Don't want to say 100. Other

Table F4. Best Practices Index Questions (Part 1)

Scenario	Suggested Approaches	
If ward members from another panchayat come to you with the issue that a beneficiary in their ward has not yet received money under the Toilet (Shauchalay) scheme, how would you advise them to resolve this issue? What methods or approaches would you suggest to the ward member to solve this problem?	0. Do nothing 1. Speak to other WM for information/ advice 2. Speak to Mukhiya 3. Speak to Block Development Office/Officer (BDO)/Block Panchayati Raj Officer (BPRO) 4. Speak to District Development Commissioner (DDC)/ District Panchayati Raj Officer (DPRO) 5. Speak to District Magistrate DM 6. Speak to Panchayat Secretary (PS) 7. Protest with WMs 8. Protest with citizens 9. File online/ offline Complaint through Lok Shikayat Nivaran	10. Right to Information (RTI) 11. *File a collective petition* 12. *Speak to Swachhta Grihi* 13. *Speak to Toilet data operator* 14. Speak to Block Coordinator (BC) 15. Speak to Vikas Mitra (VM)(Appointed from the marginalized and disadvantaged community by the state government at the panchayat level to facilitate any government schemes) 16. Speak to any other officer at the block not mentioned in the list 99. Don't know 100. Others
If ward members from another panchayat approach you because some people in their ward are not receiving their ration, what methods or approaches would you suggest to solve this problem?	0. Do nothing 1. Speak to other WM for information/ advice 2. Speak to Mukhiya 3. Speak to BDO/BPRO 4. Speak to DDC/DPRO 5. Speak to DM 6. Speak to PS 7. Protest with WMs 8. Protest with citizens 9. File online/ offline Complaint through Lok Shikayat Nivaran 10. RTI 11. File a collective petition	12. *Speak to Public Distribution System (PDS) Contractor* 13. *Speak to Marketing Officer (MO)* 14. *RTPS operator* 15. Speak to BC 16. Speak to VM 17. *Speak to any other officer at the block not mentioned in the list* 18. Speak to the SDO/other officer at Sub-Division Office 99. Don't know 100. Others
If a few solar lights in the wards of fellow members from another Panchayat have been out of order for a few days, and those ward members approach you with this issue, what methods or approaches would you suggest to solve this problem?	0. Do nothing 1. Speak to other WMs for information/ advice 2. Speak to Mukhiya 3. Speak to BDO/BPRO 4. Speak to DDC/DPRO 5. Speak to DM 6. Speak to PS 7. Protest with WMs 8. *Protest with citizens* 9. File online/ offline Complaint through Lok Shikayat Nivaran 10. *RTI* 11. *File a collective petition*	12. *Speak to a BREDA Company person* 13. Speak to a Contractor 14. Ask citizen to contribute through collective money 15. Speak to BC 16. Speak to VM 17. Speak to any other officer at the block not mentioned in the list 18. Speak to SDO/other officer at Sub-Division Office 99. Don't know 100. Others
If a fellow ward member from another panchayat approaches you because sanitation workers in their ward haven't received their salary for several months, how would you advise them to resolve this issue?	0. Do nothing 1. Speak to other WMs for information/ advice 2. Speak to Mukhiya 3. Speak to BDO/BPRO 4. Speak to Circle Officer (CO) 5. Speak to MO 6. Speak to DDC/DPRO 7. Speak to DM 8. Speak to PS 9. Protest with WMs 10. Protest with citizens 20. Protest with Sanitation Workers/Supervisor 11. File online/ offline Complaints - Lok Shikayat Nivaran	12. RTI 13. *File a collective petition* 14. *Speak to Sanitation Supervisor* 15. Use own Money/Collect money from citizens 16. Speak to BC 17. Speak to VM 18. Speak to any other officer at the block not mentioned in the list 19. Speak to SDO/other officer at Sub-Division Office 99. Don't know 100. Others

Table F5. Best Practices Index Questions (Part 2)

Scenario	**Suggested Approaches**	
If a motor supplying water under the Nal-Jal scheme in the area of ward members from other panchayats stops working, and they come to you with this issue, what steps or methods would you suggest to solve the problem?	0. Do nothing 1. Speak to other WMs for information/ advice 2. Speak to Mukhiya 3. Speak to BDO/BPRO 4. Speak to DDC/DPRO 5. Speak to DM 6. *Speak to PS* 7. *Speak to JE of Public Health Engineering Department (PHED)* 8. *Speak to PHED Contractor* 9. Speak to any officer in the PHED 21. Contact PHED toll free number 10. Protest with WMs 11. Protest with citizens	12. File online/ offline Complaint through Lok Shikayat Nivaran 13. RTI 14. File a collective petition 15. Use own Money/Collect money from citizens 20. Use Money from the WIMC fund 16. Speak to BC 17. Speak to VM 18. Speak to any other officer at the block not mentioned in the list 19. Speak to SDO/other officer at Sub-Division Office 99. Don't know 100. Others
If fellow ward members from another panchayat are facing difficulties in getting MGNREGA job cards made for people in their ward, and these ward members come to you with this problem, through which means/methods would you advise them to resolve this issue?	0. Do nothing 1. Speak to other WMs for information/ advice 2. Speak to Mukhiya 3. Speak to BDO/BPRO 4. Speak to DDC/DPRO 5. Speak to DM 6. Speak to PS 7. Protest with WMs 8. Protest with citizens 9. File online/ offline Complaint through Lok Shikayat Nivaran 10. RTI 11. *File a collective petition* 12. Speak to Panchayat Rozgaar Sevak (PRS)	13. *Speak to local groups/organisation (Sangathan)* 14. *Speak to MGNREGA data operato*r 15. *Speak to MGNREGA Block Program officer(BPO)* 16. Speak to District Program officer (DPO) 17. Speak to BC 18. Speak to VM 19. Speak to any other officer at the block not mentioned in the list 20. Speak to SDO/other officer at Sub-Division Office 99. Don't know 100. Others

Table F6. Network Index Questions

Question	Response Options
Panel A: Outside-GP WM Network	
Do you have work-related discussions with other ward members outside your GP?	1. Yes 0. No
Outside your GP, how many ward members do you talk to about work?	Integer
Tell us about the ward members outside your GP with whom you have work-related discussions. Start with the one you talk to the most.	For each WM mentioned: 1. District 2. Block 3. Gram Panchayat 4. Name of the Ward Member
Related to work, who do you generally talk to when you face any difficulty?	Other ward members from different GP
Panel B: Block-Level Bureaucrat Network	
Have you ever spoken to the BDO? If yes, when was the last time you spoke to the BDO (either on the phone or in a meeting)?	0. Never 1. From last week till today 2. More than 1 week, but less than 1 month 3. More than 1 month, but less than 3 months 4. More than 3 months, but less than 6 months 5. More than 6 months 98. Don't want to say 99. Don't know/don't remember 100. Others
Panel C: Political Party Network	
Are you or any members of your family involved with a political party? For example, you could be a member, or you could have campaigned for a party, etc.	1. Yes 0. No

Table F7. Campaign Issues Mentioned by Ward Members

Question	Response Options
What were the issues you campaigned on to win the election?	1. Nali-Gali, Sokhta 2. Nal Jal 3. Saat Nischay 4. Ration Card 5. Pension (Old-age Pension, Chief Minister Pension) 6. Shauchalay (Toilet) 7. Indira Awas 8. E-Shram Card / Job Card 9. Corruption 10. MGNREGA 11. Ujjwala 12. Solar Light 100. Others

Table F8. Ward Members' Priorities for Increased Spending

Question	Response Options
What are the two schemes or issues where the Ward Member/Mukhiya should increase spending?	1. Nal Jal 2. Nali Gali 3. MGNREGA 4. Pension (Old-age Pension, Chief Minister Pension) 5. Shauchalay (Toilet) 6. Ration Card 7. Pradhan Mantri Awas 8. Solar Light 9. Lohiya Swachh Bihar Abhiyan – Solid and Liquid Waste Management (LSBA-SLWM) 10. Jal Jeevan Hariyali Abhiyan 11. Scholarships 12. RTPS Certificates (Income, Caste, Birth/Death, Residence) 13. Education/School 14. Kanya Vivah Yojana Bihar 15. Bihar Lok Shikayat 16. Ayushman Card 17. Vishvakarma Yojana / Udyami Yojana / Kaushal Vikas Yojana 18. Any other agriculture-related scheme 19. Healthcare 98. Don't want to say 99. Don't know / Don't remember 100. Others