

Safe Spaces or Elite Networks? Experimental Evidence on What Empowers Disadvantaged Groups *

Apurva Bamezai[†] Siddharth George[‡] Siddharth Hari[§]
M.R. Sharan[¶] Munish Sharma^{||}

Saturday 8th August, 2026

Abstract

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

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

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[†]University of Notre Dame. abamezai@nd.edu

[‡]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

2 Background

2.1 Local Governance in Bihar

Rural governance in Bihar follows the Panchayati Raj system. The smallest administrative unit in the state is called the Gram Panchayat, a self-governing body comprising a group of villages. The citizens of each Gram Panchayat (GP), elect their representatives from each ward along with the head of the GP (popularly known as the Mukhiya) in every 5-year election cycle. Each elected representative from the different wards and the president together make up the village council governing the panchayat. As representatives of their respective wards and panchayats, the members are expected to deliver on the issues they campaigned on, adhere to citizens' preferences, organize and deliberate meetings to determine local priorities and address different issues brought forth by citizens.

The elected ward members and the GP head are also responsible for the implementation of most rural development schemes that are introduced and resourced by the national and state level governments. The public service delivery of most welfare goods are also executed by the elected body. The village council has access to a small staff of bureaucrats who assist in the implementation of different government programs on the ground.

2.1.1 Role of Ward Members

Ward members make up the lowest level of politicians in India, representing the smallest administrative sub-division in the government. Each ward member stands up for elections from their ward of residence (typically comprising of around 1,000 citizens) and is responsible for the delivery of public and welfare goods, redressal of public grievances and removal of implementation roadblocks that may arise in the ward.

They are formally required to take part in the delivery of several public goods, including schemes related to drains and lanes construction (*Nali Gali*), solid and liquid waste management (*Lohiya Swachh Bharat Abhiyan*, LSBA), provision of tap water (*Nal Jal*) and solar street lights.¹ Ward Members are also officially in charge of identifying beneficiaries

¹WM responsibilities for the tap water (*Nal Jal*) scheme have changed over time. Additional powers and responsibilities were given to WMs in 2016, while in May 2023, a cabinet order transferred some of the WM powers to the Public Health Engineering Department (PHED).

in their ward for welfare programs like pension, subsidised food, work provided under the Mahatma Gandhi National Rural Employment Guarantee Scheme (NREGA), subsidies for house construction (*Pradhan Mantri Awas Yojana*, PMAY) and subsidies for toilet construction (*Swachh Bharat Abhiyaan*, SBM).

Ward members also act as the first point of contact for any citizen grievance or scheme related issues. The ward members are required to preside over *Ward Sabha* meetings (meetings held with the citizens of the ward), where all citizens are free to put forth issues of discussion. Citizens can also reach out to ward members to lodge complaints about local public goods (e.g., quality of roads) and services (e.g., absenteeism of the local childcare worker). These complaints are often expressed through petitions that the ward member submits forward to local bureaucrats.

Since Ward members act both as the lowest local representative of their citizens and the executor of government schemes, their role often involves acting as the mediator between upper-level officials and politicians (such as the GP Head) who hold *de facto* power over public resource allocation and the constituents of their ward. This is especially true given that 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 is predominantly determined by caste. Caste in India is defined as the fixed social group that an individual is assigned to (via father's caste) at birth. A distinct feature of the system is its rigid hierarchy which allows higher castes to secure higher social and (by *de facto*) economic status while restricting upward mobility or inclusion for especially those who are excluded from the four *varnas*.²

Within the caste system, those caste groups that face or have historically faced extreme social exclusion and economic backwardness³ have been categorized as Scheduled Caste (SC) in the Constitution of India. The existence of the caste system continue to be the cause of several persisting inequalities within Indian society. The barriers dictate education and health indicators, labour market outcomes ([Deshpande \(2011\)](#), [Singh and Thorat](#)

²The laws that govern the caste system were codified in the text named *Manusmriti* or the "Laws of Manu", and define the four *varnas* as the Brahmins (priests), the Kshatriyas (warriors), the Vaishyas (traders) and Shudras (workers and farmers).

³Especially via untouchability - the practice of physical exclusion or segregation practiced by upper castes. This mostly includes those groups which are excluded from the traditional *varna* system

(2014)) and opportunities (Thorat and Newman (2007)), migration (Munshi and Rosenzweig (2016)) as well as marriage market outcomes (Desai and Vanneman (2012)).

2.2.1 SCs in Bihar

While there are variations in the way caste-hierarchies manifest in different states, no state in India has attained complete reversal or parity (Deshpande (2011)). Historically in rural Bihar, since SCs could not own land, conduct trade or receive education, they worked mostly as landless agricultural laborers (*bataidars*), leather craftsmen, sanitation workers, clothes washers or toddy-tappers. While the professional classification of SC groups has widened and transformed after the abolition of untouchability and the introduction of reservations in 1950, most SCs continue to work as rural agricultural workers or persist in informal, low-paying jobs.

In Bihar, with the introduction of reservations for local level political seats in 2006, SCs represented 17% of the GP heads across all panchayats. Before reservations, Sharan and Kumar (n.d.) find that SCs held fewer than 2% of the GP head seats in Bihar and owned 0.37 SD fewer assets than non-SCs. Additionally, SC leaders who win reserved seats earn less, have fewer years of schooling, and are younger than their non-SC leaders. The SC leaders are also 47 percentage points more likely to self-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 the ward members are assisted by a host of bureaucratic staff appointed through the department of Panchayati Raj and the department of rural development in Bihar. These bureaucrats aid the elected representatives at different levels during scheme implementation and also play a role in monitoring law and order, ensuring compliance and permitting activities in Bihar.

At the highest level, the Block Development Officer (BDO) and the Block Panchayati Raj Officer (BPRO) are key officials responsible for addressing administrative and logistical issues related to scheme implementation. The BDO is appointed by the Bihar Public Service Commission and holds all administrative powers related to the implementation of work provided under employment guarantee (National Rural Employment Guarantee

Act, NREGA), toilet construction under *Swachh Bharat Abhiyan* and housing under *Pradhan Mantri Awas Yojana* PMAY as well as 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 office).

At lower levels, the village council is provided with several staff members such as the Panchayat secretary, Employment secretary (*Rozgar* secretary), Sanitation secretary (*Swachhta Grihi*), Housing assistant (*Awas Sahayak*) and Junior Engineer who assist in the day-to-day implementation and provide technical expertise for particular schemes and the overall planning and budgeting at the panchayat level.

While the GP Head holds the signatory power to commission funds for implementation and has the authority to supervise over all panchayat level staff, any elected representative at the village council level can engage with the block level officials to expedite and govern the overall implementation process.

2.3.2 Party Affiliation

Elections to panchayat level positions in Bihar are not allowed to be contested using political party symbols. The Panchayati Raj Act and the State Election Commission do not provide for party nominations or party symbols in the ballot and candidates are required to file nominations independently. This is the norm in almost all states in India,

However, in practice, candidates are often endorsed by different political parties, have higher level politicians campaign for them and voters have a common understanding on each candidate's political leanings. In the survey conducted by [Dunning and Nilekani \(2013\)](#), 72% of the respondents report knowing the party of the GP head. In our survey, ward members reported yes to having affiliations to political parties at both baseline and endline and also reported the name of the party they are affiliated to ⁴.

⁴At baseline, approximately 20% of surveyed ward members reported to have party affiliations.

2.4 Gram Panchayat Development Plans (GPDP)

Gram Panchayat Development Plans refer to the plans created for the implementation of different schemes and projects undertaken by the panchayat for the overall development and growth of its presiding villages. This includes the different schemes introduced and funded by the central government such as Drains and Lanes construction *Nali Gali*, Subsidy on Housing Construction (*Pradhan Mantri Awas Yojana*, PMAY), Provision of Tap Water (*Nal Jal*), etc. along with any other public good or welfare projects that the citizens of the panchayat may be interested in.

During village council meeting (*Gram Sabha*), the GP head and the ward members gather with the citizens to deliberate on pertinent schemes and issues that are of importance to the citizens of the panchayat. The ward members often act as representatives for their citizens and place forward issues of importance particular to their respective wards and negotiate for the prioritization of projects of interest. Development plans are also drawn and determined at the Gram Panchayat meetings held exclusively for the elected body members. The deliberations in each of these meetings influence the creation of the annual budget drawn for each financial year. This includes the determination of the number of projects to be planned for each ward under each scheme as well as their corresponding estimated cost.

3 Research Design

3.1 Peer Effects Intervention

The study was undertaken as part of the overall peer effects intervention ([Bamezai et al. \(2026\)](#)) which aimed to understand the impact of peer networks in the improvement of the work done by locally elected politicians in rural Bihar. In the intervention, we sampled ward members across 10 districts of Bihar and assigned them randomly to treatment, control groups and a spillover sample. Ward members in treatment were put together in groups of 10-12 to participate in in-person and virtual meetings over approximately one year ⁵.

Given that most WMs have poor outside GP networks, the intervention targeted improvement in the interaction of work peers beyond the GP by sampling WMs for a group

⁵The six meetings took place between January 2023 and June 2024

from within each district. Moderators attended each meeting to record attendance, maintain conversation structure and general objective of discussing work-relevant issues. All moderators were strictly instructed to not participate in the meetings beyond the capacity defined ⁶.

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 ⁷.

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 ⁸, first sampling GPs and then wards. Within each district, GPs were randomly drawn

⁶See [Bamezai et al. \(2026\)](#) for details on the intervention

⁷Similar to treatment groups, the ward members in the control groups were randomized from within the same district

⁸The districts were selected based on population and region. 7 of the 10 districts 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.

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

The study of governance outcomes for SC WMs treated in different group types takes place within the larger experiment of assigning local politicians to peer group meetings. As a result, a large part of our data comes from the larger surveys and meeting notes recorded for the peer effects experiment conducted for [Bamezai et al. \(2026\)](#).

The first two datasets used are the baseline survey (2,533 SC WMs) and the endline survey (2,064 SC WMs) of WMs which we conducted, collecting 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.⁹ WM-level outcomes include measures of knowledge,

⁹Appendix E provides detailed descriptions of variable construction and reproduces the survey questions used to construct the principal knowledge, network, confidence, and conflict measures.

networks, and agency. Governance outcomes capture public spending priorities, program implementation, and citizens' preferences and perceptions of local governance. In addition, we use a rich set of baseline covariates, including WMs' caste, education, political experience, and campaign priorities, as well as ward-level and GP-level demographic characteristics.¹⁰ Below, we provide an overview of the different sets of outcome measures.

4.2 Ward Member 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 related to informal implementation practices. Third, we construct a measure of procedural knowledge using scheme-specific factual questions related to 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 that are 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 standardized 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 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 Index aggregates all four.

Knowledge Flow To measure the informational content of peer interactions, we collect detailed records of discussions during peer meetings.¹¹ In in-person meetings, ward mem-

¹⁰Ward populations are obtained from the Bihar State Election Commission, while GP-level demographic characteristics are drawn from Census 2011.

¹¹Each meeting included a trained note-taker responsible for recording the issues discussed, the participants contributing solutions, and the content of proposed solutions.

bers are asked about the WMs that contributed highly after the meeting. Moderators also independently note the overall usefulness of a discussion on each scheme in a meeting on a likert scale (from 1 to 5). Using these records, we construct measures for meeting quality. In particular, we construct meeting-scheme and ward level measures for meeting usefulness (recorded by moderators) and the number of times a ward member is mentioned as top contributor in a meeting (by other ward members in the group).

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 directly measure whether treated WMs know randomly selected members of their assigned peer groups (in the control arm, WMs are asked about members of fictitious groups), allowing us to verify whether the intervention led participants 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 the BPRO, who are responsible for rural development and GP-related administration, and (ii) connections with political parties. These measures allow us to assess whether the intervention expanded professional and political networks among SC WMs (for details see Section E.2)).

4.3 Governance Outcomes

4.3.1 Gram Panchayat Development Plan (GPDP) Data

We obtain GPDP data from the eGramSwaraj portal.¹² These plans detail proposed expenditures for the subsequent financial year for We use GPDP data for the 2024 – 25 financial year, which coincides with the period of our intervention. Using the project descriptions together with the corresponding theme and sector fields, we classify projects into scheme categories.¹³ These data are not available at the ward level, so examine the impact of our

¹²eGramSwaraj 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.

¹³The scheme categories are 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 Vioah 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*),

intervention on planned spending priorities at the GP level. For further details see Section E.4.

4.3.2 Citizen Survey

We survey 9,699 citizens¹⁴ from treatment and control areas. The survey captures citizens' preferences over public goods and government programs, assessments of public services in their ward, access to social welfare benefits, and perceptions of their WM.¹⁵ Further details on the construction of these measures can be found in E.6 and ??.

5 Empirical Analysis

We look at two broad classes of empirical specification. First, we estimate the direct effects of participation in peer groups for SC WMs on different ward level outcomes. Second, we look at the correlation of different group level outcomes to SC-only groups. Third, we track the movement of downstream governance outcomes within treated GPs based on the type of SC WMs belonging in the GP. We see variation in treatment at the scheme level by looking at the i) schemes campaigned on by SC ward members and ii) the preferences of SC citizens in the GP for a particular scheme.

5.1 Treatment Effect on SC-Only groups

We estimate the treatment effect of SC-only groups compared to Mixed groups by comparing SC WMs in control and treatment and interacting the treatment effect on SC WMs with SC WMs that belong to SC-only groups. We use the following specification:

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

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). Projects that could not be reliably classified into a specific scheme based on the available project description, theme, and sector fields were classified as "Uncategorized".

¹⁴The sample includes around two citizens per ward from treatment and control areas

¹⁵The survey was conducted over the phone using contact information collected in 2021, resulting in relatively low response rates. Since the phone numbers were not tagged to wards, respondents could not always be matched precisely to specific wards within a GP.

where Y_{wd} is the (standardised) outcome of interest for SC ward member w in district d ; TreatedSC-WM_{wd} is an indicator equal to 1 if SC ward member w was assigned to treatment; SC-Only_{wd} is an indicator equal to 1 if the SC ward'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 the SC ward members (treatment and control). Standard errors are clustered at the UGP level. β_1 captures the treatment effect, and β_2 — the coefficient of interest — captures the additional effect of being a treated SC WM in an SC-Only group.

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 ward members (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 Movement of Downstream outcomes within Treated Groups

In case of treated GPs with at least one SC WMs, we are interested to see how estimated costs for different schemes are prioritized depending on the composition of SC WMs (SC-Only or Mixed) that belong in that GP. We estimate the following specification for treated GPs with at least one SC WM:

$$\text{Cost}_{ij} = \beta_1 \text{SC-Only}_i + \beta_2 \text{Mixed}_i + \mathbf{X}'_i \gamma + \delta_d + \delta_j + \varepsilon_{ij} \quad (3)$$

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 count of SC ward members in 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. We interact SC-Only_i and Mixed_i with one of two forms depending on the specification: For issues campaigned on by SC WMs in a GP, it equals $\text{SC-Campaigned}_{ij}$, an indicator for whether scheme j was campaigned on by SC ward members in GP i ; For schemes preferred by SC citizens in a GP, it equals CitizenPref_{ij} , SC citizens' stated pref-

erence for scheme j in GP i . Standard errors are robust.

5.4 Randomization and Compliance

Take-up and Participation. Out of the 2,533 SC WMs surveyed, approximately 89% showed interest in participating in peer group meetings. Consequently, we find that 99% of the SC ward members assigned to treatment attended at least one peer group meeting (either in person or over online conference calls) and 95% attended multiple interactions across the six meetings. Similarly, approximately 99% and 98% of the SC WMs treated in mixed groups and SC-only groups attended at least one meeting respectively.

Summary Statistics and Balance. We present summary statistics and assess the validity of our randomization. Tables [A1](#) and [A2](#) present the results of balance tests for different GP level and ward level outcomes for treated SC ward members who are assigned to SC-Only and Mixed groups respectively. In table [A1](#), we see balance between treated SC ward members in SC-Only and Mixed groups for outcomes on different geographical, demographic, infrastructural and financial characteristics.

At the ward level, table [A2](#) shows balance at the individual ward level for demographic characteristics. We find balance between SC-Only and Mixed group treated ward members on demographic characteristics, issues campaigned on, experience, occupation and different measures of networks and knowledge.

The average SC WM in our sample is reported to be around 39 years old, are Hindu and are shown to have less than 9.5 years of education. SC treatment assigned WMs are also shown to be largely inexperienced, with 63% of SC WMs in mixed group having no previous experience in the role. Similar to our complete sample of ward members, 82% of treated SC ward members campaign for Drains and Lanes construction (Nali Gali), which is followed by Provision of tap water (Nal Jal), Pension and Subsidy on House construction (Pradhan Mantri Awas Yojana, PMAY).

6 Results

6.1 Knowledge

Direct Effects We begin by studying the impact for SC WMs on knowledge. We measure knowledge for WMs at endline by combining four indices that test formal, tacit, procedural and best practices knowledge into a standardized combined index. Comparing the distribution of the knowledge index for different groups, we find that the knowledge gap between SC ward members and non-SC ward members is reduced only when SC ward members are treated in SC-only groups. In the first panel of figure 1, we find the knowledge distribution of non-SC ward members in control to be marginally to the right of the knowledge distribution of SC ward members in control, with most non-SC ward members. For treatment groups however, find the knowledge gap to improve only for SC-only groups. In the third panel of figure 1, we see the gaps in control diminish, with both curves overlapping across the distribution. The gap, on the other hand is shown to widen between SCs and non-SCs in treatment when the SC ward members belong to mixed groups, as shown in the second panel in figure 1.

Among treated groups, we find that when SC ward members are treated in SC-only groups, their knowledge increases by 0.18 SD (see table A8). On the other hand, SC ward members who are treated in mixed groups do not see any gain in learning, with their total treatment effect being equal to -0.05 SD. For SC WMs, we see that effect on knowledge improves particularly for tacit and procedural knowledge indices when they belong to SC-only groups. Between SC WMs in SC-only and mixed groups, we see that SC WMs learn relatively more in SC-only groups for formal and procedural knowledge.

Heterogeneous Treatment Effects on Knowledge We explore heterogeneity in treatment effects for treated SC ward members in SC-Only and mixed groups. We use the causal forests method of [Wager and Athey \(2018\)](#) to estimate conditional average treatment effects (CATEs) for the endline knowledge index of both groups.

Figure 2a presents the conditional average treatment effects for mixed groups (left) and SC-only groups (right) respectively. In case of SC-only groups, we see that most SC politicians are predicted to experience positive knowledge gains from attending peer group meetings. For mixed groups however, we see that only a small right-tailed share is predicted to gain from participating in peer group meetings. In case of SC-only groups,

nearly all of the distribution lies above 0.

Figure 2b plots the predicted endline knowledge across baseline knowledge percentiles for treated SC ward members in SC-only and mixed groups. In case of ward members in SC-only groups, we see that those ward members whose baseline knowledge lies below the median (between the 30th and 60th percentile), are shown to gain the most by being treated in an SC-only group. This is in contrast to SC ward members in mixed groups, where only the most advantaged at baseline are shown to benefit from participation in peer groups.

6.2 Networks

Treatment of WMs in meeting discussion groups allows local politicians to make gains beyond knowledge. Connecting with politicians that work on similar issues allows WMs to expand networks and make new connections beyond their peer groups. When it comes to SC WMs, table A17 shows that SC WMs on average have poorer political networks before the intervention.

We test the effect of the intervention on professional networks for SC WMs belonging to SC-only and mixed groups. We find that the political networks of SC WMs benefit the most from peer group meetings. In table 1, we see that peer groups improve political networks for SC WMs significantly, with a 0.16 SD total increase in the political party networks index for SC WMs in SC-only groups. SC WMs in mixed groups on the other hand show no real improvement in political networks.

In order to investigate what drives this improvement in political networks, we disambiguate our political networks outcome to SC political party and Main political party networks ¹⁶. Columns (3) of table 1 shows that it is SC political party networks that significantly drive the improvement in party networks for SC WMs in SC-only groups. While the effect is not significantly different for SC WMs in SC-only and mixed groups, we see a 0.19 SD total increase in SC political party networks for treated SC WMs.

¹⁶SC political parties include those parties who agendas focus primarily on *Dalit* empowerment, has a primarily SC voter base, and has historically been led by SC party members. Main political party networks includes national level parties that have the largest voter shares and state level parties with large voter share and continuous domination in the state's legislative governance and national parliamentary seats for decades

Since WMs require communication with bureaucrats at higher levels for the execution of development plans in the ward, we test the impact of peer group meetings on bureaucratic networks at the block level. Column (1) of table 1 shows that bureaucratic networks improve only for SC WMs in mixed groups. SC WMs in mixed groups are shown to benefit from interacting with non-SC WMs by gaining block level bureaucratic networks. SC WMs in SC-only groups on the other hand are shown to have significantly worse networks than SCs in mixed groups at endline. Overall, SC WMs in SC-only group have a null overall treatment effect with a p-value of 0.511.

6.3 Meeting Quality and Networks

6.4 Downstream Outcomes

In order to understand how exposure of SC WMs to peer group meetings influence downstream outcomes, we look at the estimated costs of planned projects associated to each scheme in a GP. Since all planning and allocation decisions are made at the panchayat level, we conduct our analysis for each scheme at the GP level. First, we concentrate on treated GPs with at least one SC WM to understand how increase in SC representation in a GP influences costs. However, since absolute improvement in resource allocation may not necessarily indicate effective public service delivery, we also look at allocation based on alignment with campaigned issues and citizen preferences. Specifically, we are interested in seeing how SC WMs deliver to their constituent citizens. We do so by observing heterogeneity in effects on costs by schemes that the SC WMs campaign on and SC citizens prefer.

Issues Campaigned Table 3 shows how estimated cost allocated changes based on the GP composition for GPs with at least one SC WM. We find that in case of GPs where SC WMs belonging to SC-only groups are higher, resources are allocated more towards schemes that SC WMs campaigned on. Column (2) of Table 3 shows that when the count of SC WMs belonging to SC-only groups is higher, the estimated cost on a scheme increases by ₹144,900 for every unit increase in the share of SC WMs that campaigned on that scheme. However, in case of GPs with higher number of SC WMs from mixed groups, we do not see any significant change in estimated cost. While the amount of resources allocated are higher for schemes that more SC WMs from mixed groups campaigned on, the total effect is not significant (p-value = 0.304).

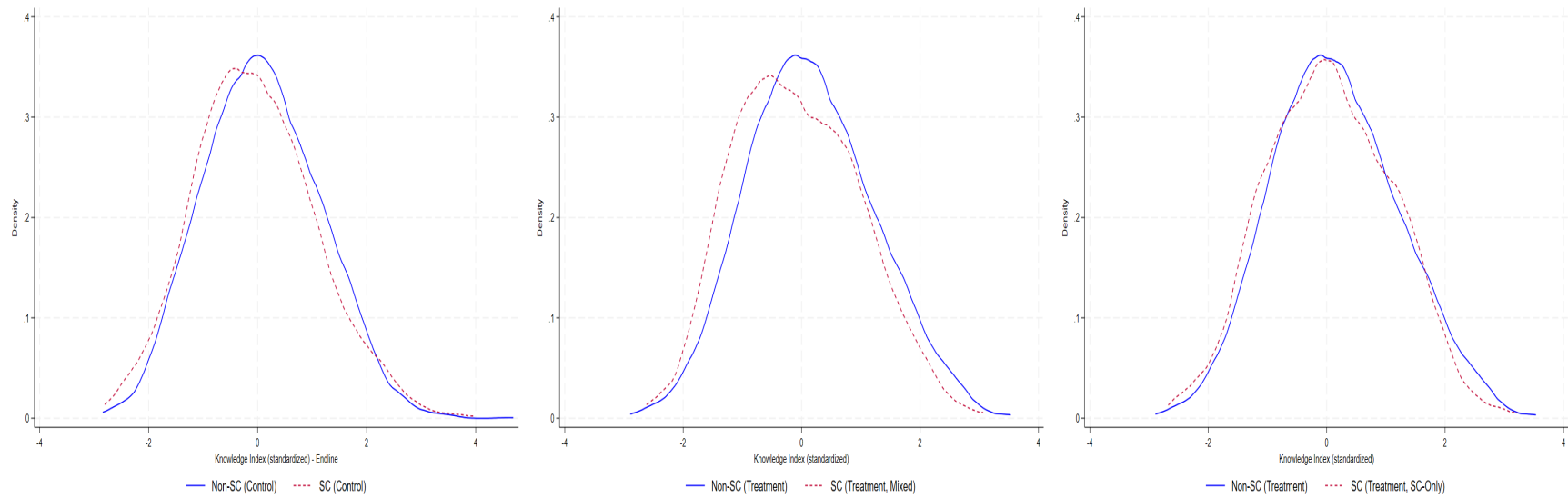
7 Conclusion

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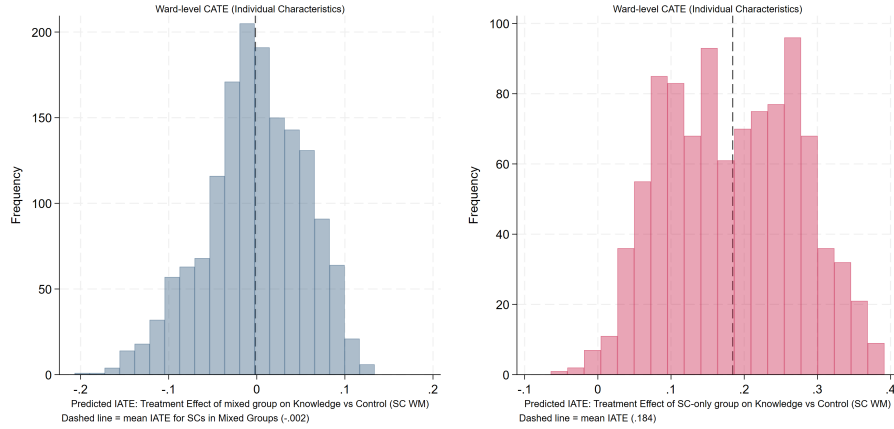
A Main Figures

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

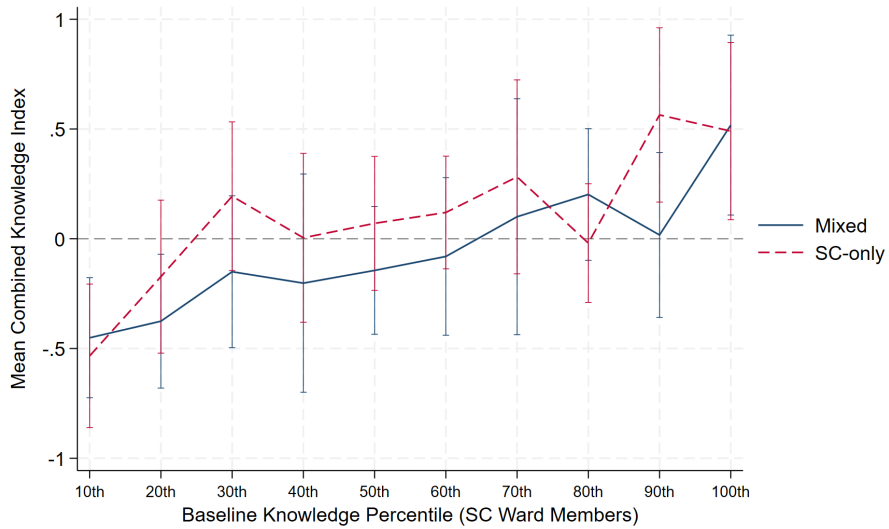


Notes: Kernel density plots of the standardized endline knowledge index. The left panel compares non-SC and SC ward members in control wards; the middle panel compares non-SC ward members and SC ward members in mixed peer groups in treated wards; the right panel compares non-SC ward members and SC ward 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) 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). 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** (0.0783)	-0.0832 (0.0711)	-0.0152 (0.1084)	-0.1212 (0.1023)
Treatment Ward $\times$ SC only group	-0.2370** (0.1059)	0.2385** (0.1022)	0.2089 (0.1468)	0.2176 (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: Reports the treatment effect and the interaction effect of being in an SC only treatment group on professional networks for the SC only sample (treatment and control). The row *Total Effect (Treated, SC-only) p-value* reports the p-value from a linear combination test (Treatment Ward + Treatment Ward $\times$ 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
<i>Panel A: Peer Networks</i>		
SC-only Group	0.090*** (0.033)	46.536* (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)
<i>Panel B: Peer Meeting Quality</i>		
SC-only Group	1.092*** (0.120)	0.085* (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: Sample restricted to treated SC ward members. Panel A, Column (1) reports the SC-only group effect on peer knowledge; Column (2) reports the SC-only group effect on WhatsApp messages, estimated at the WhatsApp-group level. Panel B reports the SC-only group effect on ward member contribution (Column 1) and moderator-rated meeting usefulness (Column 2). All columns are estimated on treated SC ward members / peer groups only. Column (1) of Panel B includes ward member and ward-level controls plus a control for baseline knowledge ranking within group; Column (2) 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 (WhatsApp group) level in Panel B Column (2). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3. GPD 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* (14.219)	-28.260* (14.439)	-16.908** (7.566)	-16.639** (8.042)
Count SC WMs in Mixed groups	4.525 (12.213)	3.322 (11.554)	2.493 (6.157)	0.865 (6.851)
Count SC WMs in SC-only groups × SC Campaigned	172.754*** (66.602)	173.148** (73.424)		
Count SC WMs in Mixed groups × SC Campaigned	54.099 (54.691)	55.049 (59.938)		
Count SC WMs in SC-only groups × SC Citizen Pref.			173.224** (80.554)	173.013* (95.663)
Count SC WMs in Mixed groups × SC Citizen Pref.			134.877** (66.033)	135.262* (75.007)
Observations	5776	5776	8172	8172
GP Level Controls	No	Yes	No	Yes
District Fixed Effects	Yes	Yes	Yes	Yes
Total Effect (SC-only) p-value	0.019	0.039		
Total Effect (Mixed) p-value	0.240	0.304		
Total Effect (Mixed) p-value			0.036	0.071
Total Effect (SC-only) p-value			0.051	0.103

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; these are only estimable in the Issues Campaigned columns (1)-(2). The rows *Total Effect (Mixed/SC-only, Citizen Pref.) p-value* report the analogous linear combination tests using the interaction with Citizen Pref. for Local Gov.; these are only estimable in the Citizen Preferences columns (3)-(4). All regressions control for district and scheme fixed effects. Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

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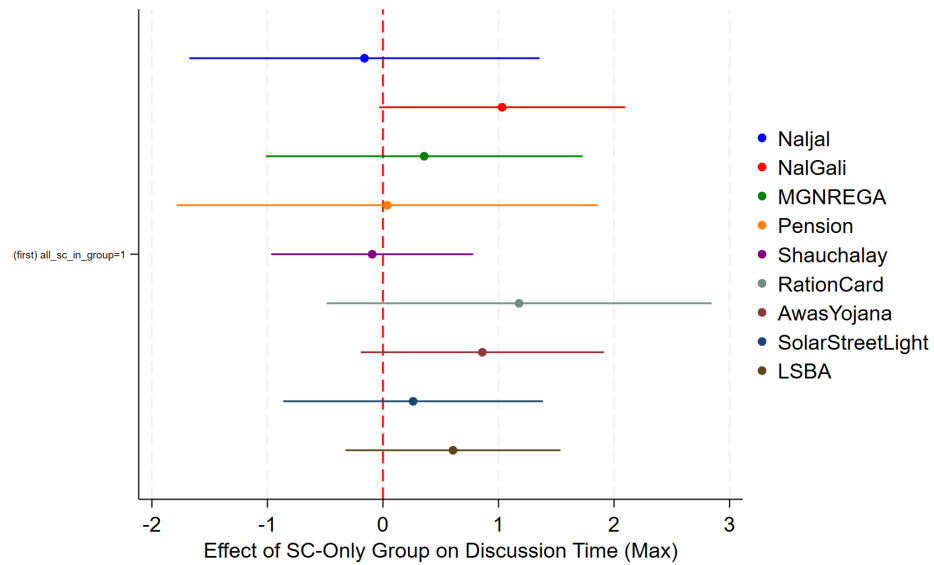


Figure A1. Effect of SC-Only Groups on Discussion Time, by Scheme

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 (0.09)	0.20 (0.10)	0.00 (0.00)
Distance to District Headquarters (Census 2011)	29.03 (13.29)	30.02 (13.80)	0.80 (0.92)
Total GP Area (Census 2011)	1,067.93 (530.89)	1,101.11 (716.07)	41.20 (40.11)
Total Population of GP (Census 2011)	12,367.67 (4,245.73)	12,441.68 (5,115.20)	56.99 (317.79)
Number of Villages in GP (Census 2011)	5.52 (4.44)	5.66 (4.53)	0.22 (0.25)
Percentages of SCs in Main SC Village (Census 2011)	0.55 (0.24)	0.55 (0.23)	0.01 (0.01)
SC Reserved	0.21 (0.41)	0.19 (0.39)	-0.02 (0.03)
ST Reserved	0.00 (0.05)	0.00 (0.05)	-0.00 (0.00)
EBC Reserved	0.19 (0.39)	0.18 (0.38)	-0.00 (0.03)
Gender Reserved	0.46 (0.50)	0.48 (0.50)	0.02 (0.04)
Total Educational Facilities (Census 2001)	3.77 (2.01)	3.66 (1.95)	-0.06 (0.12)
Primary Health Sub Centres (Census 2001)	0.40 (0.68)	0.36 (0.62)	-0.03 (0.05)
Post Office (Census 2001)	1.05 (0.82)	1.07 (0.78)	0.03 (0.06)
Bank Facilities (Census 2001)	0.31 (0.65)	0.34 (0.64)	0.02 (0.04)
Power Supply (Census 2001)	1.91 (2.03)	1.79 (1.90)	-0.10 (0.14)
Paved Road (Census 2001)	1.95 (1.84)	1.71 (1.49)	-0.26** (0.11)
Mud Road (Census 2001)	4.38 (3.38)	4.38 (3.35)	0.04 (0.21)
Child Welfare Centre (Census 2001)	0.04 (0.24)	0.03 (0.19)	-0.01 (0.02)
Bus facilities (Census 2001)	0.59 (1.08)	0.50 (0.96)	-0.08 (0.07)
Mean Village Income (Census 2001)	456,697.81 (3,002,001.25)	545,432.50 (3,584,405.50)	73,701.26 (228,645.56)
Mean Village Expenditure (Census 2001)	270,188.38 (1,572,792.38)	290,684.78 (1,492,694.00)	14,159.72 (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 (330.43)	802.78 (149.27)	-19.05 (19.29)
Ward SC Population	323.18 (182.89)	361.28 (365.86)	29.33 (26.09)
Votes Obtained	159.61 (60.43)	155.53 (58.88)	-2.11 (4.87)
Tot. Candidates	4.42 (1.69)	4.67 (1.81)	0.27* (0.14)
Age	39.17 (12.11)	38.63 (11.55)	-0.54 (0.93)
SC	1.00 (0.00)	1.00 (0.00)	0.00 (0.00)
Hindu	0.99 (0.12)	0.99 (0.11)	0.00 (0.01)
Muslim	0.01 (0.09)	0.00 (0.05)	-0.01 (0.01)
Years of Education	9.81 (4.11)	9.84 (4.29)	0.24 (0.32)
<i>Campaigned: Drains and lanes</i>	0.85 (0.35)	0.82 (0.38)	-0.02 (0.03)
<i>Campaigned: Tap water</i>	0.51 (0.50)	0.52 (0.50)	0.02 (0.04)
<i>Campaigned: Pension</i>	0.20 (0.40)	0.19 (0.39)	-0.00 (0.03)
<i>Campaigned: Housing</i>	0.29 (0.45)	0.28 (0.45)	0.02 (0.03)
Prev. Experience	0.37 (0.48)	0.33 (0.47)	-0.03 (0.03)
Prev. Experience (Family)	0.08 (0.28)	0.08 (0.27)	-0.00 (0.02)
<i>Income Source: Agriculture</i>	0.23 (0.42)	0.30 (0.46)	0.07** (0.03)
Received training	0.90 (0.30)	0.93 (0.25)	0.03 (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)
<i>Knowledge: Housing</i>	0.37 (0.18)	0.38 (0.18)	0.02 (0.01)
<i>Knowledge: Drains & Lanes</i>	0.21 (0.22)	0.19 (0.21)	-0.01 (0.02)
<i>Knowledge: Tap Water</i>	0.08 (0.12)	0.10 (0.14)	0.03 (0.03)
<i>Knowledge: PDS</i>	0.65 (0.37)	0.71 (0.35)	0.06 (0.06)
<i>Knowledge: Pension</i>	0.51 (0.27)	0.54 (0.29)	0.02 (0.04)
<i>Knowledge: Solar Lights</i>	0.39 (0.27)	0.37 (0.28)	-0.02 (0.02)
<i>Knowledge Index Z Score</i>	-0.10 (0.99)	-0.16 (0.97)	-0.02 (0.07)
<i>Knowledge Index (PCA)</i>	-0.32 (1.40)	0.25 (1.78)	0.72*** (0.27)
<i>Networks: Block</i>	0.21 (0.48)	0.21 (0.49)	0.02 (0.04)
<i>Networks: Dist.</i>	0.02 (0.15)	0.04 (0.21)	0.01 (0.01)
<i>Networks: State</i>	0.00 (0.05)	0.00 (0.00)	-0.00 (0.00)
<i>Networks: All</i>	0.22 (0.53)	0.24 (0.55)	0.03 (0.04)
<i>Interested in Peer Learning</i>	0.94 (0.24)	0.97 (0.18)	0.02 (0.02)
<i>Pol. Party Involvement</i>	0.18 (0.38)	0.18 (0.38)	-0.01 (0.03)
<i>WhatsApp</i>	0.78 (0.41)	0.76 (0.43)	-0.02 (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
Darbhangha	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
Darbhangha	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 (0.09)	0.17 (0.09)	-0.00 (0.00)
Distance to District Headquarters (Census 2011)	30.27 (13.57)	30.52 (13.68)	0.44 (0.58)
Total GP Area (Census 2011)	1,053.30 (645.29)	1,042.43 (643.75)	-5.61 (25.64)
Total Population of GP (Census 2011)	12,455.46 (5,232.07)	12,426.56 (5,165.76)	25.66 (221.38)
Number of Villages in GP (Census 2011)	5.03 (4.23)	5.10 (4.15)	0.02 (0.15)
Percentages of SCs in Main SC Village (Census 2011)	0.60 (0.25)	0.59 (0.24)	-0.01 (0.01)
SC Reserved	0.17 (0.37)	0.17 (0.38)	0.01 (0.02)
ST Reserved	0.00 (0.06)	0.01 (0.08)	0.00 (0.00)
EBC Reserved	0.17 (0.37)	0.18 (0.38)	0.01 (0.02)
Gender Reserved	0.44 (0.50)	0.46 (0.50)	0.02 (0.02)
Total Educational Facilities (Census 2001)	3.47 (2.04)	3.46 (1.97)	-0.03 (0.08)
Primary Health Sub Centres (Census 2001)	0.44 (0.70)	0.40 (0.66)	-0.04 (0.03)
Post Office (Census 2001)	1.07 (0.81)	1.08 (0.81)	0.01 (0.03)
Bank Facilities (Census 2001)	0.34 (0.63)	0.35 (0.65)	0.02 (0.03)
Power Supply (Census 2001)	1.80 (1.86)	1.76 (1.94)	-0.04 (0.08)
Paved Road (Census 2001)	1.76 (1.63)	1.73 (1.62)	-0.04 (0.07)
Mud Road (Census 2001)	4.10 (3.10)	4.14 (3.10)	0.03 (0.12)
Child Welfare Centre (Census 2001)	0.05 (0.55)	0.04 (0.29)	-0.02 (0.02)
Bus facilities (Census 2001)	0.51 (0.91)	0.54 (0.95)	0.03 (0.04)
Mean Village Income (Census 2001)	415,342.97 (4,826,905.50)	366,579.09 (3,172,319.50)	-42,466.25 (168,499.31)
Mean Village Expenditure (Census 2001)	928,866.12 (21,157,700.00)	255,508.78 (2,111,171.25)	-629,090.56 (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 census. 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 (179.01)	811.35 (207.82)	810.37 (174.30)	4.95 (8.26)	5.87 (6.37)
Ward SC Population	181.73 (186.31)	190.07 (237.12)	177.60 (209.93)	11.45 (7.97)	9.25 (6.99)
Votes Obtained	153.88 (59.25)	151.85 (58.74)	152.71 (57.57)	-1.34 (2.21)	0.65 (1.90)
Tot. Candidates	4.72 (1.91)	4.72 (1.84)	4.63 (1.89)	-0.01 (0.07)	-0.01 (0.06)
Age	38.96 (11.35)	38.40 (11.37)	39.28 (11.85)	-0.16 (0.39)	0.12 (0.36)
SC	0.33 (0.47)	0.33 (0.47)	0.32 (0.47)	0.02 (0.02)	-0.00 (0.02)
Hindu	0.88 (0.33)	0.89 (0.31)	0.86 (0.34)	0.01 (0.01)	-0.01 (0.01)
Muslim	0.12 (0.32)	0.11 (0.31)	0.13 (0.34)	-0.01 (0.01)	0.01 (0.01)
Years of Education	10.22 (3.96)	10.29 (3.84)	10.19 (4.02)	-0.03 (0.14)	-0.04 (0.13)
<i>Campaigned:</i>	0.83	0.82	0.82	-0.00	0.00
Drains and lanes	(0.38)	(0.38)	(0.39)	(0.01)	(0.01)
<i>Campaigned:</i> Tap	0.55	0.52	0.52	-0.01	-0.03*
water	(0.50)	(0.50)	(0.50)	(0.02)	(0.02)
<i>Campaigned:</i>	0.18	0.20	0.20	0.00	0.01
Pension	(0.39)	(0.40)	(0.40)	(0.01)	(0.01)
<i>Campaigned:</i>	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 (0.46)	0.31 (0.46)	0.32 (0.47)	-0.00 (0.02)	-0.00 (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)
<i>Income Source:</i>	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 (0.27)	0.93 (0.26)	0.92 (0.28)	0.01 (0.01)	-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
<i>Knowledge:</i>	0.39	0.38	0.39	-0.01	0.01
Housing	(0.19)	(0.18)	(0.19)	(0.01)	(0.01)
<i>Knowledge:</i>	0.20	0.20	0.21	-0.01	0.00
Drains/Lanes	(0.22)	(0.21)	(0.22)	(0.01)	(0.01)
<i>Knowledge: Tap</i>	0.11	0.11	0.09	0.00	-0.01
Water	(0.17)	(0.15)	(0.16)	(0.01)	(0.01)
<i>Knowledge: PDS</i>	0.73	0.70	0.74	0.02	-0.00
	(0.34)	(0.34)	(0.34)	(0.02)	(0.02)
<i>Knowledge:</i>	0.50	0.52	0.52	0.03	0.01
Pension	(0.25)	(0.27)	(0.25)	(0.02)	(0.01)
<i>Knowledge:</i>	0.38	0.39	0.38	-0.02*	-0.00
Solar Lights	(0.27)	(0.28)	(0.27)	(0.01)	(0.01)
<i>Knowledge Index</i>	0.04	-0.10	0.06	-0.04	0.02
Z Score	(0.99)	(1.00)	(1.01)	(0.03)	(0.03)
<i>Knowledge Index</i>	0.00	-0.03	0.01	0.01	0.01
(PCA)	(1.50)	(1.55)	(1.49)	(0.12)	(0.08)
<i>Networks: Block</i>	0.19	0.23	0.21	0.02	0.01
	(0.44)	(0.49)	(0.47)	(0.02)	(0.01)
<i>Networks: Dist.</i>	0.02	0.02	0.02	0.01	0.00
	(0.15)	(0.15)	(0.15)	(0.01)	(0.00)
<i>Networks: State</i>	0.01	0.00	0.01	0.00	0.00
	(0.09)	(0.07)	(0.08)	(0.00)	(0.00)
<i>Networks: All</i>	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 (0.0715)	0.0367 (0.0743)	-0.0040 (0.0713)	-0.0902 (0.0715)	-0.0522 (0.0720)
Treated Ward $\times$ SC only group	0.1878* (0.1009)	0.1353 (0.1005)	0.1694* (0.1007)	0.1550 (0.1016)	0.2335** (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: Reports the treated ward and treated ward $\times$ SC only group interaction effects on learning outcomes for the SC only sample (treatment and control). The regression also includes the uninteracted SC only group main effect, which is estimated but omitted from this table. The row *Total Effect (Treated, SC-only) p-value* reports the p-value from a linear combination test (Treated Ward + Treated Ward $\times$ 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. 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. **Impact of Treatment on Learning Outcomes for SC Ward Members, by Group Type**

	(1) Formal Knowledge Index (std)	(2) Tacit Knowledge Index (std)	(3) Procedural Index (std)	(4) Best Practices Index (std)	(5) Combined Index (std)
<i>Panel A: SC WMs in SC-only Groups</i>					
Treated Ward	0.0628 (0.0637)	0.1572** (0.0623)	0.1181* (0.0648)	0.0629 (0.0662)	0.1446** (0.0638)
Observations	1164	1164	1164	1164	1164
Control Mean	-0.062	-0.066	-0.052	-0.020	-0.072
WM Controls	Yes	Yes	Yes	Yes	Yes
Ward-Level Controls	Yes	Yes	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes	Yes
Scheme Fixed Effects	Yes	Yes	Yes	Yes	Yes
<i>Panel B: SC WMs in Mixed Groups</i>					
Treated Ward	-0.0563 (0.0646)	0.0486 (0.0674)	0.0343 (0.0639)	-0.0954 (0.0633)	-0.0248 (0.0650)
Observations	1137	1137	1137	1137	1137
Control Mean	-0.062	-0.066	-0.052	-0.020	-0.072
WM Controls	Yes	Yes	Yes	Yes	Yes
Ward-Level Controls	Yes	Yes	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes	Yes
Scheme Fixed Effects	Yes	Yes	Yes	Yes	Yes

Notes: Panel A restricts the sample to SC ward members in control wards and in SC-only treated groups; Panel B restricts the sample to SC ward members in control wards and in mixed treated groups. Both panels report the treatment effect for SC ward members only, control mean is measured among SC ward members in control wards. 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 A10. **Impact of Treatment on Professional Networks for SC Ward Members, by Group Type**

	(1) Block Bureaucrat Network (std)	(2) Political Party Work (std)
<i>Panel A: SC WMs in Mixed Groups</i>		
Treated Ward	0.1735** (0.0711)	-0.0412 (0.0627)
Observations	1135	1131
Control Mean	-0.038	-0.078
WM Controls	Yes	Yes
Ward-Level Controls	Yes	Yes
District Fixed Effects	Yes	Yes
Scheme Fixed Effects	Yes	Yes
<i>Panel B: SC WMs in SC-only Groups</i>		
Treated Ward	-0.0161 (0.0585)	0.1116* (0.0648)
Observations	1163	1160
Control Mean	-0.038	-0.078
WM Controls	Yes	Yes
Ward-Level Controls	Yes	Yes
District Fixed Effects	Yes	Yes
Scheme Fixed Effects	Yes	Yes

Notes: Panel A restricts the sample to SC ward members in control wards and in mixed treated groups; Panel B restricts the sample to SC ward members in control wards and in SC-only treated groups. Both panels report the treatment effect on professional network outcomes for SC ward members only; control mean is measured among SC ward members in control wards. 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 A11. 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
	<i>Data at WM × Scheme level</i>	
SC Only Group	0.007 (0.018)	-0.034 (0.034)
Observations	7272	7272
Mixed Group Mean	0.23	0.71
Controls	No	No
Scheme Fixed Effects	Yes	Yes

Notes: This table reports the effect of being in an 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 A12. Exposure to SC vs Non-SC Peer Solutions and Learning Outcomes for each Scheme

	(1) Combined Learning Index (std)	(2) Combined Learning Index (std)
	<i>Data at WM × Scheme level</i>	
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

Table A13. 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
Mixed Group Mean	0.23
Controls	No
District Fixed Effects	Yes
Scheme Fixed Effects	Yes

Notes: This table reports the effect of being in an SC-only group on solutions provided and the interaction with issues campaigned at the scheme level for treated SC Ward Members. The unit of observation is ward x scheme. The reference category is mixed groups. This column includes the interaction between SC-only group composition and whether the scheme was 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 A14. Effect of being in SC-Only Groups on Discussion Time (SC sample)

	(1) Max Time Spent in each Meeting for scheme j
SC Only Group	0.590** (0.285)
Observations	5285
Mixed Group 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 max discussion time at the group $\times$ meeting $\times$ scheme level. Sample restricted to SC ward members in treated wards. The reference category is 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 A15. Effect of Treatment on Citizen Rating

	(1) Vote for WM in Future	(2) WM Wins Next Election	(3) Satisfaction with WM Work	(4) WM Public Image	(5) WM-Block Coordination	(6) WM-Mukhiya Coordination	(7) Combined Index
SC-Only Group	0.0005 (0.0648)	-0.0952 (0.0625)	-0.0263 (0.0589)	-0.0011 (0.0580)	-0.0157 (0.0649)	-0.0067 (0.0634)	-0.0137 (0.0576)
Observations	1017	1087	1182	1179	904	1066	1198
WM Controls	No	No	No	No	No	No	No
Ward Level Controls	No	No	No	No	No	No	No
Control Mean	0.471	2.921	2.976	3.500	3.083	3.258	0.011

Notes: The above table reports the effect of being in SC only treatment groups on citizen ratings and perception. All outcomes are standardized using the control group mean and standard deviation. The final column reports results for a combined index constructed as the mean of the six standardized outcomes, re-standardized using the control group mean and standard deviation. Each regression controls for district fixed effects. Results are reported without additional controls. Standard errors are clustered at the ward level and reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A16. **Correlation of Group Contribution (Solutions Provided) to Meeting Usefulness**

	(1) Usefulness (std)
Total Solution Provided	0.300*** (0.028)
Observations	1391
Controls	No
Scheme Fixed Effects	Yes
Moderator Fixed Effects	Yes
Meeting Fixed Effects	Yes

Notes: This table reports the correlation of total solutions provided with moderator rated usefulness at the meeting $\times$ scheme-level. The unit of observation is at group $\times$ meeting $\times$ scheme level. Sample is restricted to treatment wards only. All regressions include meeting and scheme fixed effects. Standard errors are clustered at the group level. $*p < 0.10$, $**p < 0.05$, $***p < 0.01$.

Table A17. 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 (0.0250)	-0.0867*** (0.0246)
Observations	7277	7277
Non-SC Mean	0.0375	0.0383

Notes: 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 share of 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. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

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.¹⁷ 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 (*Pradhan Mantri Awas Yojna*, PMAY), solar lights, subsidised food rations (Public Distribution System, PDS), pensions (Old age pensions), and subsidy for toilet constructions (*Swachh 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 F1.¹⁸
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

¹⁷Treated WMs could acquire this knowledge through peer group discussions that expose them to best practices and practical know-how from more experienced members.

¹⁸For 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 F4.¹⁹

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

¹⁹For 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.²⁰ 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 Confidence

We construct a Confidence Index based on the number of schemes (out of 19) for which a WM reports feeling confident in implementing. This index captures the extent to which WMs feel equipped to fulfil their governance responsibilities. It is constructed by standardizing the raw count using the control group mean and standard deviation. See Table F7 shows the question used to construct the Confidence Index.

E.4 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 (*Mukhya-mantri Kanya Vivah Yojana*, MKVY), Public grievance redressal (*Lok shikayat*), Solid and liquid waste management (*Lohiya Swachh Bharat Abhiyan*, LSBA), Work provided under

²⁰For 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.

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).

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.5 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.6 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 indicators, 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 <i>Nali gali</i> , 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 Public 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. <i>File a collective petition</i> 12. <i>Speak to Swachhta Grihi</i> 13. <i>Speak to Toilet data operator</i> 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. <i>Speak to Public Distribution System (PDS) Contractor</i> 13. <i>Speak to Marketing Officer (MO)</i> 14. <i>RTPS operator</i> 15. Speak to BC 16. Speak to VM 17. <i>Speak to any other officer at the block not mentioned in the list</i> 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. <i>Protest with citizens</i> 9. File online/ offline Complaint through Lok Shikayat Nivaran 10. RTI 11. <i>File a collective petition</i>	12. <i>Speak to a BREDA Company person</i> 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. <i>File a collective petition</i> 14. <i>Speak to Sanitation Supervisor</i> 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. <i>Speak to PS</i> 7. <i>Speak to JE of Public Health Engineering Department (PHED)</i> 8. <i>Speak to PHED Contractor</i> 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. <i>File a collective petition</i> 12. Speak to Panchayat Rozgaar Sevak (PRS)	13. <i>Speak to local groups/organisation (Sangathan)</i> 14. <i>Speak to MGNREGA data operator</i> 15. <i>Speak to MGNREGA Block Program officer (BPO)</i> 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. Ward Members' Confidence in Scheme Knowledge

Scenario	Response Options
Name the schemes for which you feel confident to answer any questions.	97. Did not get any scheme 0. No scheme 1. Nal Jal 2. Nali Gali 3. MGNREGA 4. Old-age Pension 5. Toilet 6. Ration card 8. E-shram card 9. Pradhan Mantri Awas 10. Solar Light 11. Lohia Swachh Bihar Abhiyan - Solid and Liquid Waste Management (LSBA-SLWM) 12. Jal Jeevan Hariyali Abhiyan 13. Studenet Scholarships 14. Certificates (income, caste, birth/death, residence) 15. Education/School 16. Kanya Vivah Yojana Bihar 17. Aadhaar Card 18. Bihar Lok Shikayat Nivaran 19. Ayushman card 98. Don't want to say 99. Don't know / don't remember 100. Others

Table F8. 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 F9. 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