The Impact of Women's Self Help Groups on Political Entry: Evidence from India

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Abstract

The democratization of political entry is essential for a robust representative democracy. We examine whether women's self-help groups (SHGs) – which expand financial access and social networks for disadvantaged groups – can spur political entry. Our study leverages the randomized rollout of an SHG program across 179 village councils (Gram Panchayats, GPs) in Bihar, India. The program targeted households from historically marginalized Scheduled Castes (SCs). SHG formation increases the number of SC candidates in GP elections by 79% and SC women candidates by 126%. However, these effects are concentrated in GPs reserved for SCs. New entrants come from more marginalized backgrounds: poorer, less educated, numerically smaller castes. We find evidence for two mechanisms. First, voter turnout increases, suggesting greater ability of candidates to mobilize new voters. Second, SHGs provide leadership opportunities for group members. Nevertheless, we do not find evidence that SHGs have an impact on the eventual winner. Candidacy effects persist into subsequent election cycles, but we detect no changes in public-goods provision or workfare outcomes. A second research design exploiting (i) differing timing of SHG formation across all of Bihar's GPs (event-study) and (ii) the rule for reserving GPs for SCs (regression discontinuity) provides external validity and suggests entry effects increase with length of exposure to SHGs. Our study highlights the complementarity of both formal (reservations) and informal institutions (SHGs) in democratizing political entry.

JEL codes: D71, D72, O12

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I. Introduction

Leaders influence economic development and growth (Jones and Olken 2005). However, even when democratically elected, leaders tend to be overwhelmingly male and from elite backgrounds. For instance, in the United States, under 30% of 2023 senators were women, and nearly 80% of congress members were non-Hispanic white (Pew Research Center 2023). Thus, increasing representation from disadvantaged groups remains a global challenge for democracies. This is arguably more important for disadvantaged minorities in developing countries, who often face significant entry barriers. In India, the setting of this paper, women occupy 13% of seats in parliament (Ministry of Parliamentary Affairs, Government of India 2023).

Collective action is often seen as a means for under-represented groups to amplify their voice and influence decision-making (Banerjee, Iyer, and Somanathan 2007). One vehicle for collective action – women's self-help groups (SHGs) – has gained popularity in the developing world (Brody et al. 2017; Gugerty, Biscaye, and Anderson 2019). SHGs are fora where poor rural women come together in small groups to collectively lend and borrow from each other. A vast literature shows that SHGs improve finance and livelihoods for women and their households, expand women's social networks and empower them (Hoffmann et al. 2021, Kumar et al. 2019. Moreover, (Prillaman 2023b) shows that SHGs also enhance women's political participation in village meetings and other public platforms. Yet, the explicit connection between SHGs and political entry is unexamined.

In this paper, we study if SHGs spur political entry in local village-council – Gram Panchayat ("GP") – elections in Bihar. Bihar, with over 120 million people, is one of India's largest states and is also among its poorest. Its SHG program, Bihar Rural Livelihoods Project (more commonly known as "Jeevika") was launched in 2006 and has established over 1 million SHGs to date, with over 12 million women. Jeevika, part-funded by the World Bank, is among the most celebrated SHG programs in India and has formed the basis for state-run SHG models adopted in other states in India and elsewhere in the world (WB 2017).

Jeevika primarily targeted women from historically marginalized Scheduled Caste (SC) households (Sanyal, Rao, and Majumdar 2015).[1] SCs comprise a set of heterogeneous castes at the bottom of the caste hierarchy, facing severe discrimination and economic disadvantage (Thorat and Newman 2007; Pande 2003). These households experience

1. Surendra 2024, documents the high take-up of Jeevika among SCs in Bihar and notes: "[J]eevika's recruitment process ... targeted poor women, particularly those from Dalit [SC]/Adivasi [ST] households." Here, we focus only on SCs and not Scheduled Tribes (STs) because there are very few STs in our sample. Our results are robust to including STs.

poorer health, education, and mortality outcomes (Deshpande 2011). As a result, political representation among SCs is limited in open seats, even in local elections where entry costs are lower. Even in Bihar, which boasts a robust local democratic system, with over 8000 GPs and directly elected GP head positions, and quotas for women and SCs (called "reservations"), nearly 80% of SC candidates contest from reserved seats (Kumar and Sharan 2025).

We develop a simple model of political entry to clarify how SHG participation and caste reservations shape incentives of SC households to contest local elections. Building on the valence-based framework of (Dal Bó and Finan 2018), the model treats entry as a household-level decision driven by expected benefits relative to fixed campaign costs. A household's valence—determined by its wealth, education, and sub-caste (*jati)* size—increases its likelihood of winning. SHG membership raises this likelihood by expanding networks, providing financial support, and enabling members to demonstrate leadership.[2] Reservation policies further increase win probabilities by limiting competition to other SC candidates. Together, these factors lower threshold for entry, leading to more SC candidates—particularly from poorer, less-educated, and smaller subcastes—contesting elections in GPs with both SHG presence and reservations (henceforth *SHG + Reserved* GPs).

We rely on the randomized controlled trial (RCT) evaluated in (Hoffmann et al. 2021) to causally measure effects of SHGs on political entry of SCs. The RCT, conducted by the World Bank alongside the Bihar government, randomized SHG presence over 179 GPs. SHGs were introduced two years earlier in treatment GPs in 2012 compared to control GPs in 2014. We measure effects on political entry of SCs in the 2016 GP elections.

We report several findings. First, treated GPs see an increase in SC candidates and SC women candidates by 79% and 126% respectively. Moreover, using randomization as an instrument for the number of groups formed, we find an additional SC (SC woman) candidate emerges for every 22.2 (38.5) groups formed. On average, GPs in Bihar in 2015 have just over 50 SHGs.

Second, treatment effects appear to be driven by GPs reserved for SCs (i.e., *SHG + Reserved* GPs). The interaction between treatment and reservation yields a large (3.34 additional candidates or 222% increase) and statistically significant effect (at the 10% level of significance). Since reservation is not randomly assigned, we confirm our findings using an empirical strategy that combines the RCT (for SHG formation) with a regression discontinuity design (RDD) for SC reservation. The RDD leverages the rule used to assign

2. In their work documenting Bihar's SHG movement, Sanyal, Rao, and Majumdar 2015 quote women SHG members themselves saying: "Jeevika does help build leadership skills and instills confidence in us to handle a community."

GPs to SC reservation, as detailed in (Kumar and Sharan 2025). Within each block (a subdistrict in India and a cluster of about 15 GPs), there exists an SC population threshold: GPs with SC population above this threshold are usually reserved for SCs, while those below it are almost never reserved.

Third, consistent with model predictions, we find that *SHG + Reserved* GPs encourage entry of candidates who are *ex ante* more marginalized. To test this, we match data on candidates (N=2108) with data on all citizens in experimental GPs using the 2011-12 Socioeconomic Caste Census (SECC). Candidates are string-matched to citizens based on various characteristics, including name, guardian's name, age, caste, and sub-caste (proxied by last name). This method allows us to trace 1287 out of 2108 candidates from the candidate dataset. SECC data enables us to calculate an asset index for each household, which serves as our primary measure of candidate wealth. Information on candidates' education levels is obtained from their election affidavits. Additionally, we use the SECC to estimate the size of each candidate's sub-caste. For each candidate, we create a standardized index of marginalization based on education, asset wealth and size of sub-caste. Candidates' in *SHG + Reserved* GPs score lower on the index: for every 100 additional groups, the index falls by 0.69 standard deviations (SD).

We provide evidence for three mechanisms. First, we show treatment influences voter turnout, with a 9.3% increase in the number of votes polled in *SHG + Reserved* GPs. This suggests that SHG women may be leveraging their expanded networks to mobilize voters more effectively.

We next argue that entry is driven by both SHG members and leaders, with households being pivotal to entry. We match SHG rosters to candidate lists and to the SECC (to identify candidates' households). We find that treatment causes greater entry among both SHG women members and SHG leaders, with effects larger in *SHG + Reserved* GPs.[3]

Widening the scope to households, we find that a large share of candidates come from SHG households: among women, 39.6% of candidates in control GPs come from a household with at least one SHG member. This increases by 11.5 p.p. in treatment (to ≈51.1%). In line with our theory and main findings, we find that both male and female candidates come from SHG households, with slightly more men than women in absolute terms.[4] Finally, SHG leadership spurs entry at an even greater rate than membership: SHG-leader households produce twice as many candidates in treatment as in control.

3. The share of female candidates matched to SHG members is 12.1% in treatment vs. 6.3% in control.

4. This is driven by more males contesting overall. However, the rates of entry are slightly lower among men than women: in control GPs, 32.9% of male candidates come from SHG member households, increasing by 8.6 p.p. in treatment (to ≈41.5%).

Third, we ask whether longer exposure to the SHG program affects entry. We use a separate dataset that records the year SHGs first started in every GP in Bihar. Our design combines (i) an event-study–style measure of exposure (years since SHG start) with (ii) the RDD that varies SC reservation status. The results are clear for unreserved GPs: additional exposure does not raise entry. In reserved GPs, we see suggestive evidence of a positive gradient—entry tends to increase with more years of SHG exposure—but estimates are imprecise. These results – covering a much larger sample of GPs in Bihar around the cutoff for SC reservation and spanning the entire length of the program's existence – also provides valuable external validity to the RCT findings.

We next turn from candidacy to winning. The additional candidacy induced by SHGs are concentrated in *SHG + Reserved* GPs, where the caste of the winner is mechanically fixed as SC. Accordingly, we do not see changes in the caste profile of elected officials. But even within these reserved contests, one might expect SHGs to shift who emerges victorious toward candidates from poorer households, smaller sub-castes, or with less education. We find no evidence of such changes. In line with this, we do not observe improvements in downstream outcomes such as public goods provision or workfare outcomes.

While winner profiles remain unchanged, we see some persistence in political entry. In the 2021 elections, more SC women continue to contest, though effect sizes are smaller. A plausible explanation for this persistence lies in program performance: treated GPs continue to have more SHGs than control GPs, and these groups remained better-functioning through 2024–25.

Our paper makes three broad contributions, to the literatures on political entry, political reservations and SHGs.

We are the first paper to show an explicit link between SHGs and political entry. The current literature shows that SHGs have the potential to increase participation in local village government meetings, encourage women's collective action, and consequently, through sustained political action, provide them with the means and agency to challenge existing patriarchal norms (Prillaman 2023a, Das, Maitra, and Sanyal 2019, Kumar et al. 2019). Our primary contribution is demonstrating that this increased agency (Sanyal, Rao, and Majumdar 2015) – especially in conjunction with reservations – extends to greater involvement in formal political participation in the form of contesting local elections. We deepen our contribution by delineating mechanisms: improvements in turnout and the democratization of the candidate pool caused by a lowering of entry barriers.

A vast literature studies how political reservations in local government fundamentally alter women's and SC/STs political entry and consequent downstream outcomes (Chat-

topadhyay and Duflo 2004, Chin and Prakash 2011, Beaman et al. 2009 Kumar and Sharan 2025, Gulzar, Haas, and Pasquale 2023, Chauchard 2014). This paper highlights a complementary mechanism that amplifies the effects of formal institutional design: informal collective organization through self-help groups (SHGs). We show SHG formation enhances the entry effects of SC reservation, jointly expanding the pool of entrants and reshaping who runs for office. In reserved GPs with SHGs, candidates tend to be less educated and from poorer households, suggesting that informal mobilization can deepen the inclusiveness of formal affirmative action. In doing so, the paper contributes to a growing literature on the democratic entry of different types of households into electoral politics under reservation (Bamezai et al. 2024).

Our research also contributes to a broader literature studying SHGs and their impacts on participating individuals and the community (Dıaz-Martin et al. 2022). SHGs have been shown to improve a wide range of financial outcomes, including access to credit with lower interest rates, boosting savings, and boosting household income through various channels, including wage labor, self-employment, participation in NREGA, and providing a cushion against weather shocks (Deshpande, Khanna, and Walia 2023, Deshpande and Khanna 2021, Demont 2022, Hoffmann et al. 2021, Kumar et al. 2019, Pandey and Gupta 2019). Importantly, the literature has also shown that participating in SHGs can empower members, increasing both their bargaining power within the household but also social networks and connections within the village (Kochar et al. 2022, Kumar et al. 2019). We show in conjunction with reservations, SHGs allow for more candidates to run, and increase overall voter turnout, leading to more vibrant local elections in general.

II. Institutional Background, Data, and Sample Selection

A. Self Help Group (SHG) program in Bihar

Bihar is among India's poorest states, with over 130 million residents and persistently low levels of income and human development. In Bihar, the SHG program— called *Jeevika*—was piloted in 8 districts between 2007 and 2011 and scaled up statewide thereafter. Bihar currently includes over 12 million members as part of just over 1 million SHGs.[5]

The SHG model mobilizes 10–15 women from poor households, particularly from SC and

5. Numbers were accessed from the NRLM website in March 2024: https://nrlm.gov.in/shgOuterReports.do?methodName=showShgreport

ST groups, into savings and credit groups. These groups pool savings and access public funds: an initial grant of INR 15,000, followed by grants up to INR 50,000, contingent on regular meetings, savings, and repayment performance (Kochar et al. 2022; Datta et al. 2018). These funds are a critical source of low-cost credit in a context where formal financial access remains limited.

SHGs also offer platforms for leadership and collective action. Over time, groups are integrated into a federated structure—Village Organizations (VOs) and Cluster Level Federations (CLFs)—through which select members take on governance roles. These positions expose women to new skills in coordination and communication, while expanding their networks and influence within the community.

B. Local Government and Political Reservation in Bihar

Bihar's rural local governments are organized into Gram Panchayats (GPs), each serving around 12,000 people. Each GP is divided into an average of 13.6 wards. Voters directly elect two tiers of representatives: the Mukhiya (GP head) and ward members (WMs). Bihar has over 8,000 GPs and 100,000 elected WMs.

Reservations

History: Since 2006, Bihar has implemented a fixed 10-year cycle of political reservations in GPs. Seats for GP heads and WMs are reserved for SCs, STs and Extremely Backward Classes (EBCs) in proportion to their population share. Within each caste category — including open seats— up to 50% are further reserved for women. The first reservation cycle covered 2006–2016, and second covers 2016–2026.

Entry in the Absence of Reservations is Rare: In our 90 experimental control GPs, SC candidates have virtually no electoral viability in caste-unreserved GP head seats: there are no SC GP heads in unreserved seats and fewer than 10% of the candidates are SCs, irrespective of women's reservation.

Reservation Algorithm We exploit SC reservation status of GPs in Bihar during the 2016 local elections. Within each block, GP head seats are reserved for SCs based on the GP's SC population. This creates a block-specific population threshold: GPs above the cutoff are typically reserved, while those below are not. We follow (Kumar and Sharan 2025) and construct a running variable based on SC population. Further details are provided in Appendix Section XII..

C. Data Sources and Samples

We draw on multiple data sources:

SHG Program Data We use two sources:

- *Administrative data* from Jeevika, covering all 8,392 GPs from 2007–2022. It includes group formation dates, member counts, and caste composition.
- *Scraped data* from the National Rural Livelihoods Mission (NRLM) website, covering 9.9 million SHG members. This includes names, caste, GP location, and father/husband names, and names of leaders (President and Secretary) of VOs/CLFs. Appendix Figure A1 shows program-expansion over time.

Political Entry Data We use publicly available data from the 2016 GP elections, covering 7,792 of 8,392 GPs. This includes candidate names, caste, gender, education, age, votes received, and winner. Reservation (for SC, ST, OBC, and women) is also included. We use data from the 2006 elections for control variables and 2021 elections to examine persistence. Ward-level election data is available for 109,352 wards across 8,093 GPs. Summary statistics are in Appendix Table A1.

GP-Level Characteristics We supplement the above with:

- *2011 Population Census*: We create control variables that we add to our main regressions.
- *2012 Socio-Economic and Caste Census (SECC)* data: we match political candidates to SECC and back out (a) household wealth and (b) sub-caste size of candidates. We are able to find about 61% of our candidates. Household wealth is based on PCA asset score of: land; the type of roof (concrete or not) and walls (whether made of burnt brick or concrete) of the main dwelling room; whether the house has four or more rooms; whether the household has a phone; and whether the household owns a vehicle. We proxy for sub-caste by surname size.[6]

6. In rural Bihar, surnames are more strongly linked to sub-castes than in many other regions. To address ambiguity, we cross-check paternal surnames and restrict matches to within broad caste groups (see Kumar and Sharan 2025). These steps help mitigate concerns about using surnames as a proxy for sub-caste identity.

- *Mission Antyodaya data*: This dataset - accessed via the SHRUG platform - provides us with downstream village infrastructure outcomes (Asher et al. 2021). Outcome variable descriptions in Table A17.

Samples Used

We rely on two main samples:

- **Experimental Sample**: Based on Hoffmann et al. 2021, this includes 89 GPs where the SHG program began in 2012 (treatment) and 90 GPs where it began in 2014 (control).
- **RDD Sample**: A larger sample based on the SC and female reservation thresholds. For SC reservations, we use block-level SC population cutoffs following (Kumar and Sharan 2025). We construct an analogous running variable for female reservations. Appendix Figure A5 shows the resulting discontinuities.

III. Basic Conceptual Framework

In Appendix section XI., we present a simple model that formalizes our intuition about how SHG participation and caste reservations influence the political entry of SC households. Below, we summarize the structure and key predictions.

Model set-up We formalize political entry as a household-level decision, drawing on the valence-based framework of (Dal Bó and Finan 2018). We focus on households owing to previous work from similar settings emphasizing the central role of households in political participation and entry (Prillaman 2023a; Bamezai 2025). Moreover, as we show later, SHG-linked households put forward both male and female candidates (see Section C.). Each household decides whether to field a candidate by comparing expected benefits of holding office with a fixed cost of campaigning. A household's *valence*, or electability, is a function of its wealth, education, and the size of its sub-caste vote base. Two policies shift the probability of victory, and thus affect decision to enter. First, caste reservation lowers effective competition by limiting the candidate pool to other SC households, mechanically increasing the chances of victory. Second, SHG participation—though limited to women—can benefit the household as a whole by easing financial constraints, expanding local networks, and offering members a platform to demonstrate leadership.

Both policies therefore affect the likelihood that an SC household will choose to field a candidate.

Model predictions The model yields two central predictions. First, political entry among SCs should increase in GPs where SHGs are active, and rise even further in SHG GPs that are also reserved for SCs. Second, because both SHGs and reservations lower the effective threshold for entry, new entrants will be households that would not otherwise have contested. These marginal candidates are likely to be less educated, from poorer backgrounds, and from numerically smaller SC sub-castes.

IV. Results from the RCT

A. Empirical Strategy

To study the impact of exposure to SHGs on political entry, we first use the RCT sample to estimate:

$$Y_i = \beta_o + \beta_1 Treated_i + \boldsymbol{C_i} + pw_i + \epsilon_i \tag{1}$$

where Y_i is the number of SC/SC women candidates running for the GP head position in the 2016 elections. $Treated_i$ is an indicator variable for the earlier randomized introduction of the SHG program in 2012 (control group accesses SHGs in 2014). Controls, $C_i, include$: GP and SC population, area, distance to nearest town, and past gender reservation. The original RCT design randomized within 85 pair-wise strata, pw_i.[7]

Next, we use the additional variation in the formation of groups (num_shg_i) by 2015, and instrument the number of groups formed with ($Treated_i$).

$$num\_shg_i = \alpha_0 + \alpha_1 Treated_i + \boldsymbol{C_i} + pw_i + \nu_i \tag{2}$$

$$Y_i = \beta_0 + \beta_1 \widehat{num\_shg_i} + \boldsymbol{C_i} + pw_i + \epsilon_i \tag{3}$$

Our next specification estimates separately the interaction effect of SHGs and reservations, R_i (for SCs):

7. Section IX. discusses how our experiment is well-powered to see reasonably small treatment effects.

$$Y_i = \beta_o + \beta_1 R_i + \beta_2 Treated_i + \beta_3 R_i Treated_i + \boldsymbol{C_i} + b_i + \epsilon_i \tag{4}$$

In this specification we use block fixed effects b_i since the RCT treatment and control samples were also balanced within blocks by design but using the pairwise strata would be too restrictive for including reservations (and interactions with reservations). Additionally, we show results using a version of Eq. (5) that instruments for reservation status using the SC population of the GP being above a threshold. We refer to this design as an RD-RCT design. Below, we describe the fuzzy RD design.

$$\begin{aligned} R_i = \alpha_0 + \alpha_1 1(Pop_i > T_b) + \alpha_2 (Pop_i - T_b) + \\ \alpha_3 (Pop_i - T_b) * 1(Pop_i >= T_b) + C_i + b_i + \eta_i \end{aligned} \tag{5}$$

$$Y_i = \beta_o + \beta_1 R_i + \beta_2 Treated_i + \beta_3 R_i Treated_i + \boldsymbol{C_i} + b_i + \epsilon_i \tag{6}$$

Here T_b is the population threshold above which GPs are reserved for SCs (see Appendix Section XII. for a description of the reservation rule,).

B. Threats to validity

Both compliance with the SHG program and balance of covariates in this experimental sample are robust and discussed in (Hoffmann et al. 2021). If treatment affects outcomes independent of the number of groups formed, then the exclusion restriction for measuring the impact of the number of groups could be violated. We still use the instrument since group formation captures important variation.

C. Effect on SC and SC women candidates

We first present the relationship between SHGs and political participation following Eq. (2). Table 1 shows results for all SC candidates in the top panel. Col 1 shows that, on average, 2.2 more SC candidates ran in the 2016 local elections in treated GPs. Col 2 uses the number of SHGs formed as the explanatory variable, following Eqs. (3) and (4), and shows that 1 additional SC candidate runs for every 22 SHG groups formed. Col 3 restricts the sample to unreserved areas (i.e., not reserved for SC, women, or OBC) and finds no additional SC candidates running in GPs that received the program earlier. Col 4 follows Eq. (5), showing 2.3 additional SC candidates running in SC-reserved GPs with

earlier SHG rollout, though the effects are not statistically significant.[8] Col 5 uses Eqs. (6) and (7). This "RD-RCT" specification shows 3.4 more SC candidates (p = 0.08) in *SHG + Reserved* GPs. In both Cols 4 and 5, the coefficient on Treatment—representing SHG effects in unreserved GPs—is small, negative, and statistically indistinguishable from zero.

We now study SC female candidates. The bottom panel of Table 1 shows stronger results, as few SC women otherwise run in local elections. Col 1 shows that 1.2 more SC female candidates ran in treatment GPs (p = 0.05), an increase of 126%. Similarly, Cols 4 and 5 show larger coefficients in *SHG + Reserved* GPs: about 3.7 (p = 0.09) and 4 (p = 0.1) more SC female candidates, respectively. Appendix Table A2 shows results for both SC and ST candidates: if anything, treatment effects are even stronger.[9]

Given the small RCT sample, we compute randomized inference p-values. We estimate p-values of 0.04 and 0.064 for SC and SC female candidates, respectively, consistent with the original results.

In Table A4 Col. 1 and consistent with expectations, we show that there are nearly 4.6 additional candidates running in treated GPs that are reserved for both SCs and women and the results are statistically significant.[10] In Table A6, using Eq. (2) as a placebo test, we show more candidates do not run in other caste/gender categories not targeted by the program. Consistent with the idea that ward-level posts offer limited benefits, we find no effects on political entry in ward elections.[11]

D. Effect on Winners

We now examine whether treatment affects the pool of winners. We look at the education, wealth score, and sub-caste of the winning SC candidate. Figure 2 shows no effects in treated or *SHG + Reserved* GPs on the winner's age, education, or asset score. Overall, treatment does not change who wins elections.[12]

8. The number of SC-reserved GPs in the RCT sample is 32.

9. We show outcomes for all female candidates using the same specifications (replacing SC with female reservations) in Appendix Table A3.

10. We show these results in the Appendix as the number of GPs reserved for both SCs and women in the RCT sample is small.

11. Appendix Figure A3, however, shows rising SC female participation in wards with higher baseline SC populations—consistent with model predictions.

12. This is not entirely surprising: there are, on average, 11–12 candidates per GP head. Sanyal, Rao, and Majumdar 2015 quote a woman SHG-leader in Bihar who contested and lost the GP election: "I had fought for Mukhiya elections, but I lost. The other candidate bought the seat; he spent thirteen lakhs. And I had no money."

V. Mechanisms

The results above underline our main finding: we observe an increased number of SC candidates in *SHG + Reserved* GPs. What explains this?

A. Effects on Candidate Pool

We examine whether candidate characteristics differ in *SHG + Reserved* GPs. Our framework predicts that lower entry barriers should enable more marginalised individuals to contest. Using candidate affidavits and SECC data, we construct three measures of candidate type for each GP: (i) median education, (ii) average asset wealth,[13] and (iii) average sub-caste size (proxied by surname prevalence in the SECC). We then take the mean of their standardised values to form a composite index.

Figure 1, Panel (a), shows that candidate pools in *SHG + Reserved* GPs have lower index scores. The interaction between treatment and SC reservation yields a –0.47 SD coefficient, though not statistically significant. A 100-group rise in SHG presence corresponds to a 0.69 SD decline in the index ($p = 0.03$), increasing to 0.92 SD when instrumenting group formation with treatment ($p = 0.11$).

Panel (b) decomposes this effect: education, assets, and sub-caste population each decline with SHG intensity in SC-reserved GPs, though not all significantly. Overall, greater SHG activity is linked to the entry of more marginalised candidates into local elections.

B. Entry Among SHG Members and SHG Leaders

To better understand who these new entrants are, we examine whether SHG members themselves—or SHG leaders—contest elections.

When we compare treatment and control GPs (Table 2) and look at backgrounds of contesting female candidates, a striking pattern emerges. Among 991 female candidates across 137 GPs, the SHG match rate is 12.1% in treatment GPs versus 6.3% in control GPs (Col 1). This further rises to 24.4% in *SHG + Reserved* GPs (Col 2). For SHG leaders, we match just over two additional leader–candidate pairs in treatment GPs, and none in control GPs (Table 2, Cols 4 and 5). These results highlight that political entry

13. We match 1,287 of 2,108 candidates (61%) across 172 of 179 GPs to households in the 2011–12 SECC. Matched candidates are more likely to be SC, marginally more educated, and slightly older (Table A11). Appendix X. provides details.

among SHG-linked women is significantly more likely in treatment areas, especially in *SHG + Reserved* GPs. Moreover, in the RCT sample but also in the universe of all GPs, SHG leaders exhibit a markedly higher propensity to contest elections compared to members (Tables Table A8, A9).[14]

We caution against interpreting these results as implying that most female candidates in 2016 were not SHG members. Our conservative name-matching algorithm — requiring high similarity thresholds across datasets with inconsistent spellings — likely understates true overlap.

Overall, SHG participation, especially in reserved GPs, facilitates political entry among women from poorer and less privileged backgrounds. While SHG membership accounts for much of this effect, leadership positions appear to provide an additional springboard into formal politics. Yet, as our framework and results suggest, entry is rarely an individual act: it often reflects household-level decision-making. We therefore next turn to the household as the unit of analysis.

C. Entry Among SHG Member and Leader *Households*

One way to test if entry occurs at the individual or the household level is to examine candidate households: do SHG households put forward candidates, and does the pattern differ across treated and control GPs? To do so, we first match both the candidates and the SHG dataset to households within the SECC. Thus, for each candidate, we can identify the households they come from and whether that household had an SHG member or leader.

Figure A4 shows that SHG households field both male and female candidates—if anything, more men than women. This supports our argument that SHG benefits accrue at the household level, a finding robust to varying the matching threshold.

Table 3 compares treated and control GPs. In control areas, 32.9% of male and 39.6% of female candidates come from SHG member households; in treated GPs, these rise by 8.6 and 11.5 p.ps, respectively. Columns 3–4 show that effects are concentrated in *SHG + Reserved* GPs.

14. In the overall sample of GPs, the matches are low in absolute terms, but show meaningful patterns. Just 0.08% of SHG members and 0.65% of SHG leaders (Presidents and Secretaries of Village and Cluster-Level Federations) appear in the candidate list (see Table A8). Nonetheless, since SHG leaders are over eight times more likely to run for office than regular members, this suggests that leadership roles within the SHG structure may serve as a pathway into formal politics. This may not be entirely causal since unobserved factors could drive both SHG leadership and political entry.

Panel B of 2 reports similar patterns for SHG leader households: 4.4% of male and 6.1% of female candidates in control GPs come from such households, roughly doubling in treated GPs (Cols 1–2). Reservation does not further raise entry from leader households, likely because these households were inframarginal in reserved GPs but marginal in unreserved ones.

Overall, these findings confirm that political entry operates at the household level. Limiting analysis to SHG members alone would understate treatment effects, since SHG households field substantial numbers of both male and female candidates.

D. Turnout

Next, we examine whether political entry is linked to turnout. Anecdotally, there is evidence – (Sanyal, Rao, and Majumdar 2015) quote a Jeevika woman: "Women came in large numbers from eight different villages for the election. And everyone voted for me. You know why? Because I've made groups everywhere." We measure turnout by the number of votes polled in GP elections, controlling for the population of GPs. An increase in turnout could reflect SHG women leveraging their expanded networks to mobilize voters more effectively.

Treatment potentially increases voter turnout (see bottom panel of Table 2). 100 additional SHGs in a GP causes a 9.7 p.p rise in turnout (Col 2). In *SHG + Reserved* GPs, voter turnout increases by 9.3 p.p (Col 3). However, the coefficients are substantially noisier in the RD-RCT framework (Col 4).

E. Long-run exposure

The RCT documents an additional two years of SHG activity can shift candidacy, with effects concentrated in reserved GPs. We next examine whether entry scales with longer exposure in the full cross-section of GPs in Bihar. For each GP, we observe the year of first SHG presence. We use this to define years of exposure to SHGs as of 2016. We group exposure into bins ($\leq$3 years, >3 years), treating GPs that had not received SHGs by 2016 as the omitted category. We do so because typically after 3 years of initial SHG entry, SHGs can be considered to be mature: by this time, SHGs have received additional loans and are federated under VOs.

We estimate a difference-in-discontinuities style specification within a symmetric window around the SC-reservation cutoff, absorbing block fixed effects and reporting robust

standard errors:

$$SC\_Cand_{gb} = \alpha + \sum_{e \in \mathcal{E}} \beta_e \, 1\{\text{exp\_bin} = e\}_g + \gamma \, SCRes_g + \sum_{e \in \mathcal{E}} \delta_e \, 1\{\text{exp\_bin} = e\}_g \times SCRes_g + \rho \, Dist_g + \sum_{e \in \mathcal{E}} \kappa_e \, 1\{\text{exp\_bin} = e\}_g \times Dist_g + X_g'\theta + \mu_b + \varepsilon_{gb}, \tag{7}$$

where SC_Cand_{gb} is the number of SC candidates in GP g, $SCRes_g$ denotes SC reservation in 2016, $Dist_g$ is the running variable, X_g are GP-level controls, and μ_b are block fixed effects. We restrict the sample and include fixed effects to ensure like-with-like comparisons. First, block fixed effects absorb the administrative targeting of SHG expansion at the block level; conditional on these, the timing of SHG formation across GPs within a block was plausibly idiosyncratic. Second, we limit the analysis to GPs within the RD bandwidth to ensure comparable caste compositions. Table A15 shows that GPs with shorter and longer SHG exposure are similar across a wide range of pre-SHG characteristics, supporting the use of this residual variation as suggestive complementary evidence.[15]

Figure A7 plots the corresponding coefficients. The core result replicates: SHG presence raises SC candidacy *only* where the GP is SC-reserved. The unreserved main effects (β_e) are near zero, whereas the reservation add-ons (δ_e) are positive. Second, there is *suggestive* evidence of a gradient in reserved GPs: the reservation add-on is larger for >3 years of exposure than for ≤3 years. Confidence intervals are wide and overlap, so we interpret this pattern cautiously. Consistent with the RCT, we find no gradient in unreserved GPs, suggesting that additional exposure does not translate into entry absent SC reservation. These results, though suggestive, provide valuable external validity to the RCT findings.

VI. Discussion

SHGs primarily aim to improve women's financial security, but a growing body of research demonstrates their broader impact on communities (Dıaz-Martin et al. 2022). For example, (Prillaman 2023b) shows how an NGO-led SHG movement in Madhya Pradesh fosters women's collective action, having transformative effects on their non-electoral political participation. Similarly, (Sanyal, Rao, and Majumdar 2015), studying the initial rollout of Jeevika, suggests that SHGs can create a "mini-social movement" that challenges traditional caste structures and patriarchy within villages. Building on this literature, this paper shows that SHGs can also serve as an informal institutional complement to formal

15. See also A16 for a comparison of never-exposed GPs with those that have some exposure.

affirmative action: SHG presence increases political entry of marginalised groups.

Three explanations emerge. First, SHG formation may help SC households bear the costs of contesting elections, enabling poorer and less educated candidates to enter the fray. While we lack data on individual loans, (Hoffmann et al. 2021) estimate the average loan per member to be around INR 4,000. Given that the official spending limit for GP head elections was INR 40,000 in 2016 (Press Trust of India 2016)—and actual spending is reported to be considerably higher (Chaudhary 2016)—the financial support from SHGs alone is unlikely to explain all the observed entry. Second, SHGs may provide a platform for developing leadership skills, creating a pathway into politics. Third, the program's expanded social networks may have enhanced voter mobilization and turnout, further increasing electoral participation.

We now turn to downstream effects of the RCT, focusing on entry in subsequent elections, public goods and SHG performance 12 years later (see Figure 2).[16] Political effects persisted beyond the 2016 elections: in treated GPs, more SC women continued to contest in 2021 (Panel A of Fig 2; Table A5), likely reflecting higher SHG presence and better functioning groups through 2024–25 (see bottom 3 estimates in Figure 2).

However, this sustained entry did not translate into changes in public goods or welfare program outcomes (Figure 2; Tables A13, A14), even in *SHG + Reserved* GPs (Panel B of Figure 2). One clear reason is that the identity or characteristics of the winner remains unchanged in both treated and *SHG + Reserved GPs*. It is also possible that reservation alone was already effective in improving SC citizens' welfare: evidence suggests that SC GP heads prioritize SC welfare even during a time when the SHG movement was still in its infancy (Kumar and Sharan 2025). Finally, it is possible that SHG exposure improves outcome, but because control GPs also accessed SHGs within two years of the intervention, we do not find differential effects in this instance.

16. We describe how outcomes are constructed in Table A17.

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VII. Main Tables and Figures

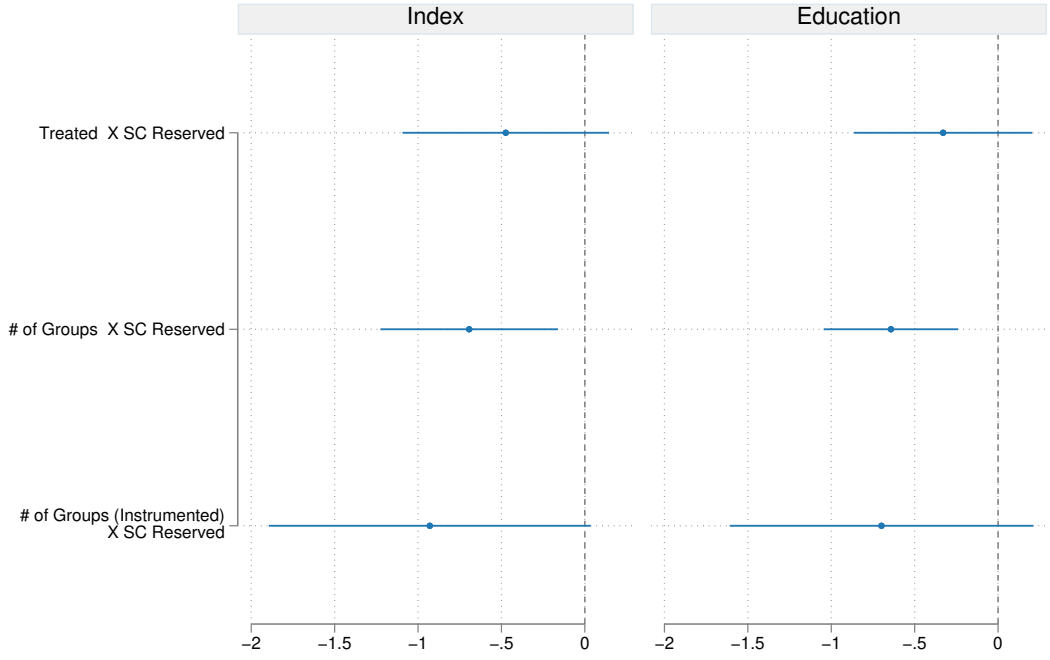
Table 1: Number of SC and SC Women candidates running in treatment GPs

			Panel A: All SCs		
	(1)	(2)	(3)	(4)	(5)
	RCT	IV	RCT Unreserved	RCT Het	RD-RCT
Treated	2.157**		-0.172	-0.236	-0.353
	(1.048)		(0.363)	(0.290)	(0.313)
# of Groups		0.045***			
		(0.017)			
SC_Reserved				13.624***	13.532***
				(1.117)	(2.093)
Treated X SC Reserved				2.289	
				(1.614)	
Treated X SC Reserved (IV)					3.335*
					(1.833)
Observations	179	179	62	179	179
Fixed Effects	Strata	Strata	None	Block	Block
Sample	All	All	All Unreserved	All	All
Control Mean	2.74	2.74	1.23	2.74	2.74
			Panel B: SC Women		
	(1)	(2)	(3)	(4)	(5)
	RCT	IV	RCT Unreserved	RCT Het	RD-RCT
Treated	1.225*		-0.167	-0.161	-0.463
	(0.635)		(0.193)	(0.222)	(0.302)
# Groups		0.026***			
		(0.010)			
SC_Reserved				4.096***	-1.448
				(1.261)	(1.802)
Treated X SC Reserved				3.704*	
				(2.157)	
Treated X SC Reserved (IV)					4.021
					(2.448)
Observations	179	179	114	179	179
Fixed Effects	Strata	Strata	Strata	Block	Block
Sample	All	All	Caste Unreserved	All	All
Control Mean	0.97	0.97	0.48	0.97	0.97

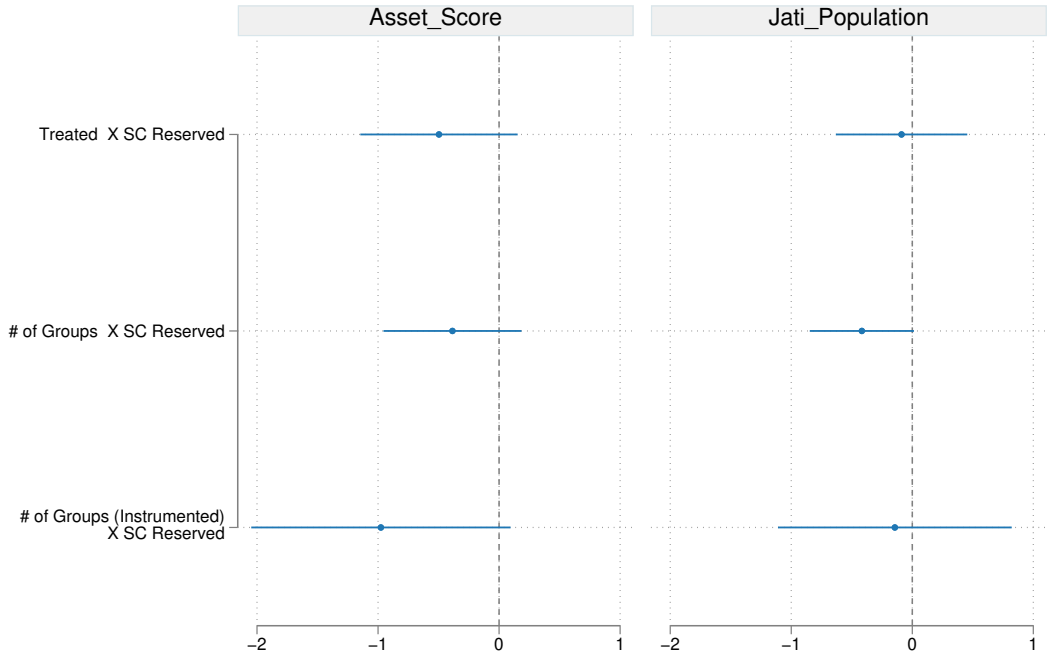
Notes: The outcome variable in Panel A is the number of SC candidates running in the local village elections in 2016. Panel B shows the same regressions with SC women as the outcome variable. Col 1 shows the results for the RCT. Col 2 shows the number of groups in 2015 instrumented using the *early_shg* instrument. Col 3 shows results for the sample excluding GPs reserved for SCs, OBCs and Women in 2016. In Col 4, shows results using the SC reservation indicator for GPs and the interaction with earlier SHG rollout. Col 5 shows the results from the RD-RCT specification i.e. shows the coefficient on the interaction term above the SC reservation cutoff. Fixed Effect denotes whether the paired RCT strata or block fixed effects were used. All regressions include village controls including GP total and SC population, area, and distance to the district headquarter controls, as well as if the GP was reserved in the past for women. Robust standard errors are shown in brackets.

Figure 1: Candidate characteristics

Panel (a)



Panel (b)



Notes:The outcome variables in Panel (a) is a standardized index of all 3 characteristics (Education, Asset Score, Jati Population) and standardized years of education. The outcome variables in Panel (b) are the standardized asset based poverty score for candidates and the standardized log of Jati population. The poverty score is calculated by matching candidates to the SECC data and based on principal components analysis of households assets, which is subsequently aggregated to the GP level. Only the interaction term between reservation and SHG terms as well as the instrumented interaction term are shown. The SHG variable is an indicator for early treatment GPs or number of groups formed by 2015 or an instrumented version of the number of groups. The coefficient for the number of groups is scaled by 100. All regressions include GP and female reservation controls and block fixed effects with robust standard errors. The regression results are shown in Table A7.

Table 2: Mechanisms: Leadership and Turnout

	Panel A: Members and Leaders (Match Rates)			
	(1)	(2)	(3)	(4)
Treated	5.841***	0.053	2.160***	1.270
	(1.948)	(2.243)	(0.769)	(0.940)
SC_Reserved		-4.109		0.070
		(2.987)		(0.475)
Treated X SC Reserved		18.108***		2.313
		(5.162)		(2.007)
Observations	982	982	991	991
Sample	Members	Members	Leaders	Leaders
Control Mean	6.31	6.31	0.00	0.00

	Panel B: Turnout (Total Votes)			
	(1)	(2)	(3)	(4)
Treated	-146.948			-140.126
	(124.398)			(181.487)
Number of groups(2015)		4.321***		
		(1.165)		
Treated X SC Reserved			413.916*	
			(236.125)	
Treated X SC Reserved (RD-RCT)				382.152
				(848.655)
Observations	176	176	176	176
Fixed Effects	Block	Block	Block	Block
Control Mean	4451.54	4451.54	4451.54	4451.54

Notes: Panel A shows match rates in the RCT sample for all members in Cols 1 and 2, and leaders in Cols 3 and 4, after a name matching exercise between candidate and SHG member/leader data. Cols 2 and 4 also shows the interaction with SC Reserved GPs. The match rate is multiplied by 100. The outcome variable in Panel B is total votes in the GP in the RCT sample. *Treated* is an indicator variable where SHGs were randomly introduced earlier in 2012. Col 2 shows the number of groups formed by 2015. Col 3 show the interaction with SC reservation and *Treated* and Col 4 shows the RD-RCT specification. All regressions control for baseline village characteristics and include block fixed effects and robust standard errors in brackets.

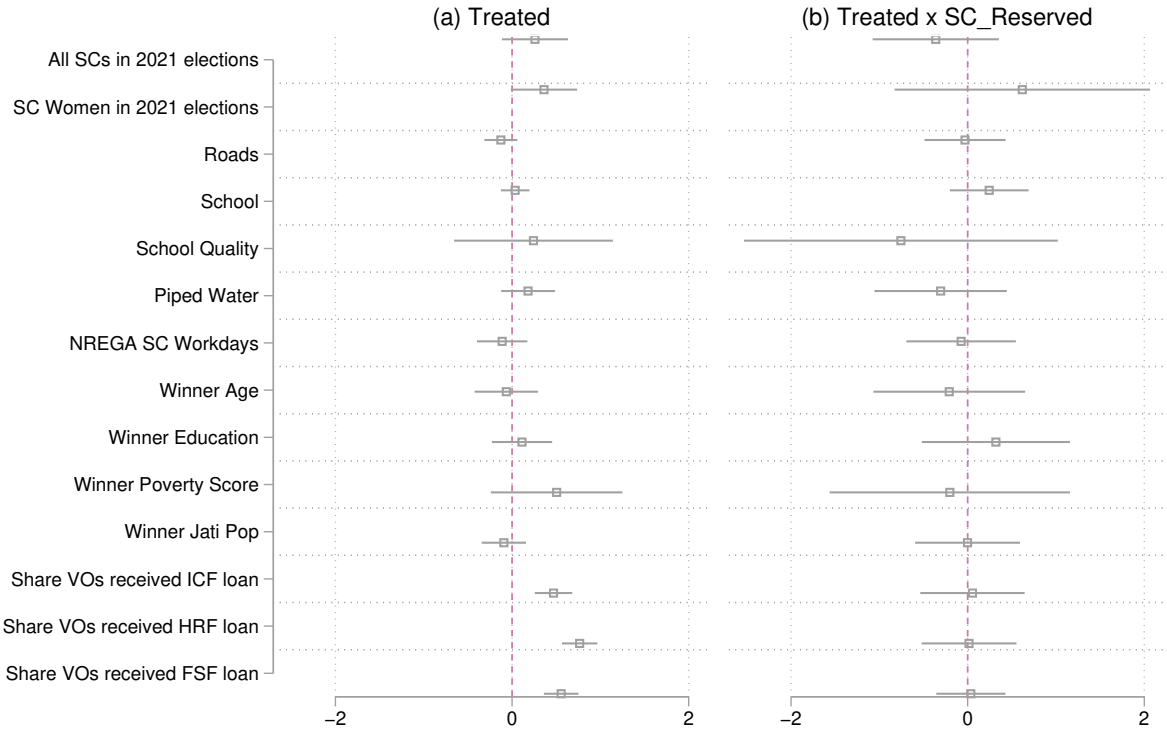
Table 3: Member and Leader Match rates

	Panel A: Members (Match Rates)			
	(1)	(2)	(3)	(4)
Treated	8.662**	11.496**	4.691	9.128
	(4.228)	(5.203)	(4.886)	(6.296)
SC_Reserved			-8.980	-29.166***
			(6.310)	(8.011)
Treated X SC Reserved			16.285*	22.986*
			(9.235)	(12.393)
Observations	625	459	625	459
Sample	Male Cand HH	Female Cand HH	Male Cand HH	Female Cand HH
Control Mean	32.9	39.6	0.7	39.6

	Panel B: Leader (Match Rates)			
	(1)	(2)	(3)	(4)
Treated	4.994**	6.071**	4.032*	6.911**
	(2.081)	(2.801)	(2.214)	(3.185)
SC_Reserved			-1.812	-2.587
			(2.585)	(5.313)
Treated X SC Reserved			3.840	-0.971
			(3.992)	(6.960)
Observations	740	543	740	543
Sample	Male Cand Leader HH	Fem Cand Leader HH	Male Cand Leader HH	Fem Cand Leade
Control Mean	4.4	6.1	4.4	6.1

Notes: The table shows the difference in match rates between treatment and control GPs between the SECC and SHG members in the RCT sample. We show results for a matching score of 0.99 and match rates are multiplied by 100. We distinguis SECC households as having a male or female candidate running. Panel A shows results for SHG members. Col. 1 shows the difference in SHG member and father/husband match to male candidate household between treatment and control. Col.2 shows this for matches with female candidate households. Cols. 3 and 4 shows the same differences but includes SC reserved GPs. Panel B shows the same regressions but only for SHG leaders. All regressions include block fixed effects and robust standard errors are shown in brackets.

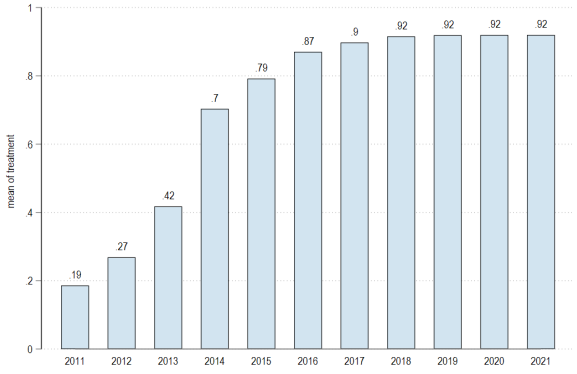
Figure 2: Downstream Outcomes



Notes: The left panel shows estimation of the earlier introduction of SHGs (Treated) and the right panel shows the interaction term of earlier introduction with SC Reservation (Treated x SC Reserved). The outcome variables are all standardized. Outcomes include the number of SCs and SC women that ran in the 2021 local elections, measures of the presence and coverage of roads, schools, school quality, and piped water by 2019, participation by SCs in NREGA between 2017 and 2020, characteristics of winners (standardized) and share of VOs in GPs that had received various SHG program loans by 2024. All regressions include village controls including GP total and SC population, area, and distance to the district headquarter, as well as if the GP was reserved in the past for women. The left figure includes strata fixed effects and the right figure includes block fixed effects. Robust standard errors are shown in brackets.

VIII. ONLINE APPENDIX

Figure A1: Percentage of villages reached by the SHG program (2011-2021)



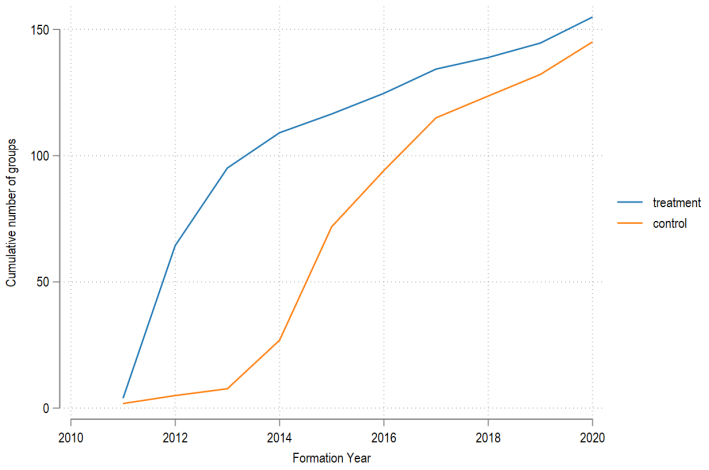
Notes: Total GPs in Bihar state = 8,392 (Census 2011). Data source: SHG program administrative data.

Table A1: Number of female and SC candidates running for local elections in 2016

	Num female candidates	Num SC candidates	Num GPs
Reserved for women in 2016	10.9	2.6	3,720
	(6.3)	(5.2)	
Reserved for SC in 2016	5.2	13.5	1,377
	(7.5)	(6.3)	
Reserved for OBC in 2016	5.3	0.0	1,416
	(7.6)	(0.2)	
Unreserved in 2016	0.1	0.9	2,879
	(1.1)	(1.5)	

Notes: 557 and 573 GPs have both women + SC and women + OBC reservations respectively. Data source: 2016 GP Elections administrative data.

Figure A2: Evolution of Groups in RCT sample



Notes: The figure shows the evolution of SHGs across treatment and control GPs. Eighty nine treatment GPs randomly assigned to receive the SHG program in 2012, 90 control GPs received program in 2014.

Table A2: Number of SC and ST candidates running in treatment GPs in the 2016 local elections

	Panel A: All SCs and STs		
	(1)	(2)	(3)
	RCT	IV	RCT Het
Treated	2.623**		0.170
	(1.025)		(0.370)
# of Groups		0.054***	
		(0.017)	
SC_ST_Reserved			13.295***
			(1.024)
Treated X SCST Reserved			2.872*
			(1.642)
Observations	179	179	179
Fixed Effects	Strata	Strata	Block
Control Mean	2.79	2.79	2.79
	Panel B: SC ST Women		
	(1)	(2)	(3)
	RCT	IV	RCT Het
Treated	1.607**		0.162
	(0.688)		(0.364)
# of Groups		0.033***	
		(0.011)	
SC_ST_Reserved			3.953***
			(1.334)
Treated X SCST Reserved			4.120*
			(2.286)
Observations	179	179	179
Fixed Effects	Strata	Strata	Block
Control Mean	1.00	1.00	1.00

Notes: The outcome variable is the number of SC and ST candidates in Panel A and SC and ST Women candidates in Panel B. Cols 1 shows the results for the RCT. Col 2 shows the number of groups in 2016 instrumented using the *Treated* instrument. Col 3 shows results using the SC or ST reservation indicator in 2016 and the interaction with earlier SHG rollout. All regressions include village controls including GP total and SC and ST population, area, and distance to the district headquarter controls, as well as if the GP was reserved in the past for women. Robust standard errors are shown in brackets.

Table A3: Number of Women candidates running in treatment GPs in the 2016 local elections

	(1)	(2)	(3)	(4)
	RCT	IV	RCT Unreserved	RCT Het
Treated	-0.345		-0.094	
	(1.011)		(0.303)	
# of Groups		-0.007		
		(0.015)		
1.Treatment				0.073
				(0.444)
Women_Reserved				10.231***
				(0.919)
Treated X Women Reserved				1.305
				(1.320)
Observations	179	179	62	179
Fixed Effects	Strata	Strata	None	Block
Sample	All	All	All Unreserved	All
Control Mean	6.22	6.22	1.20	6.22

Notes: The outcome variable is the number of female candidates. Col 1 shows the results for the RCT. Col 2 shows the number of groups in 2016 instrumented using the *Treated* instrument. Col 3 shows results for the sample excluding GPs reserved for SCs, OBCs and Women in 2016. Col 4 shows results using the Women reservation indicator in 2016 and the interaction with earlier SHG rollout. Fixed Effect denotes whether the paired RCT strata or block fixed effects were used. All regressions include village controls including GP total and SC population, area, and distance to the district headquarter controls, as well as if the GP was reserved in the past for women. Robust standard errors are shown in brackets.

Table A4: Number and Characteristics of Candidates running in SC and Female Reserved GPs in the 2016 local elections

	(1)	(2)	(3)	(4)
	SC Women	Education	Asset Score	Jati Population
Treated	-0.075	0.168	0.132	-0.032
	(0.195)	(0.156)	(0.150)	(0.149)
SC_Fem_Reserved	10.860***	-0.280	0.167	0.042
	(1.485)	(0.604)	(0.765)	(0.564)
Treated X SC Fem Reserved	4.599**	-0.764	-0.973	-0.259
	(2.208)	(0.659)	(0.817)	(0.632)
Observations	179	179	175	179
Fixed Effects	Block	Block	Block	Block
Sample	All	All	All	All
Control Mean	2.74	6.47	0.72	6.80

Notes: The outcome variable is the number of SC female candidates in Col 1. Col 2-4 shows the standardized years of education, the standardized asset based poverty score for candidates and the standardized log of Jati population. The poverty score is calculated by matching candidates to the SECC data and based on principal components analysis of households assets, which is subsequently aggregated to the GP level. The non-standardized means for the outcome variables is shown in the last row of the table. All regressions include village controls including GP total and SC population, area, and distance to the district headquarter controls, as well as if the GP was reserved in the past for women. Robust standard errors are shown in brackets.

Table A5: Number of SC and SC Women candidates running in treatment GPs in the 2021 local elections

	All SCs				
	(1)	(2)	(3)	(4)	(5)
	RCT	IV	RCT Unreserved	RCT Het	RD-RCT
Treated	0.772		-0.135		0.099
	(0.559)		(0.241)		(0.216)
num_groups_2020		0.141			
		(0.163)			
1.Treatment				0.032	
				(0.182)	
SC_Reserved				7.512***	
				(0.848)	
Treated X SC Reserved				-1.075	
				(1.076)	
Treated X SC Reserved					-1.001
					(1.325)
Observations	167	167	59	167	167
Fixed Effects	Strata	Strata	None	Block	Block
Sample	All	All	All Unreserved	All	All
Control Mean	1.48	1.48	0.54	1.48	1.48
	SC Women				
	(1)	(2)	(3)	(4)	(5)
	RCT	IV	RCT Unreserved	RCT Het	RD-RCT
Treated	0.722*		0.045		-0.069
	(0.377)		(0.209)		(0.185)
num_groups_2020		0.132			
		(0.137)			
1.Treatment				0.073	
				(0.170)	
SC_Reserved				2.564**	
				(1.042)	
Treated X SC Reserved				1.236	
				(1.461)	
Treated X SC Reserved					1.145
					(1.034)
Observations	167	167	108	167	167
Fixed Effects	Strata	Strata	Strata	Block	Block
Sample	All	All	Caste Unreserved	All	All
Control Mean	0.55	0.55	0.19	0.55	0.55

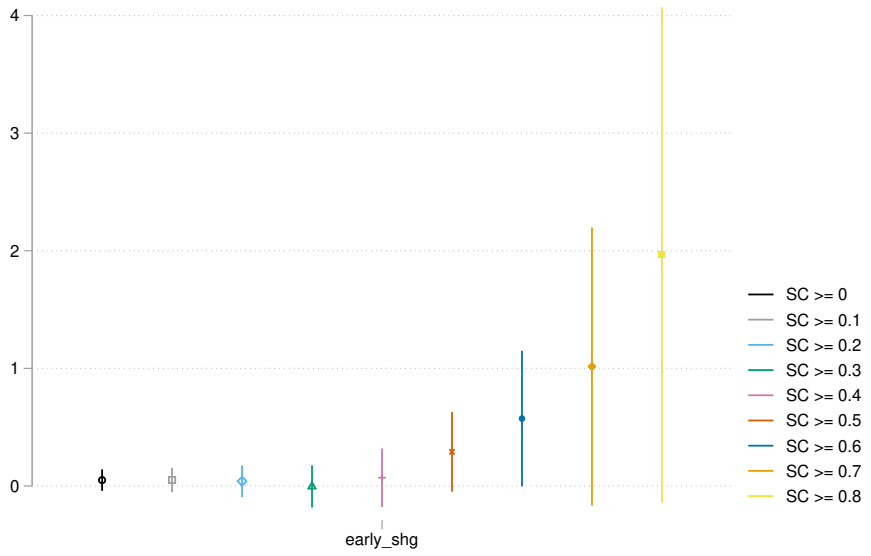
Notes: The outcome variable in the top panel is the number of SC candidates running in the local village elections in 2021. The bottom panel shows the same regressions with SC women as the outcome variable. Col 1 shows the results for the RCT. Col 2 shows the number of groups in 2020 instrumented using the *Treated* instrument. Col 3 shows results for the sample excluding GPs reserved for SCs, OBCs and Women in 2016. Col 4 shows results using the SC reservation indicator in 2016 and the interaction with earlier SHG rollout. Col 5 shows the results from the RD-RCT specification i.e. shows the coefficient on the interaction term above the SC reservation cutoff. Fixed Effect denotes whether the paired RCT strata or block fixed effects were used. All regressions include village controls including GP total and SC population, area, and distance to the district headquarter controls, as well as if the GP was reserved in the past for women. Robust standard errors are shown in brackets.

Table A6: Non-SC candidates running in treatment GPs and SC candidates running in treatment Wards

	(1) Total Cand	(2) All Non-SC	(3) Non-SC Women	(4) All SC Ward	(5) SC Ward Women
Treated	0.402	-1.719	-1.546	-0.002	0.046
	(0.709)	(1.048)	(1.067)	(0.061)	(0.045)
Observations	179	179	179	1435	1435
Fixed Effects	Strata	Strata	Strata	Block	Block
GP Controls	Yes	Yes	Yes	Yes	Yes

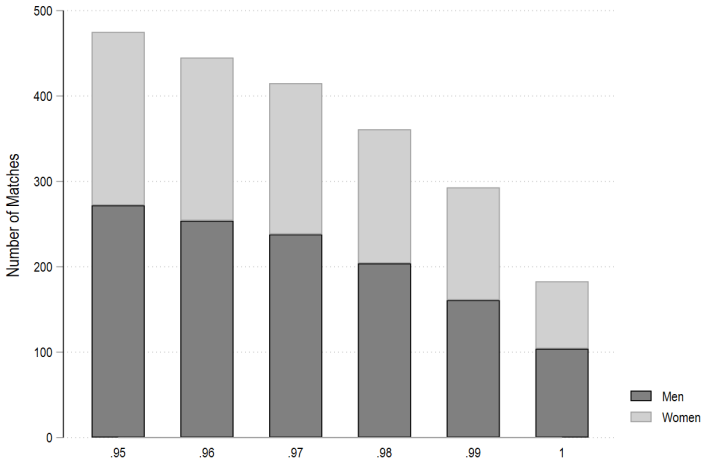
Notes: The outcomes are Total Candidates, all other Non-SC candidates, and all other Non-SC Women candidates in Cols 1, 2, and 3 respectively. *Treated* is an indicator variable for GPs where SHGs were randomly introduced earlier in 2012. Cols 4 and 5 are regressions run at the Ward level where the SC population is atleast 1. The outcomes are all SC candidates and all SC Women candidates running in the Ward elections. All regressions include GP controls and Strata or Block fixed effects. Cols 1-3 includes robust standard errors, and errors are clustered at the GP level in Cols 4 and 5.

Figure A3: SC Women participation in Ward Elections (by baseline SC share)



Notes: The outcome variable is the number of SC Women running in Wards. The figure shows the coefficient on earlier introduction of SHGs in samples restricted to wards with varying SC population shares. All regressions control for baseline village characteristics, and include block fixed effects and errors clustered at the GP level.

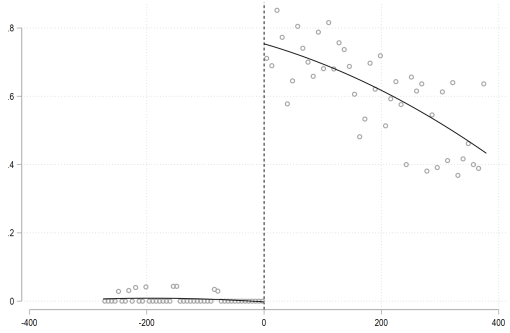
Figure A4: Total Matches by Threshold (In Treatment GPs)



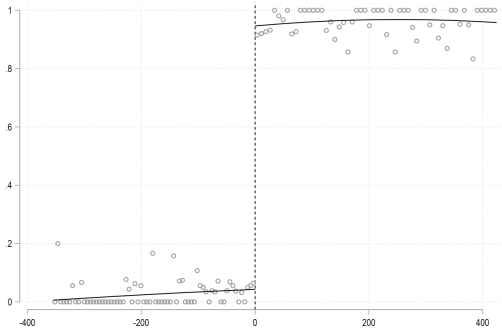
Notes: The figure shows the number of matches for females and males between candidate households in the the SECC data and SHG member data. The X-axis shows the matching score thresholds above which we consider the names to be a match. The process for a successful match is as follows: we first restrict SECC data to candidate households, then both female member from SHG and father/husband name needs to match to a household in the SECC, and finally the SHG formation date for female member match needs to be in 2015 and earlier.

Figure A5: Block level population based reservations

(a) SC reservations

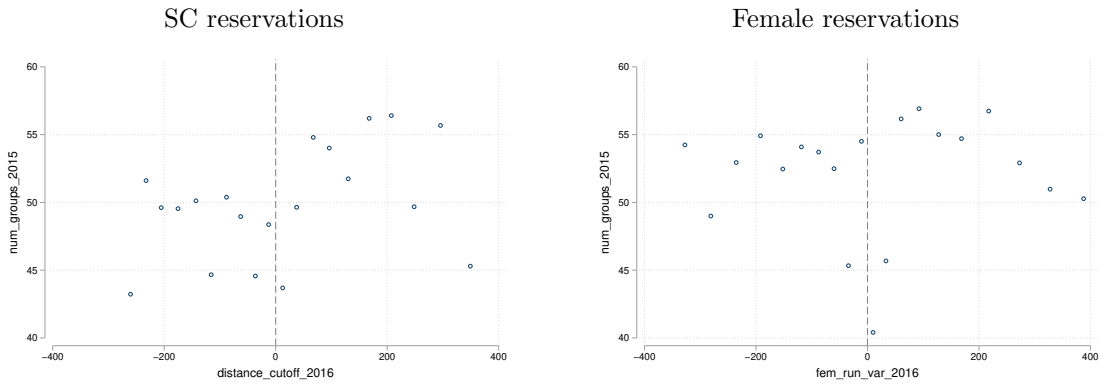


(b) Female reservations



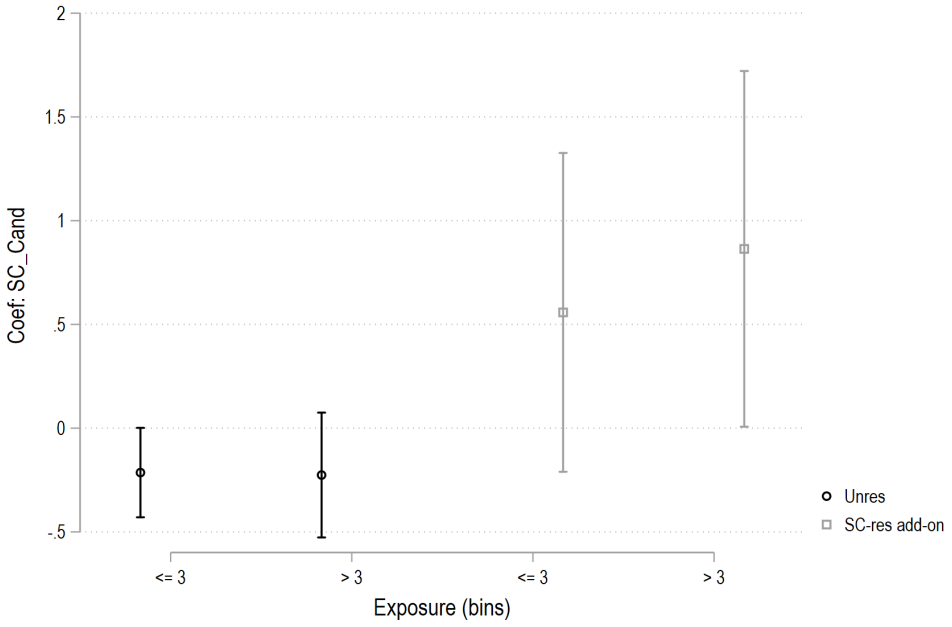
Notes: Panel (a) shows probability of GP a being reserved for SCs in the 2016 elections; the SC population of a GP has been normalized by the block-level threshold SC population. Panel (b) shows probability of GP a being reserved for women in the 2016 elections; the population of a GP has been normalized by the block-level threshold population. Both figures show a clear jump in the probability of reservation once the threshold is crossed.

Figure A6: Number of SHGs in 2015 around the SC and Female reservation cutoff



Notes: Figure shows average number of SHGs formed by 2015 above and below the SC and female reservation cutoffs.

Figure A7: RD at the SC-reservation cutoff: SC candidates (optimal bandwidth)



Notes: The figure shows local RD estimates of the number of Scheduled Caste (SC) candidates in the 2016 GP elections around the SC-reservation cutoff. The running variable is the GP's distance to the SC-reservation threshold in 2016; positive values indicate GPs reserved for SC. The optimal bandwidth is 500.95. Points and fitted lines are based on the specification in the text, with block fixed effects and robust standard errors. Units on the y-axis are candidates. Sample restricted to $|\,\text{distance}\,| < 500.95$.

Table A7: Candidate Characteristics

	Panel A: Index and Education					
	(1)	(2)	(3)	(4)	(5)	(6)
	Index	Index	Index	Edu	Edu	Edu
Treated X SC Reserved	-0.474			-0.329		
	(0.374)			(0.323)		
Groups X SC Reserved		-0.693**			-0.642***	
		(0.322)			(0.244)	
of Groups (Instrumented) X SC Reserved			-0.929			-0.699
			(0.587)			(0.553)
Observations	175	175	175	179	179	179
Fixed Effects	Block	Block	Block	Block	Block	Block
Control Mean	-0.08	-0.08	-0.08	-0.00	-0.00	-0.00
	Panel B: Asset Score and Jati					
	(1)	(2)	(3)	(4)	(5)	(6)
	Asset	Asset	Asset	Jati	Jati	Jati
Treated X SC Reserved	-0.497			-0.089		
	(0.393)			(0.328)		
Groups X SC Reserved		-0.385			-0.417	
		(0.345)			(0.260)	
of Groups (Instrumented) X SC Reserved			-0.976			-0.144
			(0.651)			(0.587)
Observations	175	175	175	179	179	179
Fixed Effects	Block	Block	Block	Block	Block	Block
Control Mean	-0.00	-0.00	-0.00	0.00	0.00	0.00

Notes: The outcome variables in Panel (a) is a standardized index of all 3 characteristics (Education, Asset Score, Jati Population) and standardized years of education. The outcome variables in Panel (b) are the standardized asset based poverty score for candidates and the standardized log of Jati population. The poverty score is calculated by matching candidates to the SECC data and based on principal components analysis of households assets, which is subsequently aggregated to the GP level. Only the interaction term between reservation and SHG terms as well as the instrumented interaction term are shown. The SHG variable is an indicator for early treatment GPs or number of groups formed by 2015 or an instrumented version of the number of groups. The coefficient for the number of groups is scaled by 100. All regressions include GP and female reservation controls and block fixed effects with robust standard errors.

Table A8: Match Rates of SHG Members and Leaders with Female Candidates (Full Sample)

Category	**Count/ Match Rate**	**Formula**
Total SHG Members	2,758,505	
SHG Members Matched to Candidates	2,359	
Total SHG Leaders	30,515	
SHG Leaders Matched to Candidates	199	
Total Candidates	41,745	
Match Rate within SHG Members	0.08%	$\frac{\text{SHG Members Matched to Candidates}}{\text{Total SHG Members}}$
Match Rate within SHG Leaders	0.65%	$\frac{\text{SHG Leaders Matched to Candidates}}{\text{Total SHG Leaders}}$
Match Rate among Candidates (SHG Members)	5.65%	$\frac{\text{SHG Members Matched to Candidates}}{\text{Total Candidates}}$
Match Rate among Candidates (SHG Leaders)	0.48%	$\frac{\text{SHG Leaders Matched to Candidates}}{\text{Total Candidates}}$

Table A9: Match Rates of SHG Members and Leaders with Female Candidates (RCT Sample)

Category	**Count/ Match Rate in Treatment**	**Count/ Match Rate in Control**	**Formula**
Total SHG Members	71,574	54,492	
SHG Members Matched to Candidates	51	34	
Total SHG Leaders	894	294	
SHG Leaders Matched to Candidates	8	0	
Total Candidates	452	539	
Match Rate within SHG Members	0.071%	0.062%	$\frac{\text{SHG Members Matched to Candidates}}{\text{Total SHG Members}}$
Match Rate within SHG Leaders	0.89%	0.0%	$\frac{\text{SHG Leaders Matched to Candidates}}{\text{Total SHG Leaders}}$
Match Rate among Candidates (SHG Members)	11.3%	6.3%	$\frac{\text{SHG Members Matched to Candidates}}{\text{Total Candidates}}$
Match Rate among Candidates (SHG Leaders)	1.8%	0.0%	$\frac{\text{SHG Leaders Matched to Candidates}}{\text{Total Candidates}}$

Table A10: Characteristics of candidates in the 2016 elections that did not match and those that matched to SHG members

	(1) Did not match		(2) Matched		T-test Difference
Variable	N	Mean/SE	N	Mean/SE	(1)-(2)
OBC	39187	0.523	2558	0.387	0.136***
		(0.003)		(0.010)	
Other	39187	0.243	2558	0.075	0.168***
		(0.002)		(0.005)	
SC	39187	0.224	2558	0.530	-0.306***
		(0.002)		(0.010)	
ST	39187	0.011	2558	0.009	0.002
		(0.001)		(0.002)	
Years of Education	38966	4.749	2538	4.840	-0.091
		(0.025)		(0.100)	
Age	39173	39.155	2558	39.306	-0.151
		(0.055)		(0.211)	
F-test of joint significance (F-stat)					265.185***
F-test, number of observations					41490

Notes: The value displayed for t-tests are the differences in the means across the groups. The value displayed for F-tests are the F-statistics. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table A11: Characteristics of candidates in the 2016 elections that did not match and those that matched to the SECC data

	(1) Did not match		(2) Matched		T-test Difference
Variable	N	Mean/SE	N	Mean/SE	(1)-(2)
OBC	646	0.571	1060	0.543	0.028
		(0.019)		(0.015)	
Other	646	0.022	1060	0.002	0.020***
		(0.006)		(0.001)	
SC	646	0.232	1060	0.283	-0.051**
		(0.017)		(0.014)	
ST	646	0.175	1060	0.172	0.003
		(0.015)		(0.012)	
Years of Education	640	6.183	1057	6.650	-0.467*
		(0.221)		(0.171)	
Age	645	39.932	1058	41.457	-1.525***
		(0.454)		(0.351)	
F-test of joint significance (F-stat)					6.727***
F-test, number of observations					1694

Notes: The value displayed for t-tests are the differences in the means across the groups. The value displayed for F-tests are the F-statistics. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table A12: Downstream outcomes in treatment SHGs: Winners

	(1) Woman	(2) Age	(3) Education	(4) Poverty Score	(5) Jati_Pop_log
Treated	-0.055	-0.421	0.693	0.227	0.056
	(0.080)	(1.810)	(0.940)	(0.496)	(0.308)
Observations	176	176	174	88	139
Control Mean	7.53	7.53	7.53	1.00	0.64

Notes: The table shows differences in Treated and Control GPs only for the winner. The outcome variables are characteristics of winners such as Gender, Age, Education, Poverty and Jati size. All regressions include village controls including GP total and SC population, area, and distance to the district headquarter, as well as if the GP was reserved in the past for women. The regression also includes block fixed effects and robust standard errors are shown in brackets.

Table A13: Downstream outcomes in treatment GPs: Public Goods and NREGA

	(1) Total Roads	(2) Total schools	(3) School Quality	(4) Tap water	(5) NREGA SC workdays
Treated	-0.529	0.197	34.329	0.097	-1343.014
	(0.435)	(0.424)	(59.343)	(0.066)	(1617.818)
SC_Reserved	-0.057	-1.029	-2.358	0.034	435.253
	(0.779)	(0.888)	(25.922)	(0.127)	(2971.783)
Treated X SC Reserved	-0.134	1.143	-83.129	-0.125	-882.047
	(1.049)	(1.056)	(98.900)	(0.155)	(3753.250)
Observations	179	179	178	178	179
Fixed Effects	Strata	Strata	Strata	Strata	Strata
GP Controls	Yes	Yes	Yes	Yes	Yes

Notes: The table shows differences in the match rates for a matching score of 0.99. Col 1. shows that father/husband of SHG members and leaders between SECC and SHG treatment and control GPs.

Table A14: Downstream outcomes in treatment SHGs: Access to Loans

	(1) ICF	(2) HRF	(3) FSF
Treated	0.101***	0.247***	0.184***
	(0.024)	(0.035)	(0.030)
SC_Reserved	-0.059	0.030	-0.068
	(0.055)	(0.070)	(0.043)
Treated X SC Reserved	0.012	0.005	0.011
	(0.067)	(0.090)	(0.062)
Observations	175	175	175
Fixed Effects	Block	Block	Block
GP Controls	Yes	Yes	Yes
Control Mean	0.76	0.36	0.56

Notes: Cols 1-3 shows the share of SHGs that have received 3 different kinds of loans by 2024. In Col 1, the outcome is the share that have received the Initial Capitalization Fund. In Col 2 the outcome is the Health Rish Fund. In Col 3, the outcome is the share that have received the Food Security Fund. All columns show results using the SC reservation indicator ($SC\_Reserved$) in 2016 and the interaction with earlier SHG rollout ($Treated$). All regressions include village controls including GP population, area, and distance to the district headquarter controls, block fixed effects, and robust standard errors shown in brackets. All columns show the the control group mean at the bottom.

Table A15: Balance on GPs with different levels of exposure (Census 2011)

Variable	(1) Below 3 yrs	(2) Above 3 Yrs	(3) Difference
GP population (2001 Census)	8,975.093	9,384.815	592.094***
	(3,231.849)	(3,564.613)	(143.706)
SC population share (2001 Census)	0.142	0.158	0.002
	(0.062)	(0.070)	(0.002)
Number of villages in GP (2001 Census)	5.468	5.070	0.063
	(4.005)	(4.778)	(0.144)
GP total area (sq km), 2001	1,072.112	1,058.793	20.047
	(866.132)	(734.571)	(30.001)
Distance to District Headquarters (km), 2001	32.235	30.894	-0.600**
	(18.331)	(18.394)	(0.296)
Distance to Nearest Statutory Town (km), 2001	19.897	21.140	-0.708***
	(12.859)	(13.892)	(0.272)
Total Educational Facilities (Census 2001)	3.563	3.330	-0.032
	(1.903)	(1.985)	(0.073)
Primary Health Sub Centres (Census 2001)	0.397	0.464	0.033
	(0.655)	(0.679)	(0.027)
Post Office (Census 2001)	1.015	1.025	-0.023
	(0.808)	(0.777)	(0.035)
Bank Facilities (Census 2001)	0.329	0.333	0.026
	(0.590)	(0.620)	(0.027)
Power Supply (Census 2001)	1.713	1.798	0.026
	(1.895)	(1.890)	(0.069)
Paved Road (Census 2001)	1.865	1.771	-0.010
	(1.744)	(1.618)	(0.069)
Mud Road (Census 2001)	4.079	3.854	-0.029
	(2.817)	(3.424)	(0.105)
Child Welfare Centre (Census 2001)	0.057	0.064	0.021
	(0.398)	(0.527)	(0.018)
Bus facilities (Census 2001)	0.552	0.534	0.017
	(0.954)	(0.917)	(0.039)
Mean Village Income (Census 2001)	607661.000	274177.781	-75361.797
	(9.473e+06)	(3.014e+06)	(347856.562)
Mean Village Income (Census 2001)	613401.875	206396.344	-4.473e+05
	(1.348e+07)	(2.302e+06)	(502857.781)
Middle School Facility (Census 2001)	1.159	1.213	0.036
	(1.019)	(1.031)	(0.044)
Medical Facility (Census 2001)	0.897	0.881	0.008
	(1.102)	(0.968)	(0.042)
Tap Water (Census 2001)	0.149	0.131	0.015
	(0.565)	(0.605)	(0.024)
Well (Census 2001)	0.815	0.814	0.029**
	(0.388)	(0.389)	(0.014)
Tank (Census 2001)	0.558	0.450	-0.064
	(1.305)	(1.368)	(0.049)
Phone Lines (Census 2001)	2.456	3.373	0.970**
	(9.223)	(11.576)	(0.430)
Observations	3,675	1,635	5,310

Table shows balance between GPs exposed for under 3 years with GPs exposed for greater than 3 years within the RD bandwidth on census 2011 variables.

Table A16: Balance on GPs with different levels of exposure (Census 2011)

Variable	(1) No exposure	(2) Below 3 Yrs	(3) Difference
GP population (2001 Census)	10,945.496	8,975.093	-1,554.358***
	(6,172.084)	(3,231.849)	(141.418)
SC population share (2001 Census)	0.131	0.142	0.005***
	(0.069)	(0.062)	(0.002)
Number of villages in GP (2001 Census)	4.406	5.468	0.732***
	(3.959)	(4.005)	(0.111)
GP total area (sq km), 2001	1,319.036	1,072.112	-266.500***
	(1,283.827)	(866.132)	(29.674)
Distance to District Headquarters (km), 2001	32.079	32.235	-0.927***
	(17.603)	(18.331)	(0.245)
Distance to Nearest Statutory Town (km), 2001	21.957	19.897	-1.440***
	(14.247)	(12.859)	(0.225)
Total Educational Facilities (Census 2001)	2.922	3.563	0.425***
	(1.902)	(1.903)	(0.058)
Primary Health Sub Centres (Census 2001)	0.454	0.397	-0.070***
	(0.771)	(0.655)	(0.023)
Post Office (Census 2001)	1.057	1.015	-0.053*
	(0.853)	(0.808)	(0.028)
Bank Facilities (Census 2001)	0.353	0.329	-0.017
	(0.629)	(0.590)	(0.022)
Power Supply (Census 2001)	1.325	1.713	0.424***
	(1.644)	(1.895)	(0.053)
Paved Road (Census 2001)	1.353	1.865	0.477***
	(1.402)	(1.744)	(0.054)
Mud Road (Census 2001)	3.522	4.079	0.506***
	(2.929)	(2.817)	(0.081)
Child Welfare Centre (Census 2001)	0.063	0.057	-0.020
	(0.597)	(0.398)	(0.015)
Bus facilities (Census 2001)	0.444	0.552	0.084***
	(0.758)	(0.954)	(0.030)
Mean Village Income (Census 2001)	121485.547	607661.000	429669.094
	(1.581e+06)	(9.473e+06)	(284954.125)
Mean Village Income (Census 2001)	107648.625	613401.875	290147.125
	(1.523e+06)	(1.348e+07)	(405729.531)
Middle School Facility (Census 2001)	1.300	1.159	-0.165***
	(1.216)	(1.019)	(0.036)
Medical Facility (Census 2001)	0.795	0.897	0.039
	(0.927)	(1.102)	(0.033)
Tap Water (Census 2001)	0.136	0.149	-0.032*
	(0.476)	(0.565)	(0.018)
Well (Census 2001)	0.817	0.815	-0.010
	(0.386)	(0.388)	(0.011)
Tank (Census 2001)	0.522	0.558	0.046
	(1.278)	(1.305)	(0.039)
Phone Lines (Census 2001)	5.633	2.456	-1.714***
	(37.696)	(9.223)	(0.652)
Observations	1,472	3,675	5,147

Table shows balance between GPs never exposed to SHGs and those exposed for under 3 years within the RD bandwidth on census 2011 variables.

Table A17: Downstream Outcome Description

Variable	Description	Source	Year
All SCs	Number of SC candidates running in the 2021 local elections	Bihar Elections	2021
SC Women	Number of Women SC candidates running in the 2021 local elections	Bihar Elections	2021
Roads	Total roads available in GP from 2 variables that measure the extent to which the village is connected by all weather roads and there are internal gravel roads	Mission Antyodaya	2019
Schools	Total number of schools including primary, middle, high, and senior secondary schools	Mission Antyodaya	2019
School Quality	Total of if primary school has electricity, computer, playground, drinking water, mid day meal scheme, and number of teachers	Mission Antyodaya	2019
Piped Water	Share of GP connected with piped water	Mission Antyodaya	2019
NREGA SC workdays	Number of workdays completed by SC individuals in GP between 2017-2020	NREGA MIS	2017-2020
Share of VOs received ICF	SHGs are eligible to receive an Initial Capitalization Fund (ICF) of $625 after they have conducted meetings and save regularly for atleast 6 months	SHG MIS	2024
Share of VOs received HRF	The Health Risk Fund (HRF) is made available to SHG members to borrow from at low interest rates in the case of a health emergencies	SHG MIS	2024
Share of VOs received FSF	The Food Security Fund (FSF) is typically used to make purchases of subsidized food rations	SHG MIS	2024

IX. Power and Minimum Detectable Effects

To assess the sensitivity of our main experimental design, we compute minimum detectable effects (MDEs) using the residual standard deviations from regressions that absorb the original pairwise randomisation strata. This ensures that our power calculations correspond exactly to the specification used in the paper. Using the 179 GPs in the experiment (89 treated, 90 control), the residual variance after absorbing strata fixed effects is modest for all three key outcomes: the residual standard deviation is 4.88 for the number of Scheduled Caste (SC) candidates, 4.42 for the number of women candidates, and 2.79 for the number of SC women candidates. Plugging these into standard two-sample power calculations (with a significance level of 0.05, two-sided, and power of 0.80), we find that the design can detect differences of 2.06 SC candidates, 1.86 women candidates, and 1.17 SC women candidates per GP. Given typical magnitudes in the literature on political entry (Gulzar, Haas, and Pasquale 2023, Pande 2003), these detectable effects are quite reasonable. We therefore conclude that the experiment is well powered to detect meaningful treatment effects for our main outcomes of interest.

X. Matching description

A. Matching SECC to candidates

Matching Methodology We matched data on all candidates (N=2108) in the RCT sample of 179 GPs with data on all citizens using the 2012 Socioeconomic Caste Census (SECC). Candidates were string matched to citizens based on characteristics, including name, guardian's name, age, caste, and sub-caste (proxied by last name).

Match Rates We were able to match with high confidence (i.e., matching scores above 0.98) 1287 out of 2108 candidates, yielding a match rate of 61%.

B. Matching SHG member details to candidates

Matching Methodology We obtained SHG membership data for 5,393 of the 6,124 GPs where at least one woman contested the 2016 local elections. This restricted our candidate sample to 41,745 female candidates out of the total of 47,101 female candidates. We matched on name, father's or husband's name, and caste category to obtain a matching score. We used a high threshold of 0.98 on the matching score to determine successful matches.

Match Rates Overall, we match 2,359 of the 2,758,505 SHG members (excluding leaders) from 2015 to candidate lists, yielding a match rate of 0.08%. For higher-level SHG leaders (Presidents and Secretaries of VOs and CLFs), we match 199 of 30,515 individuals, corresponding to a match rate of 0.65%.

In the RCT sample, 991 female candidates contested elections in 137 of the 189 GPs.[17] The match rate in treated GPs for SHG members is 0.071% and for SHG leaders is 0.89%.

Tables Showing Match Rates See Table A8 for match rates in the full sample, and Table A9 for match rates in the RCT sample. Table A10 shows that candidates who matched with SHG members, and those who did not, are similar in demographics such as age and education and only differ on caste (since the SHG program targeted SC households).

17. This includes 63 treatment and 74 control GPs.

XI. A Simple Model of Political Entry

We develop a simple model of political entry to understand how SHGs and reservation policies influence the decision of SC households to contest GP and ward elections. The model is built on two main ideas. First, following (Dal Bó and Finan 2018), we treat a candidate's *valence*—a bundle of traits such as competence, reputation, and electability valued by all voters—as the key supply-side characteristic that interacts with electoral incentives. In our setting, a household's valence depends on its education, wealth, and the size of its vote base (proxied by sub-caste size).

Second, we argue that political entry is a household decision rather than an individual one. Research shows that political attitudes and participation are shaped within families, with support from household members playing a key role in fostering political ambition (Verba, Nie, and Kim 1978; Beck and Jennings 1982; Jennings and Niemi 1981; Fox and Lawless 2010). In South Asia, patriarchal norms further reinforce this pattern—men frequently make voting and candidacy decisions for the household, and political brokers often target families, not individuals (Prillaman 2023b). Running for office is a costly activity, and many households designate one member to take on this role, effectively dividing political labor (Burns, Schlozman, and Verba 2001). The prevalence of political dynasties, where multiple family members contest over time, underscores how households act as units of political investment and action (Cruz, Labonne, and Querubin 2017; Verma 2021; George 2024).[18]

This assumption is particularly relevant for SHGs, which are restricted to women members, but whose benefits—such as improved household savings, stronger community ties, and access to leadership positions—accrue to the household as a whole. This assertion is backed by our data where we see that across both treatment and control GPs, SHG-linked households field a slightly larger number of male as opposed to female candidates (see Figure A4), strongly suggesting that SHG benefits accrue beyond the woman member.

Thus, SHG participation can influence political entry decisions even when the SHG member herself is not the one contesting.

Determinants of valence. Household h is described by

$$(w_h,\ e_h,\ s_h,\ \mathrm{SC}_h,\ \mathrm{SHG}_h),$$

where w is wealth, e education, s sub-caste size/status, $\mathrm{SC}_h \in \{0,1\}$ indicates Scheduled-Caste identity, and $\mathrm{SHG}_h \in \{0,1\}$ indicates SHG membership. We summarise these attributes with a continuous *valence index*

$$v_h \;=\; g\big(w_h, e_h, s_h\big), \qquad g_w, g_e, g_s > 0, \quad v_h \in [0, \bar{v}]. \tag{8}$$

Higher wealth, schooling, or sub-caste size all raise valence; SHG membership and reservation affect political entry only through the probability of winning, not through v_h itself.

18. In the context of Bihar, the setting of this paper, this phenomenon has been discussed both theoretically and empirically in (Bamezai 2025).

Reservation indicator. Let $\theta \in \{0, 1\}$ equal 1 if the GP-head seat is reserved for SC candidates.

A. Entry Pay-off and Cut-off

Household h considers fielding a member. Entering the race yields expected utility

$$U_h \;=\; P\big(v_h, \theta, \mathrm{SHG}_h\big)\, B \;-\; C, \tag{9}$$

where $P(\cdot) \in (0, 1)$ is the probability of victory, $B > 0$ the benefit of holding office, and $C > 0$ a *fixed* campaign cost common to all households (independent of valence).[19] Let R denote the outside-option utility. Household h enters iff

$$P\big(v_h, \theta, \mathrm{SHG}_h\big)\, B \;\geq\; R + C. \tag{10}$$

Given monotonicity of P in valence, there exists a cut-off

$$v^*(\theta, \mathrm{SHG}) \;=\; \inf\Big\{v :\; P(v, \theta, \mathrm{SHG})\, B \geq R + C\Big\}, \tag{11}$$

so that all households with $v_h \geq v^*$ contest.

B. Effect of SHG Membership

SHGs benefit SC households through three distinct channels:

1. **Liquidity:** savings and credit facilities ease the burden of the fixed cost C.
2. **Networks and visibility:** wider interpersonal links—often crossing sub-castes—raise the perceived chance of electoral support, lifting P.
3. **Demonstrated leadership:** holding positions in the SHG hierarchy serves as a public signal of organisational ability, further raising P.

Formally, write

$$P(v, \theta, \mathrm{SHG} = 1) \;=\; P(v, \theta, 0) + \delta_P, \qquad \delta_P > 0.$$

Because C is fixed, the sole effect of SHGs is to *lower the entry threshold* in (11). In open GPs ($\theta = 0$), this reduction may be insufficient to offset the very low baseline winning probability faced by SC households, so gains in entry may be modest. As noted in the empirical context above, SC candidates in our experimental control GPs have virtually no electoral viability in caste-unreserved GP-head seats: none win, and fewer than 10% of candidates are SCs, irrespective of women's reservation. This suggests that SC-reserved seats are the settings where SHG-induced changes in costs or capabilities are most likely to translate into observable changes in candidacy.

19. The main predictions of the model hold even if we assume that campaign costs are increasing or decreasing in valence.

C. Effect of Reservation

SC reservation affects only the demand side of (10) by:

$$P(v, \theta = 1, \text{SHG}) \; > \; P(v, 0, \text{SHG}), \qquad C \text{ unchanged.}$$

Thus $v^*(1, \text{SHG}) < v^*(0, \text{SHG})$. More mid-valence SC households find it worthwhile to run even without SHG support.

D. Joint Effect: SHG $\times$ Reservation

With both mechanisms operating, the entry threshold is lowest:

$$v^*_{\text{SHG+R}} < v^*_{\text{R}} < v^*_{\text{SHG}} < v^*_{\text{baseline}}.$$

Define $\mathcal{E}^\pi$ as the set of entrants under policy $\pi \in \{\text{baseline}, \text{SHG}, \text{R}, \text{SHG+R}\}$. The marginal entrants triggered *only* by the interaction

$$\mathcal{M}^{\text{SHG+R only}} \; = \; \mathcal{E}^{\text{SHG+R}} \setminus \left(\mathcal{E}^{\text{SHG}} \cup \mathcal{E}^{\text{R}}\right)$$

will have the lowest wealth, schooling, and sub-caste size among all contestants—consistent with our empirical focus on poorer, less-educated, smaller-sub-caste candidates.

E. Ward-Level Variant

Ward constituencies are tiny and often caste-homogenous. In 2016, ward members in Bihar had virtually no authority. While every Panchayat elected around 13-14 ward members alongside one GP head, power was concentrated entirely in the head's office. Contemporary accounts describe ward members as excluded from information, resources, and decision-making (Sharan 2021). Ward members consistently emphasised the absence of financial powers as the key barrier to meaningful participation.[20]

Relative to GP-head contests ward elections feature

- **Low benefits:** $B^W \ll B$.
- **Low costs:** the fixed cost of canvassing a few hamlets is much smaller ($C^W < C$).
- **High baseline success for SCs:** $P^W(v) > P(v, 0)$.

20. As one Dalit ward member put it, "power ha[d] not been given to ward members. This [is] why [the] Mukhiya acts in an arbitrary manner. Ward members should be given financial and other powers for development work … development can pick up if financial powers are given to ward members." Another noted simply: "No Mukhiya … wants to share power with the other representatives in the Panchayati Raj system." (Sachchidananda 2007)

The entry rule mirrors (10) with B^W and C^W. Because the benefit is tiny while the winning chances are already high, the net effect on the ward-level threshold v^{*W} is *ambiguous*.

Empirically in Bihar the low-benefit channel appears to dominate, so v^{*W} remains high for many households. Consequently:

- Reservation produces little additional change: $v^{*W}(1) \approx v^{*W}(0)$ (wards are often caste homogeneous)
- An SHG bump δ_P seldom pulls new households across the threshold because most who could benefit are still far below v^{*W}.
- In wards where SCs are a very high share of the population, $P^W \to 1$, the increase in probability of victory and presence of SHG may overcome the low benefits and result in entry

F. Summary of Testable Predictions

- In treated GPs, SC candidacy in GP head elections increases; the increase is largest in *treated + Reserved* GPs.
  - Tested in section C.
- In treated GPs, new entrants are more marginalised: they are typically poorer, less educated, and drawn from smaller sub-castes than baseline candidates. These effects are strongest in *SHG + Reserved* GPs.
  - Tested in section A.
- In treated GPs and *SHG + Reserved* GPs, SHG leaders are more likely to enter than SHG members.
  - Tested in section B.
- SHG-linked households put forward both men and women as candidates. In treated GPs and *SHG + Reserved* GPs, more candidates come from SHG-linked households.
  - Tested in section B.
- In treated GPs and *SHG + Reserved* GPs, voter turnout increases.
  - Tested in section D.
- In treated GPs, entry effects in lower-tier ward elections are ambiguous. Where the benefits of entry are limited, entry remains unchanged.
  - Tested in table A6.

XII. Reservation rule Description

Bihar has reservation for SCs, STs, EBCs (*not* OBCs) and women. The rule for these is given below. The crucial takeaway from the sections below is that, focusing solely on SC reservation, there exists an SC population threshold below which no GP is reserved and above which a majority of GPs are reserved. Within this set of GPs, there exists another SC population threshold above which GPs are to be reserved for women. Note, also, that the rule for 2006 is fixed till 2016 (two election cycles), after which the reservation cycle switches Below, we describe the reservation algorithm for caste/gender, first for 2006 and then for 2016.

A. 2006

The reservation rule proceeds in the following manner:

- First, based on the proportion of SCs (STs) in the block, the number of GPs to be reserved for SCs (STs) is decided. If there are N_j GPs in block j and θ_j is the proportion of SCs (STs) in block j, then the number of GPs, n_j, to be reserved is

$$n_j = round(\theta_j * N_j, 1)$$

- Let n_{SC} and n_{ST} be the number of GPs to be reserved in block j for SCs and STs, respectively. The number of GPs to be reserved for EBCs is given by

$$n_{EBC} = min(round(0.2 * N_j, 1), round(0.5 * N_j - n_{SC} - n_{ST}, 1))$$

- If there are no STs in the block or n_{ST} is 0 (which is true in 480 of the 534 blocks), then the rule skips to the next step. However, if $n_{ST} > 0$, the rule proceeds by arranging all GPs in descending order of their ST population. The first GP in the list is then reserved for STs.
- Now, all remaining GPs are rearranged in the descending order of their non SCST population. The first GP on this truncated list is "blocked". The choice of word is deliberate and conveys an important distinction: the GP is not "reserved", it is merely blocked.
- Now, all unreserved and unblocked GPs are rearranged in descending order of their SC population. The first GP in this further truncated list is now reserved for SCs.
- This algorithm proceeds until the number of GPs reserved for STs = n_{ST} or the number reserved for SCs is n_{SC}. Once, a group hits its quota of reserved GPs, then the rearranging of GPs is no longer done by that group. For instance, if n_{ST} = 1, then, in the second round, GPs are no longer rearranged by ST population - instead, the rule proceeds straight to rearranging by non-SCST population.
- The algorithm further proceeds till the second group also hits its quota of reserved GPs. This throws up two sets of GPs, n_{ST} GPs that are reserved for STs and n_{SC} GPs that are reserved for SCs.

- Now, all the unreserved GPs (including the "blocked" ones) are collected and arranged by descending order of GP population.
- The first n_{EBC} GPs in this list is reserved for EBCs.
- Thus, for each block, one can arrive at an SC population cut-off - the SC population of the last GP to be reserved for SCs - below which no GP is reserved. This threshold varies by block. Figure **??** gives the first stage and shows that the first stage is robust to (a) adding block fixed effects (Panel (b)) and (b) dropping all ST/EBC reserved GPs.

A..1 Gender Reservation

- All the n_{SC} seats determined to be reserved for SCs within a block are arranged in descending order of SC population and *up to* 50% of them with the highest populations are reserved for SC women. For instance, if there are $n_{SC} = 3$, then 1 GP is reserved for SC women – the one with the highest SC population. On the other hand, if $n_{SC} = 4$, then 2 GPs are reserved for SC women – the top 2 highest SC population GPs.
- All the n_{ST} seats determined to be reserved for STs within a block are arranged in descending order of ST population and *up to* 50% of them with the highest ST populations are reserved for ST women.
- All the n_{EBC} seats determined to be reserved for EBCs within a block are arranged in descending order of total population and *up to* 50% of them with the highest total populations are reserved for EBC women.
- All the n_{GEN} seats determined to be caste unreserved within a block are arranged in descending order of non-SCST population and *up to* 50% of them with the highest non-SCST populations are reserved for women.

B. 2016

The reservation rule for 2016 proceeds in a similar manner to that of 2006, with two major changes. First, it changes the order in which GPs are arranged. In 2006, GPs were arranged first by STs, then non-SCSTs, then SCs. In 2016, GPs are arranged first by non-SCSTs, then by SCs, then by STs. Second, since there is no provision for recudrring reservation, no GP previously reserved for SCs (STs/EBCs) can again be reserved for the same. So, when GPs are arranged by descending order of population of a particular group, those previously reserved are struck off the list, even before the algorithm begins.