

Online appendix for Inclusive Reforms as Levers for Social Exclusion: The Paradoxical Consequences of Quotas for Women in Rural India

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Contents

Appendix A Quantitative data collection description	2
A.1 Dataset 1: Large-scale survey across rural Maharashtra	2
A.1.1 Sampling	2
A.1.2 Council president descriptives	3
A.1.3 Sampling notables	3
A.1.4 Description of The Group Meeting Structure & Survey	7
Appendix B Balance Across Quota and Non-quota Village Councils	9
Appendix C Sarpanches Demographics (Full Sample)	11

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A Quantitative data collection description

A.1 Dataset 1: Large-scale survey across rural Maharashtra

A.1.1 Sampling

We sampled 611 GPs across 5 districts of the state of Maharashtra, approximately 122 villages in each of these 5 districts.

We blocked on sarpanch reservations for gender and caste (for SC, OBC, and open sarpanches) as well as with the gender of the gram sevak (the main village bureaucrat, whose gender we were also interested in for a related project). We thus aimed for equal samples of gram panchayats (GPs) with each combination of these 3 traits. This means that we selected $3 \times 2 \times 2 = 12$ different types of gram panchayats, and aimed to do so equally within each district. This meant oversampling GPs reserved for OBCs and SCs, given that in Maharashtra 27% of the sarpanch seats within each block panchayat in each electoral period are to be reserved for members of the OBCs, while another 13% are reserved for SCs. This also meant oversampling GPs with female gram sevaks, which we approximate to be 20% of the total sampling frame. We were not oversampling female sarpanches per se, as 50% of GPs in Maharashtra are reserved for female candidates. Finally, note that we exclude GPs reserved for STs (7% of total GPs in Maharashtra).

Our sample included 5 districts, spread across four regions of Maharashtra. Given that our focus is on rural areas, we excluded the administrative region with the most dense urban center in India: Mumbai/Konkan. Out of the remaining regions, we planned to select districts with relatively high proportions of SC population (to enable oversampling of SC reservations, which are allocated based on population proportions), and relative proximity to urban centers (to assist in our oversampling of female gram sevaks, who are more likely to be sent to GPs at closer proximity to urban centers than to remote locales). In addition, we excluded from our sampling frame districts with above average proportions of STs (greater than 10%) to ensure that our exclusion of ST reserved seats (allocated by population proportion, as are SC reservations) would not significantly bias our sample given the district population distribution.

The five districts thus selected include Solapur (Paschim region), Pune (Paschim region), Aurangabad (Marathwada region), Amravati (Vidarbha region) and Ahmednagar (Nashik region). In each district we then identified the five talukas (subdistricts) with the largest absolute numbers of “rare” combinations within each district (in practice OBC and SC sarpanches paired with female gram sevaks).

Once these were selected, we next chose as close to 24 gram panchayats as possible in each taluka (since the total district $N = 24 \times 5 = 120$). Since the blocking strategy described above implies 12 different categories of gram panchayats to be equally sampled, we simply aimed at this stage to select 2 gram panchayats in each of the 12 categories to reach this total of 24 gram panchayats per taluka. If and when we were able to choose between more than two gram panchayats in a given category and taluka, we selected randomly. If and when there were fewer than two gram panchayats in a given category within a taluka, we first attempted to replace the “missing gram panchayats” by oversampling similar GPs (GPs from the same category) in another selected taluka in the same district. If and when we were

unable to do so, we replaced these missing gram panchayats with “open” category gram panchayats both with male and female gram sevaks within the taluk. As we proceeded, we made sure to minimize the difference in the number of GPs sampled across talukas (always maintaining between 18-30, with an average of 24).

A.1.2 Council president descriptives

Table B.1 provides information on key characteristics for the presidents (sarpanches) of the 611 villages (gram panchayats) in our sample. Given that we blocked on sarpanch reservations for gender and caste (for SC, OBC, and open sarpanches) as well as with the gender of the gram sevak (the main village bureaucrat, whose gender we were also interested in for a related project), aiming for equal samples of gram panchayats (GPs) with each combination of these 3 traits, we oversampled certain categories of Village Presidents. Most notably, our sample over-represents Village Presidents who are members of Scheduled Castes (SCs), who are one third of our sample. Given that half of GPs in Maharashtra are reserved for women, our requirement that half of villages have quotas for women Presidents did not require oversampling women heads. However, our final sample of village Presidents is slightly more than half women (58%), given that some women are elected to head villages in the absence of quotas. Table B.1 also provides information on the president’s age, number of years of education completed, their political experience, familial political connections, the role of their partner in their decision to run, support from any political party, and wealth measured in terms of whether or not they own land that is titled in their name, cultivate agricultural land that they own.

Table A.1: Summary Statistics for Presidents

	Range	Mean	SD
Female	0-1	0.58	0.49
SC	0-1	0.33	0.47
Age	20-80	42.39	12.07
Education	0-15	9.63	3.67
Agricultural work on own land	0-1	0.35	0.48
Spouse decided they would contest	0-1	0.15	0.35
First time sarpanch	0-1	0.95	0.21
Prior political experience	0-1	0.52	0.5
Prior entry in council building	0-1	0.65	0.48
Party supported campaign	0-1	0.22	0.41
Family political experience	0-1	0.54	0.5
Attended gram sabha pre-election	0-1	0.67	0.47
Has land on own name	0-1	0.39	0.49

A.1.3 Sampling notables

The notable survey targeted 6 key informants in each gram panchayat. It is mainly used to collect background data on the social and political characteristics of the gram panchayat.

Sampling strategy: while the field team interviewed available notables, they had to work with strict constraints regarding the key demographic characteristics of the group of individuals they interviewed. Namely, they by design had to include a gender-balanced list of 2 SCs (1 male, 1 female) and 4 non-SCs (2 male, 2 female). As a result, our sample of 6 notables within each village is balanced on gender, and roughly balanced on caste (or at least inclusive of lower castes). In order to ensure we have a comparable list of notables across sampled villages, we restricted our sample universe to include individuals who occupy the following roles: School teacher, Anganwadi worker, PDS Shopkeeper, Self Help Group leader, Doctor/Nurse/Public Health Center worker, Party worker, Informal Leader (ex. Religious leader or caste panchayat leader), Kotwal, government employees residing in the GP (but not working for the GP), and Talathi (village revenue officer).

This strategy enables us to achieve a gender-balanced subset of people who are truly knowledgeable about local politics, representing both ends of the caste-based power spectrum: disadvantaged SC notables, and more socially "mainstream" notables. Table B.2 below provides details on the key characteristics of our sample.

Table A.2: Summary Statistics for Notables

	Range	Mean	SD
Female	0-1	0.5	0.5
SC	0-1	0.2	0.4
OBC	0-1	0.38	0.49
GEN	0-1	0.39	0.49
ST	0-1	0.04	0.19
Maratha	0-1	0.46	0.5
Education	0-14	10.51	3.01
Age	18-97	42.67	11.64
Schoolteacher	0-1	0.08	0.27
Anganwadi Worker	0-1	0.14	0.35
Arogya sevika	0-1	0.07	0.25
PDS shopkeeper	0-1	0.04	0.2
SHG leader	0-1	0.07	0.26
Doctor	0-1	0.02	0.13
Party worker	0-1	0.09	0.29
PHC worker	0-1	0.04	0.2
Kotwal	0-1	0.02	0.14
Government employee	0-1	0.07	0.26
Talathi	0-1	0	0.06
SHG president	0-1	0.08	0.27
Informal leader	0-1	0.07	0.26
Previous council member	0-1	0.11	0.31
Previous president	0-1	0.06	0.23
Previous deputy sarpanch	0-1	0.03	0.18
Has prior political experience	0-1	0.57	0.49
Muslim	0-1	0.04	0.2
Hindu	0-1	0.88	0.32
Lives in village	0-1	0.92	0.27
Monthly wage (INR)	0-820000	14136.31	27705.06
Has a vehicle	0-1	0.78	0.41
Has a smartphone	0-1	0.71	0.45
Hours spent in public in a day	0-24	6.03	3.03
Time to council office (Hours)	0-3	0.15	0.17
N = 3699			

As seen from these numbers, our sample is perfectly gender-balanced and includes a diversity of caste profiles and occupations. Notables also emerge as relatively well-off (as per ownership of smartphones and/or vehicles) and individuals that do spend much of their time in public, and in relative proximity to the gram panchayat. Additionally, a majority of them has prior political experience, broadly defined, which makes it indeed likely that they are the types of individuals within the village that would have information about the inner workings of the village council.

The variables from Table C.2 are constructed in the following manner.

- Female: 1 if the respondent self-identified as female, 0 otherwise.
- SC: 1 if the respondent self-identified as belonging to SC (scheduled castes), 0 otherwise.
- OBC: 1 if the respondent self-identified as belonging to OBC (other backward classes), 0 otherwise.
- GEN: 1 if the respondent self-identified as belonging to GEN (general category), 0 otherwise.
- ST: 1 if the respondent self-identified as belonging to ST (scheduled tribes), 0 otherwise.
- Maratha: 1 if the respondent self-identified as belonging to Maratha caste, 0 otherwise.
- Education: The respondent's self-reported education attainment, where 0 is never attended school, 1 is first class, and 14 is post-graduate education.
- Age: The respondent's self-reported age (in years).
- Occupation: The respondent's self-reported occupation, from the list of options stated above.
- Has prior political experience: 1 if the respondent self-identified as having had prior political experience, 0 otherwise. Political experience is broadly defined as "experience in politics, social work, or public activity."
- Muslim: 1 if the respondent self-identified as Muslim, 0 otherwise.
- Hindu: 1 if the respondent self-identified as Hindu, 0 otherwise.
- Lives in village: 1 if the respondent reports living in one of the villages of the gram panchayat, 0 otherwise.
- Monthly wage: The respondent's self-reported monthly earnings, in Indian rupees.
- Has a vehicle: 1 if the respondent reports owning a vehicle, 0 otherwise.
- Has a smartphone: 1 if the respondent reports owning a smartphone, 0 otherwise.
- Hours spent in public in a day: The number of hours the respondent reports spending in public per day.
- Time to council office: The amount of time (in hours) it takes for the respondent to reach the gram panchayat office from their home.

A.1.4 Description of The Group Meeting Structure & Survey

To generate behavioral measures, we rely on our group meeting, which involves a traditional survey as well as close observations by multiple members of our gender-balanced two-person survey team. This requires the research team to gather in the same location (in the gram panchayat office) three top decision-makers in local governance: the gram sevak (appointed government bureaucrat), upa-sarpanch (elected member of the *gram panchayat* who is appointed to be the second-in command-of the council) and the sarpanch (the head of the council), *after they have each been individually interviewed*, at a time agreed upon in advance by all.

The group meeting is meant to approximate the dynamics of the *masik sabha*, which is a monthly meeting held with only members of the *gram panchayat* (the elected village council with one appointed government bureaucrat). This is the most relevant forum for core governance decision-making related to the financial and policy-relevant administration of the *gram panchayat* and the village more broadly. Much like our group meeting, the *masik sabha* is not open to the public; this is where *gram panchayat* members make decisions about the council's budget and consequent policies. As such, it is an essential meeting for decision-making with real policy implications.

In expectation, the sarpanch must "preside" over the meeting (making him/her, by definition, the most institutionally central actor). The upa sarpanch is designated as the sarpanch's deputy and the gram sevak is the secretary of the meeting, taking notes and providing administrative information when asked. These three actors theoretically lead a democratic meeting with elected ward members of the council invited to participate.

Compared to the more extensively studied *gram sabha*, a public village meeting that occurs 2 to 4 times per year, we find the *masik sabha* to be comparatively more significant because of its content, frequency, and context. Specifically, the *masik sabha* is where *most gram panchayat* decisions are actually made related to budget spending and to the allocation of contracts; it is the local government meeting that occurs most regularly; and it is a non-public context limited to *gram panchayat* members. Indeed, while general policy preferences of villagers are discussed in the *gram sabha*, specific policy prerogatives and fiscal implementation processes are developed and decided upon by the village council members in the *masik sabha*. For the purpose of our project: to understand the institutional centrality of the sarpanch in the *gram panchayat*, it is crucial to model a typical local meeting that will uncover the natural dynamics of the institution, rather than potential performativity that would result in a public event like the *gram sabha*.

In the lead-up to the group meeting, the research team proceeds as such: all three participants are individually approached (by phone) by the research team and asked to participate in a private, individual interview; at the end of this individual interview, they are then asked to participate in a "discussion during which the research team will be collecting data on the development priorities of the village and on the role that the different actors play in this process" - that is, "the group meeting". Our group meeting simulates the structure of a typical *masik sabha* in the way that the meeting had a clear set of priorities, an agenda, and the opportunity for contribution and discussion of all members - all features of the actual monthly meeting.

To encourage serious and thoughtful participation, participants are shown letters from

both district authorities and the Maharashtra State Election Commission that encouraged participation in this research. The letter also incentivized participants to provide constructive feedback by promising to invite a subset of participants who engage seriously in the deliberation to a state-wide workshop on good governance to be held in Mumbai at the end of data collection, organized in cooperation with the Maharashtra State Election Commission.¹

During the subsequent group interview, we ask a number of descriptive questions about the *gram panchayat* to the three actors. This allows us to develop observation-based measures.

¹This official support led participation to be *extremely* high, which in turn meant that we avoided a selection problem. Overall, only four *gram panchayats* refused to participate.

B Balance Across Quota and Non-quota Village Councils

Our causal identification strategy relies on the assumption that female-reserved village councils are randomly selected, and thus overall similar to village councils in which no reservation is in place (likely leading, in the overwhelming majority of cases, to the election of a man). To verify the validity of this assumption, Table D.1 below checks and confirms that villages where quotas mandate female elected heads, that is “reserved” villages, are comparable to villages not assigned women’s quotas, that is “unreserved villages”- where men are most often elected as heads - on all observable variables available in our dataset.

Table B.1: Balance Between Quota and Non-quota Village Councils

Covariate	Mean, treated	SE treated	Mean control	SE control	Diff in means	P value	N
SC members	1.288	1.175	1.229	1.408	0.059	0.578	602
OBC members	2.726	1.662	2.624	1.674	0.102	0.452	603
Open members	3.589	2.263	3.75	2.322	-0.161	0.389	604
No. villages	1.283	0.725	1.247	0.642	0.036	0.513	605
Population	1643.874	2320.911	2588.997	10204.395	-945.123	0.112	605
Percent SC pop.	0.144	0.097	0.154	0.125	-0.01	0.414	364
Percent OBC pop.	0.25	0.232	0.239	0.225	0.011	0.662	364
Percent Maratha pop.	0.444	0.296	0.431	0.304	0.012	0.695	364
Percent open pop.	0.371	0.307	0.311	0.313	0.06	0.067	364
Distance to block (km)	20.536	11.453	20.803	12.751	-0.267	0.787	605
Time to block (hr)	0.906	2.537	0.669	0.426	0.237	0.116	605
Speed to block(km/h)	33.011	15.763	44.882	154.318	-11.87	0.178	605
Pilgrimage sites	0.341	0.475	0.277	0.448	0.065	0.086	604
Historic sites	0.126	0.333	0.112	0.316	0.014	0.594	605
Economic opportunities	0.26	0.44	0.253	0.436	0.007	0.843	604
Electricity	0.976	0.153	0.971	0.168	0.005	0.704	605
Electricity grid	0.973	0.164	0.961	0.193	0.011	0.437	602
Drinking water	0.87	0.337	0.875	0.331	-0.005	0.863	605
Irrigation water	0.645	0.479	0.685	0.465	-0.04	0.301	604
NREGA	0.802	0.399	0.849	0.358	-0.047	0.126	605
Other employment sch.	0.706	0.456	0.715	0.452	-0.008	0.823	605
IAY	0.805	0.397	0.763	0.426	0.043	0.203	605
Other housing sch.	0.413	0.493	0.407	0.492	0.006	0.883	605
Sanitation sch.	0.362	0.481	0.401	0.491	-0.039	0.326	605
Targeted PDS	0.44	0.497	0.429	0.496	0.011	0.79	605
Other schemes	0.266	0.443	0.311	0.464	-0.045	0.226	605
Police patil	0.787	0.41	0.753	0.432	0.034	0.33	595
Police patil woman	0.266	0.443	0.236	0.425	0.031	0.452	458
Police patil open	0.333	0.472	0.412	0.493	-0.078	0.086	451
Police patil OBC	0.453	0.499	0.398	0.491	0.055	0.238	451
Police patil SC	0.187	0.391	0.164	0.371	0.023	0.523	451
Police patil ST	0.027	0.161	0.027	0.161	0	0.994	451
No. SHGs	17.481	27.463	14.37	15.173	3.111	0.09	597
Terms women reserved	2.113	1.078	1.965	1.103	0.148	0.096	605
Terms SC reserved	0.659	0.731	0.654	0.728	0.005	0.935	605
Terms ST reserved	0.239	0.534	0.224	0.632	0.015	0.759	605
Terms OBC reserved	1.529	1.218	1.529	1.181	0	0.999	605
missing any terms	0.222	0.416	0.231	0.422	-0.009	0.794	605
res 2010 women	0.44	0.497	0.494	0.501	-0.053	0.19	605

C Sarpanches Demographics (Full Sample)

Table F.1 provides information on key characteristics for the Presidents (sarpanches) of the 605 villages (gram panchayats) in our sample. Given that we blocked on sarpanch reservations for gender and caste (for SC, OBC, and open sarpanches) as well as with the gender of the gram sevak (the main village bureaucrat, whose gender we were also interested in for a related project), aiming for equal samples of gram panchayats (GPs) with each combination of these 3 traits, we oversampled certain categories of Village Presidents. Most notably, our sample over-represents Village Presidents who are members of Scheduled Castes (SCs), who are one third of our sample (32.5%) despite quotas reserving only 13% of Village President positions for candidates who are members of SCs. Given that half of GPs in Maharashtra are reserved for women, our requirement that half of villages have quotas for women Presidents did not require oversampling women heads. However, our final sample of Village Presidents is slightly more than half women (58.2%), given that some women are elected to head villages in the absence of quotas. Table F.1 also provides information on the Village Present’s age, number of years of education completed, their political experience, familial political connections, the role of their partner in their decision to run, support from any political party, and wealth measured in terms of whether or not they own land that is titled in their name, cultivate agricultural land that they own.

Table C.1: Summary Statistics for Presidents

	Range	Mean	SD
sarpanch_female	0-1	0.582	0.494
sarpanch_sc	0-1	0.325	0.469
sarpanch_age	0-80	42.556	12.048
sarpanch_education	0-15	9.626	3.671
sarpanch_agriculturalwork_own_land	0-1	0.355	0.479
sarpanch_spouse_decision_maker_run	0-1	0.146	0.353
sarpanch_first_time	0-1	0.950	0.217
sarpanch_political_experience	0-1	0.522	0.500
sarpanch_entered_GP_building	0-1	0.643	0.480
sarpanch_party_support_campaign	0-1	0.219	0.414
sarpanch_relative_poli_exp	0-1	0.540	0.499
sarpanch_gram_sabha_pre_election	0-1	0.662	0.473
sarpanch_land_own_name	0-1	0.394	0.489