Efficacy of “Town Hall” Meetings in Electoral Democracy: Theory and Evidence from Indian Village Councils

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Abstract

This paper determines the relevance of institutionalized meetings in (local) electoral democracies. It proposes a model where meeting has enforcement power, and election result influences meeting outcome through policymaker’s ability to control meeting procedure. Predictions about equilibrium meeting attendance patterns are then tested in the context of local meetings in Indian villages. Empirical analysis exploits exogenous reservation of village-chair elections for women. I find that meeting attendance rates of both genders respond to village-chair’s gender identity and group sizes as predicted by model, ruling out other mechanisms. Also, relative attendance of women positively affects the “gender composition” of public good provision.

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Keywords: “Town Hall” meetings, Local public good, Women Reservation.

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1 Introduction

Deliberative institutions, such as citizen assemblies or “Town Hall” meetings, have been an important part of political process since the inception of democracy in the city-states of Greece around 500 BC (Hansen (1987)). In our modern world, though election has come to be the primary process through which policymaking occurs in most democratic countries, the institution of “Town Hall” meetings still remains an important and functioning institution of policymaking at the local level (i.e., in local jurisdictions such as villages or towns) in many countries around the world, such as USA (especially in the New England region), Sweden, Switzerland, and India, and recently gained prominence in many countries in South America, such as Brazil, Uruguay etc.¹

In spite of the prevalence and persistence of this institution, modern conception of democracy is primarily and overwhelmingly electoral. Elections, though very important, are, however, known to suffer from certain imperfections; it is well-known since Plott (1967), Schofield (1983), and others that the median voter theorem would fail in presence of multidimensional preferences (or policy platform). Apart from multidimensionality of electoral platform, elections may also suffer from information asymmetries (policymakers being uninformed about median preference, or electorate being uninformed about private effort put in by policymaker to provide public good). Given these limitations of the voting mechanism, it is useful to pay attention to the other, more direct institutions of democracy, such as the “Town Hall” meetings.² It is possible that the “Town Hall” meetings can potentially complement elections by either reducing the multidimensionality problem or alleviating any information asymmetries that may be present. Therefore, if meetings are effective then we should find election and meeting outcomes to be interdependent. Importantly, the nature of the interdependence would be contingent on the specific mechanism at work. Our understanding about these interdependencies between institutions and meeting’s actual effect on policy is quite limited. This paper is an attempt to address both of these issues.

To that end, the paper first develops a model of policymaking in presence of election and meeting, by assuming a specific mechanism through which meeting affects outcome. It then tests the predictions of the model in the context of local meetings.

¹It is referred to using different names in different contexts; it is known as Town Hall in USA, Landsgemeinde in Switzerland, Kommunalstämma in Sweden, Gram Sabha in India, Orçamento Participativo in Brazil etc. The phrase “Town Hall” used in this paper refers to any such institution of local meeting in generality.

²There are other institutions of direct democracy, such as petitioning, referenda, initiatives etc, that may also help to reduce the imperfections present in elections. Focus of this work, however, is specifically on meetings.
(known as Gram Sabhas) in Indian village councils using a pan-Indian survey data. The validation of the predictions, the paper argues, rules out other alternative mechanisms. Finally, it provides an estimate of the effect of meeting attendance on local public good provision. Below I first briefly describe the mechanism explored in the model before discussing the challenges in empirically testing it.

In the model individuals first elect a policymaker and then attend a meeting. Meetings are assumed to have enforcement power, i.e., resolutions reached in the meeting through deliberation and voting can potentially constrain the policymaker’s choice of policy. This constraining may happen through both state enforcement and local punishments as well. The relevance of such meetings is motivated by assuming that individuals care about both a unidimensional policy as well as the ability or competence of the policymaker, which makes the electoral platform multidimensional. Attendance in meeting is considered to be the main decision facing the individuals. They are divided into two social groups and preferences over policy are group-specific. These group identities can be based on gender, ethnicity, caste, or other such attributes which are extremely visible and provide a natural way to demarcate societies because of historical reasons. For this paper I use gender as the basis for group demarcation.\footnote{There is empirical evidence that preferences for local public goods such as sanitation, roads, water supply etc are gender-specific in Indian villages (Chattopadhyay and Duflo (2004), Coffey et al. (2014)). This is also true in my data. Presence of a gender gap in policy preferences has been documented in other contexts as well, such as in Swiss cantons (Funk and Gathmann (2015)), and in USA (Shapiro and Mahajan (1986)).} I assume that group members can probabilistically constrain the policy choice of the policymaker after she has been elected. This constraint probability, modeled as a contest success function following the works on collective decision making (Esteban and Ray (2001), Banerjee, Iyer, and Somanathan (2007)), depends on the relative group strengths of the meeting attendees. Importantly, the model allows the elected policymaker to have partial control over the meeting procedure, and hence, to influence the constraint probabilities in favor of her own group; this new feature of the model makes the meeting outcome depend on policymaker’s identity. The meeting attendance equilibrium, consequently, also depends on the policymaker’s identity. Individuals anticipate and incorporate these meeting attendance equilibria while voting, given a pair of exogenous candidates from the two groups.

The aim of this modeling exercise is two-fold. Firstly, to produce a prediction about meeting attendance patterns of the two groups which is specific to the enforcement mechanism, and therefore, if validated in the data, would rule out alternative mechanisms. The alternative mechanisms considered are the information aggregation
role of meetings (addressing the issue of information asymmetry on the policymaker’s side), or meetings helping the electorate to audit policymaker’s effort (addressing information asymmetry on electorate’s side). The second objective is to identify a potential instrument for meeting attendance for empirical analysis so that the effect of meeting attendance on public good provision can be estimated. The model succeeds in achieving both of these objectives.

However, generating testable predictions from the model and empirical tests of those predictions are challenging in this context. Since meeting attendance is a discrete decision (like decisions in many other collective action contexts, e.g., whether to attend a rally or a protest, or to join a strike, or to sign a petition, or to vote in a referendum etc), the meeting attendance rates of the groups are random in equilibrium, which makes it difficult to carry out comparative static exercises on them. Doing it on the expected attendance rates is hard as well, since the equilibrium characterizing equations are rather intractable. This intractability problem is addressed by proposing a limit approximation on the equilibrium that produces a characterization result that’s tractable. This is discussed in detail in the Model section of the paper (Section 2.6). This method buys us a sharp prediction about meeting attendance that one can take to data.

The model predicts that when the group identity of the policymaker is exogenously changed, the meeting attendance rates of both groups move in the same direction; the direction of change depends on whether the policymaker is changed from the majority to the minority group, or the other way round. In the first case, the attendance rates of both groups would increase, while in the latter case they would decrease. This result of co-movement of attendance rates is specific to the enforcement mechanism. Since members of both groups want to ensure that their group policy is chosen for implementation, anticipation of more or less of members from the other group attending the meeting also changes the marginal incentive of attendance of own group members accordingly. Therefore, changing the policymaker’s identity has two opposing effects on both groups: the direct effect, owing to policymaker’s ability to control meeting procedure, and the indirect effect working through the aforementioned anticipation. This “general equilibrium” effect is, however, not present in the other mechanisms. Therefore, other mechanisms would not imply co-movement of attendance rates as a function of policymaker’s identity and group size. The implications of other mechanisms is discussed in further detail in Section 5.

Now, to test this prediction one would require some exogenous variation in policymaker’s identity. This is problematic because of presence of election, both in the
model as well as in reality. The Indian context is helpful in that respect. Indian setting provides an exogenous variation in the gender identity (and hence, the preference) of the policymaker because of the reservation policy instituted by the state governments in India. According to this policy, in every election one-third of the village-chair ("Pradhan") seats in each state are chosen by the state government to be reserved for women, i.e., only women can run as candidates for the Pradhan in those reserved village councils. The algorithm used by state bureaucrats for this is such that the assignment of the reservation status to a Pradhan election becomes effectively exogenous (Chattopadhyay and Duflo (2004)). This policy, therefore, allows for a meaningful test of the predictions of the model. The Indian setting is also important because, all the 250,000 elected village councils in India hold legally mandated multiple Gram Sabhas every year; the scale of this exercise in deliberative democracy is, therefore, quite unprecedented.

Consistent with theory, I find that among villages where women are a minority, the meeting attendance rates of both men and women are higher in women reserved villages compared to unreserved ones, while among villages where women are a majority they are lower. District fixed effects are used for this analysis which takes care of the concern, at least partially, that the villages with adverse gender ratios may also have different meeting outcome due to different gender attitudes, since attitudes towards women presumably don’t vary drastically across villages within the same district. As a separate check I instrument the population share of women with the distance to the nearest town and its interaction with average monthly rainfall for the past 7 years and show that the results are robust to the instrumentation.\footnote{The details of this robustness exercise is in the Appendix Section B.1.} Importantly, the result remains valid if the council’s gender composition is used as the “gender identity” of the policymaker instead of (or along with) the gender of the Pradhan. The council members in the village council share responsibility with the Pradhan in deciding public good provision, and a fraction of the council positions are also reserved for only women to get elected. The result that meeting attendance rates of both genders respond systematically and consistently to both the Pradhan’s gender identity and council’s gender composition confirms that individuals in Indian villages are strategic about meeting attendance and their attendance pattern is supportive of the enforcement mechanism.

The model informs us that changes in the divergence in preferences across groups affects the relative attendance of the groups, and importantly, its effect is different under policymakers from different groups. Since the data provides a partial preference ranking
over public goods for each individual surveyed, I test if preference divergence between genders across villages affect the relative attendance of women (to men) differentially in villages with men and women Pradhans. I, therefore, use the interaction of preference divergence across genders and Pradhan’s gender identity as an instrument for relative attendance of women to estimate its effect on public good provision for different public goods. This allows for Pradhan’s gender identity and preference divergence across gender to directly affect public good provision. Using this instrument I show that relative attendance of women changes the composition of public goods construction towards the ones preferred relatively more by women, such as sanitation, health facilities etc, and away from roads, schools etc, which are preferred more by men.

The modeling framework of this paper follows the formulation of collective action problem as a contest among groups, as in Esteban and Ray (2001) and Banerjee, Iyer, and Somanathan (2007). It is hard to find papers that empirically examine the effect of local “Town Hall” meetings on policy choice. Hinnerich and Pettersson-Lidbom (2014), one rare exception, show that the Swedish municipalities which only had town meetings spent significantly less on social welfare compared to towns which were run by elected councils. In the Indian context, Ghatak and Ghatak (2002), Besley, Pande and Rao (2005), and Ban, Rao, and Jha (2013) have looked at different aspects of the Gram Sabha, such as its occurrence and the content and the process of deliberation. They, however, do not show if and how these deliberations affect local policy.

This paper also contributes to the literature exploring the various determinants of provision of local public goods in India and decentralization in general. Mookherjee (2015) and Bardhan and Mookherjee (2005) provide a good review of the literature on political decentralization and its impact on poverty alleviation. Bardhan et al. (2009), Bardhan, Mookherjee, and Torrado (2010) discuss the decentralization experience in India and its consequence on redistribution. The literature on public good provision is concerned with how it is affected by population characteristics of jurisdictions (Banerjee, Iyer, and Somanathan (2005)), extent of democratization (Foster and Rosenzweig (2004)), and electoral outcomes (e.g., the group identity of the village-chair (Chattopadhyay and Duflo (2004); Gajwani and Zhang (2014)), her party affiliation (Dunning and Nilekani (2013)), geographic location (Besley, Pande and Rao (2012)) etc).
2 Theory

2.1 Set Up

There is a jurisdiction with population $n < \infty$ and a given budget, normalized to 1, for provision of two public goods. The population is divided into two groups 1 and 2; the group identity of an individual is publicly observable (e.g., groups based on gender, caste, ethnicity etc). The individuals in the jurisdiction have preferences over how to allocate the given resource across the two public goods. The preferences of the individuals are group specific, i.e., all individuals in group $g$ have preference $\theta_g$, where $\theta_g$ is the fraction of the fund that individuals in group $g$ prefers to be allocated to good 1; $\theta_1 \neq \theta_2$. There is a policymaker responsible for the provision of the public goods. Apart from preference over resource allocation, individuals also have a preference over the quality of implementation of public goods which is determined by the ability or managerial capacity of the policymaker. A policymaker with higher ability can implement a higher quality of public good for the same amount of money spent and hence the individuals’ preferences are aligned on that. The preference of an individual from group $g$ is captured by

$$U_g = -d(\theta_c, \theta_g) + \gamma a,$$

where $\theta_c$ is the actual policy implemented, $d(\cdot, \cdot)$ is some distance function, $a > 0$ is policymaker’s ability, and $\gamma > 0$ is the relative importance of policymaker’s ability in an individual’s preference.\(^5\) Let’s define,

$$u_g = -d(\theta_c, \theta_g).$$

Hence $u_{ig}$ is the pure utility from policy only. Let the population shares of the groups 1 and 2 be $\alpha_1$ and $\alpha_2$ respectively, i.e., $\alpha_1 + \alpha_2 = 1$. A policymaker always tries to implement her preference, i.e., her preference is given by,

$$u_P = -d(\theta_c, \theta_P)$$

where $\theta_P$ is policymaker’s preference. Since she belongs to one of the two groups, she wants to implement either $\theta_1$ or $\theta_2$ depending on her group identity.

\(^5\)The ability term $a$ enters additively into the utility function because both the public goods are normal. The difference in preferences is only relative in nature.
2.2 Election of the Policymaker

At first the individuals elect a policymaker from two candidates, who are exogenously given. The group identities (and hence, policy preferences) and abilities of the candidates are known. Voting is assumed to be costly. The cost of voting \( c_v \) is drawn from a known distribution \( G(.) \), which is continuously differentiable, and has a support \([0, C_v]\) with \( G' > 0 \). I assume that there is always an individual with cost 0.

2.3 Meeting

The policymaker, once elected, is obligated by law to convene a “Town Hall” meeting. Meeting attendance, however, is voluntary and costly for individuals. Cost of meeting attendance, \( c_m \), is also random and is drawn from distribution \( F(.) \). \( F \) is continuously differentiable with strictly positive density everywhere on a bounded support \([C, \bar{C}]\) where \( 0 < C < \bar{C} \). I assume that \( C < d(\theta_1, \theta_2) < \bar{C} \). Conditional on attendance, the individuals can probabilistically constrain the elected policymaker’s choice of a particular allocation of fund. The idea is that individual attendees from both groups try to convince, persuade, or coerce each other at the deliberation stage of the meeting to alter the collective priority of resource allocation, and with some probability the opposing group, i.e., the group that the policymaker doesn’t belong to, is successful in changing the priority.\(^6\) The success probability of the opposing group is referred to as the constraint probability meaning, the probability with which the policymaker is constrained to implement the opposing group’s policy. I assume that the constraint probability depends on the composition of the meeting attendees. Let \( m_1 \) and \( m_2 \) be the number of meeting attendees from the two groups. Let’s say that the policymaker is from group 2. Then the probability with which group 1 attendees will be successful in constraining the policymaker (and hence \( \theta_1 \) will be implemented) is given by \( h_1(m_1, m_2) \) and hence \( \theta_2 \) will be implemented with the residual probability \((1 - h_1(m_1, m_2))\). Similarly if the policymaker is from group 1 then group 2 will constrain the policymaker (and hence \( \theta_2 \) will be implemented) with probability \( h_2(m_1, m_2) \) and \( \theta_1 \) will be implemented with probability \((1 - h_2(m_1, m_2))\).

\(^6\)It is to be emphasized that this potential alteration of policy priorities of some individuals due to deliberation is not a permanent change in their relative preferences. Since deliberations are always about the merits of specific projects related to different public goods, deliberation may change the priorities over those projects. Preferences over public goods in general are presumably more sticky.
I assume that,

\[ h_1 = \frac{\eta m_1}{\eta m_1 + m_2}, \quad \text{and} \quad h_2 = \frac{\eta m_2}{\eta m_2 + m_1}, \quad \eta \in (0, 1], \quad g = 1, 2. \]

The constraint probabilities are, therefore, modeled as contest success functions using a functional form that’s standard in the literature (Skaperdas (1996), Esteban and Ray (2001), Banerjee, Iyer, and Somanathan (2007)). The innovation here is linking the collective action problem in meeting to the election outcome through the parameter \( \eta \). \( \eta \) captures the ability of the elected policymakers to influence meeting proceedings.

When \( \eta = 1 \), \( h_2(m_1, m_2) = 1 - h_1(m_1, m_2) \), i.e., the probability distribution over policy, conditional on meeting attendance, does not depend on the policymaker’s identity. This is a specific class of meeting where the policymaker does not have any control over the meeting procedure. This is referred to as the case of No Procedural Control. The meeting procedure as described in the law, however, may allow for the policymaker to have at least partial control over certain aspects of the meeting, such as agenda setting, voting on specific issues, duration of deliberation etc. The policymaker, therefore, may exploit such power to influence the outcome of the meeting in favor of her own group. This more realistic scenario is referred to as the case With Procedural Control. It is modeled as the attendance of the opposing group being effectively reduced and is, therefore, parameterized by \( \eta < 1 \). When \( \eta < 1 \), we get that \( h_2(m_1, m_2) < 1 - h_1(m_1, m_2) \), i.e., the distribution over policy favor the policymaker’s group.\(^7\)

The results derived in the model using the specific functional functional form, however, is more general. The features of the contest success function which are essential to deliver the results are, (1) the probability, \( h_g \), is a function of the ratio of the meeting attendees, \( m_g/m_{-g} \), and (2) \( h_g \) is increasing and concave in \( m_g/m_{-g} \).\(^8\) The first feature implies that the marginal benefit of attendance for an individual depends on the number of members attending from both groups and they affect the marginal

\[^7\] One can write an augmented version of the constraint probability function as:

\[ h_g = \kappa \frac{\eta m_g}{\eta m_g + m_{-g}} \]

where \( \kappa \in (0, 1] \) captures the fraction of issues or agendas from the set of possible agendas that can be discussed in the meeting, as specified in the law. Lower value of \( \kappa \), therefore, implies that the policymaker has discretion over larger set of issues or agendas. This augmentation doesn’t change the main predictions of the model.

\[^8\] There is one additional condition that is required to ensure existence of the meeting attendance equilibrium: \( h_g \) as a function of \( m_g/m_{-g} \) satisfies the Inada conditions, i.e., \( h_g(\frac{m_g}{m_{-g}}) \to \infty \) as \( \frac{m_g}{m_{-g}} \to 0 \), and \( h_g(\frac{m_g}{m_{-g}}) \to 0 \) as \( \frac{m_g}{m_{-g}} \to \infty \).
benefit in opposite ways, which seem reasonable. This condition will be utilized later
during the empirical analysis to estimate the effect of meeting attendance on policy.
The interpretation for the second one is that, constraining the policymaker through
deliberation is easier for a group if the relative presence of the group in the meeting
is higher, and the benefit of increasing the relative presence is smaller if it is high to
begin with.

In presence of meeting and voting costs, the utility function of an individual
belonging to group $g$ would now become:

$$U_{ig} = U_g - c_{vi}I_{vi} - c_{mi}I_{mi} = -d(\theta_c, \theta_g) + \gamma a - c_{vi}I_{vi} - c_{mi}I_{mi},$$

where $I_{vi}$ ($I_{mi}$) takes value 1 if $i$ goes to vote (meeting) and 0 otherwise.

2.4 Timing of Events

The sequence of events is as follows:

1. Individuals receive their voting cost draws and decide to vote or not, given ex-
ogenous candidates.

2. Policymaker is elected.

3. A Town Hall meeting is convened.

4. Individuals draw their meeting attendance costs and decide to attend meeting or
not.

5. Given attendance, meeting procedure gives out the constraint probability.

6. One policy is picked given the probability.

7. Everybody receives pay-off.

2.5 Meeting Attendance Equilibrium

First we look at attendance behavior of individuals from the two groups in equi-
librium for any given policymaker and meeting type. For any given population size
$n < \infty$, equilibrium exists. This is because the game is finite, the action set of the indi-
viduals has two elements: to attend meeting, or not, the pay-off functions are continuous
and bounded, and finally, the best response function of any individual is increasing in
his type when all the other players’ strategy is increasing in their types. Hence, Theorem 1 of Athey (2001) ensures the existence of Pure Strategy Nash Equilibrium of the game.

In equilibrium each individual follows a cut off strategy where the individual will attend meeting if and only if the realized cost is below some threshold. There may be multiple equilibria in this game. We restrict attention to type-symmetric equilibrium (i.e., same cutoff points for all individuals in the same group), because of the following result:

**Lemma 1.** The symmetric equilibrium in the meeting attendance game for any given policymaker’s identity and meeting type exists, and is unique.

*Proof.* See Appendix A.1.

Given finite population, however, the attendance rates of the two groups are random in equilibrium; they follow binomial distributions. This creates difficulty to carry out comparative static exercises on these equilibrium objects. The expected attendance rates, calculated directly, are intractable objects as well. Since one of the primary aims of this paper is to have testable comparative static results on meeting attendance behavior which one can take to data, tractability of equilibrium outcome is of vital importance. Tractability has not been an issue in prior works since the papers usually assume action space of individuals to be continuous instead of discrete (individuals choosing effort levels, for example, rather than attendance). But in many collective action problems the primary decision facing individuals is of discrete in nature, which poses a technical problem for the researcher analyzing such behavior. In order to achieve tractability I propose a method to approximate the equilibrium attendance rates using a limit exercise.

### 2.6 Limit Approximation

Notice that in large populations, the variance in equilibrium attendance rates is small. Since in the context of Indian villages, the population, on average, is 2,500, the attendance rates for that population will have a very small variance as well, and hence can be treated as approximately non-random. To derive the approximate non-random attendance rates formally, I take limits on both the population (to infinity) and the cost of attendance (to zero);\(^9\) I choose a sequence of cost distributions to be

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\(^9\)Just taking the population limit would result in attendance rates going to zero in the limit, since each individual’s marginal benefit of attendance would go to zero in the limit.
given by $c/n$ where $c$ is drawn from the same distribution $F$ as before. The joint limit achieves two separate tasks at the same time: it reduces the variance of attendance rates to zero (because of the population limit), and at the same time, keeps the expected attendance rates approximately same as the original model (because of the choice of the cost limit). I show that the equilibrium random attendance rates in the finite model are perturbations around the non-random attendance rates achieved through this approximation, and hence, for populations of magnitudes mentioned above, the approximation works extremely well. The following result characterizes the attendance rates in the symmetric equilibrium in the limit approximation under different meeting types.

**Proposition 1.** (i) The limit equilibrium attendance rates, denoted by $(p^g_1, p^g_2)$ for policymaker from group $g = 1, 2$, exist, are unique and strictly positive.

(ii) For $\eta = 1$, limit attendance rates are not dependent on PM’s identity; for $\eta < 1$ they are.

(iii) The equilibrium attendance rates, when policymaker is from group 2, are given by:

\[
p^2_1 = F\left[d(\theta_1, \theta_2)\eta\frac{\alpha_2 p^2_2}{(\eta \alpha_1 p^2_1 + \alpha_2 p^2_2)^2}\right]
\]

\[
p^2_2 = F\left[d(\theta_1, \theta_2)\eta\frac{\alpha_1 p^2_1}{(\eta \alpha_1 p^2_1 + \alpha_2 p^2_2)^2}\right],
\]

and when policymaker is from group 1, are given by:

\[
p^1_1 = F\left[d(\theta_1, \theta_2)\eta\frac{\alpha_2 p^1_2}{(\alpha_1 p^1_1 + \eta \alpha_2 p^1_2)^2}\right]
\]

\[
p^1_2 = F\left[d(\theta_1, \theta_2)\eta\frac{\alpha_1 p^1_1}{(\alpha_1 p^1_1 + \eta \alpha_2 p^1_2)^2}\right].
\]

**Proof.** See Appendix A.2. \qed

The equilibrium characterization in part (iii) of the Proposition has an intuitive explanation. The expressions inside the distribution function $F$ on the right hand sides of the equations are $d(\theta_1, \theta_2)$ times the derivatives of the $h_1$ and $h_2$ functions with respect to the two arguments respectively. Suppose the policymaker is from group 2. If
an individual from group 1 decides to attend then he would change the attendance rate
of his group marginally, which would increase the constraint probability approximately
by its derivative. He would attend if and only if his cost draw is lower than his marginal
benefit of attendance, which is \( d(\theta_1, \theta_2) \) times the derivative. Therefore, the expression
in the right hand side of the first equation gives his ex-ante probability of attendance,
which is same as the attendance rate of group 1 in a symmetric equilibrium.

2.7 Convergence

Now that we have the specification and existence of the unique equilibrium limit
attendance rates, we need to know that these attendance rates are good approxima-
tions of the random equilibrium attendance rates in finite populations. I show in the
following Proposition that the sequence of symmetric equilibrium attendance rates in
finite population models converges in distribution to these degenerate attendance rates.
Formally, the following result holds:

**Proposition 2.** Let \((P_{1n}^g, P_{2n}^g)\) be the symmetric equilibrium (random) attendance rates
for population \(n\) and policymaker from group \(g\). Then \((P_{1n}^g, P_{2n}^g)\) converges in distribution
to the limit equilibrium \((p_1^g, p_2^g)\).

*Proof.* See Appendix A.3.

2.8 Equilibrium Characterization

Given the equilibrium attendance rates under policymakers from the two groups, we
would like to know how they compare with each other. The following result shows that
changing the policymaker’s identity from majority to minority increases the attendance
rates of both groups, while the reverse decreases it. Formally,

**Proposition 3.** Let \(\eta\) be in the neighborhood of 1. Then, for \(\alpha_1 > \alpha_2\) (i.e. \(\alpha_2 < 1/2\)),

\[
(p_1^1, p_2^1) < (p_1^*, p_2^*) < (p_1^2, p_2^2) .
\]

For \(\alpha_1 = \alpha_2 = \frac{1}{2}\),

\[
(p_1^1, p_2^1) = (p_1^*, p_2^*) = (p_1^2, p_2^2) .
\]

For \(\alpha_1 < \alpha_2\) (i.e. \(\alpha_2 > 1/2\)),

\[
(p_1^1, p_2^1) > (p_1^*, p_2^*) > (p_1^2, p_2^2) .
\]

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Proof. See Appendix A.4.

Intuitively, the result follows from the following steps: first, notice that if the policymaker is from own group then the marginal benefit of attendance is lower. This pulls down the attendance rate of own group. But, by the same logic, the marginal benefit of attendance for the other group is now higher, which increases their marginal benefit of attendance. The anticipation of this effect forces the participation of own group to go up. These two opposing forces cancel each other out when the group sizes are symmetric i.e., $\alpha_1 = \frac{1}{2}$. When group sizes are asymmetric, the effect of the majority group overwhelms the minority group’s effect. This is why we see opposite effects on attendance rates depending on whether the policymaker is changed from majority to minority or otherwise. This argument requires that the “effective” attendance of majority is higher than the minority, i.e., if group 1 is majority and policymaker is from group 2, then $\eta \alpha_1 p_1^2 > \alpha_2 p_2^2$. This, however, may not be true for all values of $\eta$. Hence the restriction on $\eta$ to be in the neighborhood of 1.

Let $\bar{p} = \alpha_1 p_1 + \alpha_2 p_2$ be the participation rate in the total population. Then, Proposition 3 implies:

**Corollary 1.** Let $\eta$ be in the neighborhood of 1. Then, for $\alpha_1 > \alpha_2$ (i.e., $\alpha_2 < 1/2$),

$$\bar{p}^1 < \bar{p}^* < \bar{p}^2.$$  

For $\alpha_1 = \alpha_2 = \frac{1}{2}$,

$$\bar{p}^1 = \bar{p}^* = \bar{p}^2.$$  

For $\alpha_1 < \alpha_2$ (i.e., $\alpha_2 > 1/2$),

$$\bar{p}^1 > \bar{p}^* > \bar{p}^2.$$  

This result remains valid even if the fixed cost of meeting attendance is allowed to differ across groups, provided the idiosyncratic cost is drawn from the same distribution. This means that the results are valid if the cost distributions for the two groups are drawn from distributions $F_1$ and $F_2$ with supports $[C_1, \bar{C}_1]$ and $[C_2, \bar{C}_2]$ respectively, with $C_1 \neq C_2$, $\bar{C}_1 - C_1 = \bar{C}_2 - C_2$, and for all $c \in [0, \bar{C}_1 - C_1]$, $F_1(c + C_1) = F_2(c + C_2)$. This, however, would make the equilibrium behavior of attendance rates asymmetric across the groups in response to changes in policymaker’s identity and group size.
2.9 Comparative Statics

We now look at how the attendance rates respond to the parameters of the model. The results below describe the comparative statics on participation rates with respect to (i) the population share of groups, and (ii) the divergence in preferences across the groups.

2.9.1 Population Share ($\alpha_2$):

The following result says that as the population share of own group increases, the individuals of that group attends at a lower rate and the individuals in the other group attend at a higher rate.

**Proposition 4.**

$$\frac{\partial p^g_1}{\partial \alpha_2} > 0 \quad \text{and} \quad \frac{\partial p^g_2}{\partial \alpha_2} < 0, \; g = 1, 2.$$

*Proof.* See Appendix A.5.

Let us define $\hat{p}^g = \frac{p^g_2}{p^g_1}$ for $g = 1, 2$, i.e., $\hat{p}$ is the relative participation rate of group 2. Then we can conclude from Proposition 4 that,

**Corollary 2.**

$$\frac{\partial \hat{p}^g}{\partial \alpha_2} < 0, \; g = 1, 2.$$

2.9.2 Preference Divergence ($d(\theta_1, \theta_2)$):

Now I look at how individual participation rates of the groups and the relative participation rate behave when the preferences across the groups diverge. The following set of results hold:

**Proposition 5.**

$$\frac{\partial p^g_i}{\partial d(\theta_1, \theta_2)} > 0, \quad i = 1, 2 \; g = 1, 2.$$

*Proof.* See Appendix A.6.
Proposition 6. Let \((c_1^g, c_2^g)\) be the equilibrium cut-off strategies for the two groups corresponding to the participation rates \((p_1^g, p_2^g)\) for \(g = 1, 2\). Then,

\[
\frac{\partial \hat{p}^g}{\partial d(\theta_1, \theta_2)} \geq 0 \quad \text{according as} \quad \xi_F(c_2^g) \geq \xi_F(c_1^g),
\]

where \(\xi_F(c) = \frac{F'(c) c}{F(c)}\) is the elasticity of the cost CDF.

Proof. See Appendix A.7.

Corollary 3. It is generically true that,

\[
\frac{\partial \hat{p}^1}{\partial d(\theta_1, \theta_2)} \neq \frac{\partial \hat{p}^2}{\partial d(\theta_1, \theta_2)}.
\]

Proof. See Appendix A.8.

Since the probability that a certain policy is implemented is a function of \(\hat{p}\), and \(\hat{p}\) depends on the preference divergence between the groups, heterogeneity in preference divergence across jurisdictions would imply heterogeneity in policy choice as well (keeping group sizes constant), as described by Proposition 6. But more importantly, the relationship between \(d(\theta_1, \theta_2)\) and \(\hat{p}\) (and hence the relationship between \(d(\theta_1, \theta_2)\) and expected policy) depends on the identity of the policymaker. This specific result would help us identify in the empirical section the causal effect of meeting attendance on policy choice.

2.10 Election

At the very first stage when individuals vote for a candidate they anticipate the meeting equilibria under different candidates as policymakers and vote for the one that maximizes their utility. I look at voting equilibria under three separate cases: in absence of meeting, and in presence of meeting without and with procedural control.

Suppose there are two candidates, one from each group, with known abilities \(a_1\) and \(a_2\), respectively. Then, in absence of meeting, preferences of the individuals over the candidates are aligned when \(a_2\) lies outside the range

\[
\mathcal{A}_0(a_1) = [a_1 - \frac{d(\theta_1, \theta_2)}{\gamma}, a_1 + \frac{d(\theta_1, \theta_2)}{\gamma}].
\]
Hence when \( a_1 \) and \( a_2 \) are not too far apart, there is conflict of interest between the two groups, and is the more interesting case to focus on. Therefore, for the rest of the analysis we restrict attention to that case, i.e., I assume that \( (a_1, a_2) \) are such that \( a_2 \in A_0(a_1) \).

Voting equilibrium exists by the straightforward application of Brouwer’s fixed point theorem. Let \( (q^0_1, q^0_2) \) be the expected equilibrium turnout rates of the two groups in elections in absence of meetings. Now, let group 1 be majority. Then, it is easy to show that \( \alpha_1 q^0_1 > \alpha_2 q^0_2 \). Therefore, for \( a_1 < a_2 < a_1 + \frac{d(\theta_1, \theta_2)}{\gamma} \), group 2 candidate will lose with very high probability even though he is of higher ability. Same is true when group 2 is majority and \( a_1 > a_2 > a_1 - \frac{d(\theta_1, \theta_2)}{\gamma} \). Hence, for \( (a_1, a_2) \) such that \( a_2 \in A_0(a_1) \), elections do not always elect the higher ability candidate. Therefore, for any \( a_1 \), the set \( A_0(a_1) \) is referred to as the inefficiency region. I ask: Do the “Town Hall” meetings help us in reducing the inefficiency region? The following results show that they do.

**Lemma 2.** In presence of meeting without procedural control, the higher ability candidate always wins with probability 1.

**Proof.** See Appendix A.9

This is straightforward, since in case of meetings without procedural control, policymaker’s identity doesn’t change the distribution over policy, and hence people vote only on ability. Hence, meeting without procedural control gets rid of electoral inefficiency with respect to electing the higher ability candidate. For meeting with procedural control the following result holds:

**Lemma 3.** In presence of meeting with procedural control, the inefficiency region is given by,

\[
[a_1 - Q \frac{d(\theta_1, \theta_2)}{\gamma}, a_1 + Q \frac{d(\theta_1, \theta_2)}{\gamma}] = A_m(a_1) \subset A_0(a_1),
\]

where \( Q = [1 - h_1(p_1^2/p_2^2) - h_2(p_2^1/p_1^1)] < 1 \).

**Proof.** See Appendix A.10

The policymaker’s ability to control meeting procedure, however, may reduce the “gain” from meetings, where the “gain” is measured in terms of reduction in the Lebesgue measure of the set \( A(a_1) \), denoted by \( LA(a_1) \). The following result gives us a sufficient condition for that to happen.
Proposition 7. Suppose
\[ \xi_F(c_2^1) \geq \xi_F(c_1^1) \quad \text{and} \quad \xi_F(c_2^2) < \xi_F(c_1^2). \]
(1)

Then,
\[ \frac{\partial L_A(a_1)}{\partial \eta} < 0 \]

Proof. See Appendix A.11.

This result suggests that policies that lead to reduction in the procedural control of the policymaker, may improve the election outcome by electing more able policymakers more often. Testing this specific prediction, however, would require some exogenous introduction of the institution of meetings. Such real instances are not easy to find since historically the institution of local meetings preceded elections in most societies. However, it may be possible to test the predictions related to meeting attendance to examine if the mechanism at work in the model is relevant in any context, and to what extent meeting attendance actually changes policy. The rest of the paper looks at the Indian context in an attempt to do just that by exploiting specific institutional features of the setting.

3 Institutional Context

3.1 Indian Decentralization Structure

India has a three tier governance system within each state - District, Block, and Village Councils. This structure of decentralization had been made universal across India through the 73rd and 74th Constitutional Amendments in the years 1993 and 1994 respectively. For this paper we focus on the village council, also known as the Gram Panchayat. This is the lowest tier of governance in all of rural India. Each village council is comprised of ward representatives and a council-chair (known as Pradhan). All the ward representatives or councilors are elected every five years in a local election. In most cases the council-chair is also directly elected by the people and in the rest he or she is elected by the elected councilors from among themselves.

One of the primary responsibilities of the village council is the provision of local public goods, such as hand pump (for drinking water), sanitation facilities, local roads, public irrigation etc, using resources most of which is comprised of central and state level
grants. Even though the council members play a role in deciding the final allocation of the resources, the Pradhan can exert substantial influence in the decision-making. One source of this power could be that Pradhan heads the subcommittee of planning and finance within the council and all the proposed projects put forward by the different subcommittees must have the approval of the planning and finance subcommittee for them to be actualized. Both Besley, Pande and Rao (2012) and Chattopadhyay and Duflo (2004) find empirical evidence of such discretionary authority enjoyed by the Pradhans. Hence I take the Pradhan as the effective policymaker for the analysis of this paper. Section 4.3.2 discusses the consistency of the results if the council as a whole is considered to be the relevant policymaking unit, instead of the Pradhan.

### 3.2 Reservation in Pradhan Election

In each cycle of local elections in every state some proportion of the Pradhan seats are reserved for women, Scheduled Castes (SCs) and Scheduled Tribes (STs). If a Pradhan election is reserved for any category, then only individuals belonging to that community can run as candidates. This is an affirmative action policy on the part of the Government of India to ensure fair representation of women and disadvantaged minority communities in the political sphere.

In each election cycle one-third of all Pradhan seats in a state are selected to be reserved for women. The selection of the reserved villages within a state is done following an algorithm that doesn’t take into account the village level characteristics such as share of women among the electorate or preference divergence across gender etc, which makes the assignment of the reservation status effectively exogenous from our point of view. Nilekani (2010) reports that for certain states like Karnataka and Andhra Pradesh, the algorithm of women reservation for Pradhans does take into account some village level characteristics, such as village population size and population share of SCs and STs. The balance table reported in the Appendix, however, doesn’t find any evidence of such correlation for population size and SC population share in our sample dataset from 17 major states, indicating that this may not be true for

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10 About 95% of its revenue comes from state and national grants, according to the 13th Finance Commission report.

11 SCs and STs are historically discriminated caste groups and tribal communities respectively, and constitute a minority in Indian population (see Section 4.1 for summary statistics).

12 Currently, in many states 50% of the Pradhan elections are now being reserved for women. But the data is from a time period when it was 33%.

13 See Chattopadhyay and Duflo (2004) for further details about the reservation algorithm and its randomness for the states of West Bengal and Rajasthan.
most of the states in India. Also, given that population size and SC/ST shares do not directly affect the women share of electorate or gender preferences, the exogeneity of reservation with respect to those variables remains intact. The reservation for SCs and STs, however, do take into account their population shares of those communities in the village councils.\(^\text{14}\)

### 3.3 Village Council Meeting

Every village council is required by law to hold a minimum number of “Town Hall” meetings every year at regular intervals. These are known as Gram Sabhas. The minimum number of Gram Sabhas required by law varies from 2 to 4 depending on the state. Any eligible voter within the jurisdiction of the council can attend these meetings, deliberate on the agenda, raise new issues etc.

In the meetings people discuss the requirement and provision of different public goods such as provision of hand pumps (for access to water), sanitation facilities, public investment in irrigation, primary schools, health centers and natural resource management among many other things. If any specific project gets approval from the majority of the meeting attendees it is noted down in the resolution of the meeting which is later used to prepare the annual action plans for the council. Also the village council is required to get the annual plan approved at the meeting before it sends it to the higher tier of government to request for grants. Thus the institution of public meeting does enjoy sufficient power bestowed to it by the Constitution of India and the respective State laws to influence public good provision at the local level. The purpose of this paper is to determine the nature and significance of this influence.

### 4 Empirics

#### 4.1 Data and Summary Statistics

The data used for this project comes from the Rural Economic and Demographic Survey (REDS), 2006. The dataset is unmatched in its geographic coverage and detail. It is the most recent round of a nationally representative survey of rural households of India. The National Council of Applied Economic Research (NCAER) has been carrying out this survey since 1968. But only the most recent round asks the house-

\(^{14}\)For a detailed algorithm of the SC reservation see Dunning and Nilekani (2013) and Chauchard (2014). For ST reservation see Pasquale (2014).
hold members about their Gram Sabha attendance and participation information and hence is relevant for this exercise. The survey covers about 8,600 households spread across 242 villages spanning 17 major states of India.\textsuperscript{15} Even though the survey began in the year 2006, most of the households were surveyed in 2008. It consists of three separate surveys. The first is a household survey which provides details about household assets, demographics, household members’ education, occupation, voting behavior, Gram Sabha attendance in the last four such meetings, nature of participation at the Gram Sabha, public good preference etc. The second survey pertains to the village level information such as stock of public goods, street or neighborhood level construction of public goods under past three Panchayats, information on local elections such as candidate characteristics, vote shares etc.\textsuperscript{16} The last one, called the listing survey, is a census of households of all the surveyed villages. It has household asset, demographics, political involvement and other information. After cleaning the data, the final sample consists of 8038 households (23,759 adults) from 233 villages across 16 states.\textsuperscript{17}

In order to elicit public good preference, each individual is asked to specify, in order of preference, 3 public goods out of 14 items\textsuperscript{18} where the individual would like the local Panchayat to invest money in. Rank 1 represents the public good that’s most demanded by an individual, while rank 3 represents the least demanded. For each individual, all the public goods that are not ranked by him or her (i.e., the ones ranked below 3 in their preference ordering), are given a rank 4. I calculate average ranks for each public good for each village. Figure 1 gives us the distribution of the average ranks for the 6 most demanded public goods (i.e., with the least average ranks overall) - water, sanitation, roads, health, school, irrigation. It is evident from the distributions that water is the most demanded public good in the sample while irrigation is the least demanded.

The survey asks the individual household members about their attendance in past 4 Gram Sabha meetings. Since there are generally 2 or more meetings in a year, \textsuperscript{15}The states are Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal.
\textsuperscript{16}The women reservation status of the Pradhan election has been coded incorrectly in the data. I marked a village council reserved for women (for Pradhan election) if all the candidates running are women. This should give an extremely accurate estimate of the reservation status as in most local elections women don’t run.
\textsuperscript{17}The state of Jharkhand is dropped from the sample since it hadn’t held any Panchayat election by then.
\textsuperscript{18}The 14 items are: drinking water, sanitation and sewage, irrigation canal, electrification, street lighting, credit and input subsidies, communication, school, health facilities, natural resource management, access to government schemes, access to employment schemes, social issues and ceremonies.
this gives us information about meeting attendance for the last 2 years or less. But almost all these meetings took place under one Panchayat regime. Hence the analysis is cross-sectional in nature. The average turnout at the meetings is 13%, as the summary statistics table (Table 1) shows. This statistic, it turns out, is comparable to attendance rates in similar local institutionalized meetings in other contexts - it is 14% in Sweden during the period 1919-1938 (Hinnerich and Pettersson-Lidbom (2014)), 18% in Switzerland in 1988 (Ladner (2002)), 20% in Vermont, USA during 1970-1998 (Bryan (2004)), 12% in Massachusetts, USA in 1996 (Zimmerman (1999)) etc. Table 1 also shows that the turnout is starkly different across gender - only 7% women show up at the meetings while the turnout is 21% for men.\footnote{Besley, Pande and Rao (2005) report the meeting attendance rate for the heads of the households in their sample to be 20%. Since in most rural Indian households men are the household-heads, this is consistent with the REDS data.} This is consistent with the view that women face significantly higher fixed cost of attendance than men, presumably because of the discrimination they face, especially in public platforms such as Gram Sabha meetings, where systematic perception biases about women (as reported in Beaman et al. (2009)) may make it more costly for them to deliberate.

There is variation in how regular individuals are in their meeting attendance. 45% of the individuals who show up at least once in the past 4 meetings, are present in all the 4 meetings. Hence, there is a group of people who are regular at these meetings. But for a majority of the attendees, attendance is a real choice, and the variation in their attendance across villages, presumably, is going to explain some of the variation in public good provision, in case the meetings are effective.
Table 1: Summary Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village Population</td>
<td>2503.5</td>
<td>3162.1</td>
</tr>
<tr>
<td>Adult Women share in village</td>
<td>0.55</td>
<td>0.06</td>
</tr>
<tr>
<td>Age</td>
<td>38.15</td>
<td>15.97</td>
</tr>
<tr>
<td>SC</td>
<td>0.15</td>
<td>0.36</td>
</tr>
<tr>
<td>ST</td>
<td>0.07</td>
<td>0.26</td>
</tr>
<tr>
<td>Married</td>
<td>0.76</td>
<td>0.42</td>
</tr>
<tr>
<td>Years of Schooling</td>
<td>5.45</td>
<td>5.25</td>
</tr>
<tr>
<td>Land-holding (acres)</td>
<td>3.53</td>
<td>6.50</td>
</tr>
<tr>
<td>Turnout at meeting</td>
<td>0.13</td>
<td>0.31</td>
</tr>
<tr>
<td>Turnout at meeting by women</td>
<td>0.07</td>
<td>0.24</td>
</tr>
<tr>
<td>Turnout at meeting by men</td>
<td>0.21</td>
<td>0.36</td>
</tr>
<tr>
<td>Turnout at meeting by SC</td>
<td>0.12</td>
<td>0.29</td>
</tr>
<tr>
<td>Turnout at meeting by non-SC</td>
<td>0.14</td>
<td>0.31</td>
</tr>
<tr>
<td>Turnout at meeting by ST</td>
<td>0.17</td>
<td>0.35</td>
</tr>
<tr>
<td>Turnout at meeting by non-ST</td>
<td>0.13</td>
<td>0.30</td>
</tr>
</tbody>
</table>

The household survey also allows me to calculate the population share of adult women\textsuperscript{20} for each village, and Figure 2 shows its distribution. First, on average the women are a majority in villages in this sample (Table 1). But also, importantly, there is variation across villages as well. One important source of this variation, as I shall show, is migration of men to urban centers. I explore this connection between migration opportunity and population share of women while discussing robustness exercises for my empirical results in the Appendix Section B.1 and show that the results are robust to such concerns about the endogeneity of the population share of women.

4.2 Selection of Group Identity

There are multiple dimensions of identity along which Indian rural villagers can be grouped, such as gender, caste, ethnicity etc. For the purposes of this paper, I claim, gender is the appropriate choice for the basis of group identity.

One of the primary criteria for the demarcation of groups is that the preferences for local public good provision must vary systematically across the groups. According to this requirement gender seems to be in a position of advantage relative to caste or

\textsuperscript{20}All references to population and population shares in villages refer to those who are 18 years or older, i.e., the population of eligible voters.
Figure 2: Women Population Shares across Villages

Table 2: Logit Mapping from Observables to Preferences

<table>
<thead>
<tr>
<th></th>
<th>Water</th>
<th>Sanitation</th>
<th>Roads</th>
<th>Health</th>
<th>School</th>
<th>Irrigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woman</td>
<td>0.140***</td>
<td>0.231***</td>
<td>-0.259***</td>
<td>0.328***</td>
<td>-0.130***</td>
<td>-0.517***</td>
</tr>
<tr>
<td></td>
<td>(0.0368)</td>
<td>(0.036)</td>
<td>(0.0357)</td>
<td>(0.0362)</td>
<td>(0.0369)</td>
<td>(0.0454)</td>
</tr>
<tr>
<td>SC</td>
<td>0.162***</td>
<td>-0.00299</td>
<td>-0.00888</td>
<td>0.0429</td>
<td>-0.028</td>
<td>-0.177**</td>
</tr>
<tr>
<td></td>
<td>(0.0573)</td>
<td>(0.0558)</td>
<td>(0.0546)</td>
<td>(0.0558)</td>
<td>(0.0569)</td>
<td>(0.0778)</td>
</tr>
<tr>
<td>ST</td>
<td>-0.0371</td>
<td>-0.186*</td>
<td>-0.0895</td>
<td>-0.0724</td>
<td>-0.0365</td>
<td>-0.465***</td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td>(0.112)</td>
<td>(0.109)</td>
<td>(0.112)</td>
<td>(0.108)</td>
<td>(0.136)</td>
</tr>
</tbody>
</table>

Observations 20,918 19,683 20,129 19,290 18,222 15,569
Village FE Y Y Y Y Y Y

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3: OLS Mapping from Observables to Preferences

<table>
<thead>
<tr>
<th></th>
<th>Water</th>
<th>Sanitation</th>
<th>Roads</th>
<th>Health</th>
<th>School</th>
<th>Irrigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woman</td>
<td>0.0134*</td>
<td>0.0391***</td>
<td>-0.0628***</td>
<td>0.0496***</td>
<td>-0.0307***</td>
<td>-0.0831***</td>
</tr>
<tr>
<td></td>
<td>(0.00684)</td>
<td>(0.00734)</td>
<td>(0.00709)</td>
<td>(0.00740)</td>
<td>(0.00775)</td>
<td>(0.00663)</td>
</tr>
</tbody>
</table>

Observations 20,833 19,614 20,048 19,219 18,151 15,514
Household FE Y Y Y Y Y Y

Other var.s included: Marital Status, Age
Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

ethnicity. Given the preference ranks obtained from the survey, I create a marker for each public good which takes value 1 whenever an individual mentions it in his or her
top 3 choice and 0 otherwise. Table 2 shows the logistic regression results with the markers as the dependent variables for the 6 most demanded local public goods (water, sanitation, roads, health, school, irrigation) and different identities of the individuals as the regressors.\textsuperscript{21} It clearly shows that the preferences are starkly different across gender, while such differences are not pronounced across SCs (STs) and non-SCs (non-STs) with public irrigation being one of the few exceptions.\textsuperscript{22} These differences are strong even within households as Table 3 shows, which reports the results with household fixed effects.

The other reason for selecting gender over other identity markers is that the women reservation policy changes the gender of the Pradhan in a way which is effectively random, as mentioned before and as the Balance Table in the Appendix (Table 15) confirms. With the SC and ST reservations, the reservation policy takes into account village council level population shares of these groups in a way that is hard to account for, given the data.

4.3 Empirical Strategy and Results

To test the equilibrium characterization and comparative static results of meeting attendance I run a regression with the following specification:

\[ p_{ivd} = \delta_1 R_v + \delta_2 R_v \ast \alpha_v^w + \phi_1 \alpha_v^w + \phi_2 \|_v^w \ast \alpha_v^w + \beta_0 \|_v^w + \beta_1 X_{iv} + \beta_2 Y_v + \psi_d + \epsilon_{ivd} \quad (2) \]

where \( p_{ivd} \) is a measure of meeting attendance frequency of individual \( i \) in village \( v \) in district \( d \). I look at 3 different measures of attendance rate - fraction of meetings attended out of the last 4 meetings, a dummy indicating whether the individual has attended the last meeting or not, and finally, a dummy variable indicating whether the individual has attended any of the last 4 meetings or not. \( R_v \) is a dummy which takes value 1 if the individual is in a village reserved for women. \( \alpha_v^w \) is population share of women in village \( v \) and \( \|_v^w \) is a dummy indicating whether individual \( i \) is a woman or not. \( X_{iv} \) and \( Y_v \) are vectors of individual and village level controls respectively. \( X_{iv} \) includes SC and ST indicators, years of schooling, marital status, household landholding, and \( Y_v \) includes the population shares of SC and ST, median landholding, median schooling,

\textsuperscript{21}The result is robust to other regression specifications, such as OLS or ordered logit with the ranks of public goods as dependent variables.

\textsuperscript{22}The women coefficient for the school regression (column (5)) loses its significance once other explanatory variables, such as years of schooling and landholding, are included in the regression. The same coefficient for the water regression (column (1)) becomes noisier (significant only at 10% significance level). The rest remains similar.
and average preference ranks for different public goods. Villages within districts are compared by incorporating district fixed effects $\psi_d$.

### 4.3.1 Meeting Attendance and Women Reservation

**Hypotheses:** Corollary 1 tells us that women Reservation would either decrease or increase meeting attendance depending on whether the women in the village are majority or minority. The corollary is tested using the following hypothesis:

**Hypothesis 1.**

\[ (i) \delta_1 > 0, \quad (ii) \delta_2 < 0, \quad (iii) \delta_1 + \frac{\delta_2}{2} = 0. \]

The part (iii) of the hypothesis says that when the population share of women is exactly $\frac{1}{2}$, there is no effect of women reservation on meeting attendance. The first two parts say that the effect is positive if the women population share is less than 0.5, while it is negative if the share is more than 0.5.

Proposition 3, however, gives us a more specific prediction. It says that the direction of effect is same for both groups separately. To test if the results hold separately for both men and women I augment the main regression equation to include interactions with the gender dummy. Specifically, I run the following regression:

\[
p_{ivd} = \delta_1 R_v + \delta_2 R_v \ast \alpha_v^w + \delta_3 \alpha_v^w \ast R_v + \delta_4 \alpha_v^w \ast R_v \ast \alpha_v^w + \phi_1 \alpha_v^w + \beta_0 I_v^w + \beta_1 X_{iv} + \beta_2 Y_v + \psi_d + \epsilon_{ivd} \tag{3}
\]

In this specification, $\delta_1$ and $\delta_2$ capture the effects of reservation on attendance of men, while $\delta_3$ and $\delta_4$ capture the additional effect on attendance of being a woman. The Proposition 3 implies the following hypothesis:

**Hypothesis 2.**

\[ (i) \delta_1 > 0, \quad (ii) \delta_2 < 0, \quad (iii) \delta_1 + \frac{\delta_2}{2} = 0, \]
\[ (iv) \delta_1 + \delta_3 > 0, \quad (v) \delta_2 + \delta_4 < 0, \quad (vi) \delta_1 + \delta_3 + \frac{\delta_2}{2} + \frac{\delta_4}{2} = 0. \]

**Results:** Table 4 reports the $\delta_1$ and $\delta_2$ coefficients for Ordered Logit/Logit regression with the specification (2) for three different measures of meeting attendance - fraction of the last 4 meetings attended (column (1) and (2)), dummy indicating whether the
Table 4: Meeting Attendance and Women Reservation: (Ordered) Logit Results

<table>
<thead>
<tr>
<th>Dep. Var.: Meeting Attended</th>
<th>(1) Fraction</th>
<th>(2) Fraction</th>
<th>(3) Latest</th>
<th>(4) Any</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women Reservation (W.R.) ($\delta_1$)</td>
<td>0.184***</td>
<td>0.273**</td>
<td>0.454***</td>
<td>0.489***</td>
</tr>
<tr>
<td>W.R. * Women Population Share ($\delta_2$)</td>
<td>-0.355***</td>
<td>-0.535**</td>
<td>-0.875***</td>
<td>-0.948***</td>
</tr>
<tr>
<td>$H_0 : \delta_1 + \frac{\delta_2}{2} = 0$ (p-value)</td>
<td>0.33</td>
<td>0.60</td>
<td>0.32</td>
<td>0.43</td>
</tr>
<tr>
<td>Mean Dep. Variable</td>
<td>0.134</td>
<td>0.132</td>
<td>0.176</td>
<td>0.189</td>
</tr>
<tr>
<td>Observations</td>
<td>22,071</td>
<td>17,183</td>
<td>22,071</td>
<td>22,071</td>
</tr>
<tr>
<td>Pseudo R-squared</td>
<td>0.296</td>
<td>0.302</td>
<td>0.397</td>
<td>0.408</td>
</tr>
<tr>
<td>District FE</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Individual &amp; Village Controls</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

Standard errors are clustered at village level. *** p<0.01, ** p<0.05, * p<0.1
Individual Controls: Age, Gender, SC, ST, Marital Status
Village Controls: Population, SC, ST population shares, avg pref ranks for public goods

Last meeting was attended (column (3)), and whether any of the last 4 meetings was attended (column(4)). The coefficients are Marginal Effects at Means (MEM). Since the dependent variables are discrete in nature, Ordered Logit (for columns (1) and (2)) or Logit (for columns (3) and (4)) are more natural regression models to use. The results from the OLS regressions are similar. For the column (2) regression, the sample was restricted to the villages within the 5th and 95th percentiles of the distribution of women population share, which are 0.47 and 0.58, respectively.

The coefficients validate all the three components of Hypothesis 1. The p-values for the test of part (iii) of the Hypothesis are reported, and for all the specifications the test fails to reject the Null Hypothesis that when women population share is 0.5, there is no effect of Women Reservation. But on the two sides of 0.5, the Reservation has opposite effect on meeting attendance. So, for example, when the women population share is 0.47, Women Reservation increases the fraction of meeting attended by 1.7 percentage points, but when the women share is 0.58, it decreases the attendance by 2.2 per change points (using column (1) coefficients).
Table 5 reports the coefficients of interest for the specification (3). The specifications for each of the columns is same as in Table 4. The coefficients reported are Marginal Effects at Means (MEM).

The results in the table show that all the six components of Hypothesis 2 are validated. The p-values for the part (iii) and (vi) of the hypothesis again fail to reject the Null Hypothesis for all the specifications. These results conclusively show that for both men and women, reservation had similar effects and the effects are consistent with the model predictions.

Table 5: Heterogenous Effect of W.R. across Villages ((Ordered) Logit)

<table>
<thead>
<tr>
<th></th>
<th>Dep. Var.: Meeting Attended</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women Reservation (W.R.)</td>
<td></td>
<td>0.151**</td>
<td>0.283***</td>
<td>0.385***</td>
<td>0.399**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.061)</td>
<td>(0.105)</td>
<td>(0.143)</td>
<td>(0.166)</td>
</tr>
<tr>
<td>W.R. * Women Proportion</td>
<td></td>
<td>-0.292****</td>
<td>-0.559***</td>
<td>-0.741***</td>
<td>-0.775**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.112)</td>
<td>(0.197)</td>
<td>(0.262)</td>
<td>(0.305)</td>
</tr>
<tr>
<td>Woman * Women Reservation</td>
<td></td>
<td>0.122*</td>
<td>0.002</td>
<td>0.239</td>
<td>0.302</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.064)</td>
<td>(0.116)</td>
<td>(0.188)</td>
<td>(0.201)</td>
</tr>
<tr>
<td>Woman * W.R. * Women Proportion</td>
<td></td>
<td>-0.227*</td>
<td>0.008</td>
<td>-0.450</td>
<td>-0.565</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.120)</td>
<td>(0.216)</td>
<td>(0.352)</td>
<td>(0.380)</td>
</tr>
</tbody>
</table>

\[ H_0 : \delta_1 + \frac{\delta_2}{2} = 0 \text{ (p-value)} \]
\[ H_0 : \delta_1 + \delta_3 + \frac{\delta_2}{2} + \frac{\delta_4}{2} = 0 \text{ (p-value)} \]

Observations: 22,071 17,183 22,071 22,071
District FE: YES YES YES YES
Individual Controls: YES YES YES YES
Village Controls: YES YES YES YES

MEMs reported. Individual and Village Controls are same as previous specification.
Standard errors are clustered at village level. *** p<0.01, ** p<0.05, * p<0.1

To illustrate the fact that the data follows the model predictions quite closely I plot in Figure 3 the attendance rate of men by simulating the model and check how patterns in the actual data match the simulation. The panel (a) plots the simulated attendance rate of men as a function of population share of women under Pradhans of both genders. The simulation assumes that the cost of meeting attendance is drawn from a truncated logistic distribution with support [0, 1] and distribution parameters \((\mu, \sigma) = (0.5, 0.1)\). The groups’ preference divergence parameter is assumed to be \(|\theta_1 - \theta_2| = 0.4\). The panel (b) plots the residual attendance rate of men against population
share of women in the sampled villages with Pradhans from both genders. The residual is calculated by regressing attendance rate of individuals on the individual and village level controls and the district fixed effects. The attendance rate in the right panel is positively related to population share of women as predicted by the model in the left panel (more on this in Section B.2). Also, the attendance rate line for male Pradhan intersects the attendance rate line for female Pradhan from below at the value of about 0.5 of women’s population share verifying the result discussed above.

### 4.3.2 Importance of Council Characteristics: A Consistency Check

The public good provision at the level of village council is decided by the council as a whole. Even though the Pradhan plays an influential part in deciding the allocation, the council certainly has a residual power to influence policy. Therefore the attendance decision of the individuals would ideally take into account the council characteristics as well.

The village council is comprised of a group of councilors each of whom are elected from a ward within the council. Interestingly, the councilor position for a given ward may also be reserved for women, i.e., only women can run as candidates and become councilors for those reserved wards. The fraction of wards within a council that are to be reserved for women is stipulated by the state governments and therefore, varies from state to state. Also, within a state there is variation in that fraction because the number of seats reserved within a council has to be an integer. Therefore, the variation in this fraction within a district is also effectively random, i.e., it is not correlated with women
Table 6: Attendance Effects of Pradhan’s Identity and Council Characteristics (Ordered Logit)

<table>
<thead>
<tr>
<th></th>
<th>Dep. Var. : Fraction of Meeting Attended</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>(3)</td>
</tr>
<tr>
<td>Women Reservation (W.R.)</td>
<td>0.182***</td>
</tr>
<tr>
<td>(d_1)</td>
<td>(0.066)</td>
</tr>
<tr>
<td>W.R. * Women Population Share (d_2)</td>
<td>-0.351***</td>
</tr>
<tr>
<td>(0.123)</td>
<td>(0.114)</td>
</tr>
<tr>
<td>Faction of Council W.R.</td>
<td>0.429**</td>
</tr>
<tr>
<td>(f_1)</td>
<td>(0.199)</td>
</tr>
<tr>
<td>Faction of Council W.R. * Women Population Share (f_2)</td>
<td>-0.800**</td>
</tr>
<tr>
<td>(0.355)</td>
<td>(0.330)</td>
</tr>
</tbody>
</table>

\[ H_0 : \delta_1 + \delta_2 = 0 \text{ (p-value): 0.35} \]
\[ H_0 : \phi_1 + \phi_2 = 0 \text{ (p-value): 0.24} \]

Observations 22,071 22,071 22,071
Pseudo R-squared 0.295 0.295 0.298
District FE YES YES YES
Individual & Village Controls YES YES YES

MEMs reported. Standard errors are clustered at village level. *** p<0.01, ** p<0.05, * p<0.1
Individual and village controls are same as original specification.

population share or other characteristics of villages which would directly affect meeting attendance. Figure 4 shows the variation in the fraction of council seats reserved for women across villages in the sample. One can treat this fraction as the gender index of the composite entity of the council. If the council as a whole influences policy then the gender index of the council would affect attendance the same way as the gender identity.
of the Pradhan does. It is, therefore, possible to reproduce the attendance result of Table 4 by replacing the women reservation dummy for the Pradhan by the fraction of the council that’s reserved for women. Table 6 shows the results for fraction of meeting attended (column 2) and compares it with the result for Pradhan reservation (column 1). The two columns show that the results for Pradhan and council are consistent with each other, i.e., there is no effect of the council’s gender composition on meeting attendance for villages with symmetric gender distribution, but the results are opposite on the two sides of the distribution. The third column shows that the Pradhan’s effect remains statistically significant even after controlling for the council characteristics, and hence the main analysis remains valid.

4.3.3 Meeting Attendance and Public Good Provision

Hypotheses: To find out the causal effect of meeting attendance on public good provision I look at the effect of gender composition of meeting attendees, measured by relative attendance rate of women (to men), on the composition of different public goods constructed during the same regime. The identification strategy used for this analysis is also informed by the model predictions.

According to the assumption of the model, the distribution over policy is determined by the relative meeting attendance of women (to men). The model also informs us that the relative attendance of women would respond to changes in preference divergence (Proposition 6); more importantly, it would respond differently in villages with men and women Pradhans (Corollary 3). Hence the effect of preference divergence on public good provision would be different in villages with men and women Pradhans. This fact admits the possibility that the preference divergence across gender may affect composition of public good provision directly. This can happen since fragmentation in society can have direct effect on public good provision through its effect on ability of citizens to cooperate, as argued by Alesina et al. (2014), Alesina and Zhuravskaya (2011) etc; if certain public goods are more demanding of citizens’ cooperation than others then it may have direct compositional effect. However, this effect does not depend on the policymaker’s gender identity. In my setting, this implies that the interaction of preference divergence with Women Reservation should affect public good provision only through its effect on relative meeting attendance of women. This interaction is, therefore, is used as an instrument for relative attendance of women. Hence, the instrument allows Women Reservation to have direct effect on the composition of public good provision as well.
In the first stage, \( \hat{p}_{vd} \) is instrumented by the interactions of preference divergence for different public goods and Pradhan’s reservation status. The regressions for the two stages are:

\[
C_{vd}^{w} = \zeta \hat{p}_{vd} + \rho_1 \alpha_{vd}^{w} + \rho_2 R_{vd} + \sum_{G=1}^{3} \beta_{1,G} |\bar{\theta}_{W,Gvd} - \bar{\theta}_{M,Gvd}| + \beta_{1Y} Y_{vd} + \psi_d + \eta_{1vd} \quad (4)
\]

\[
\hat{p}_{vd} = \sum_{G=1}^{3} \beta_{G,R} |\bar{\theta}_{W,Gvd} - \bar{\theta}_{M,Gvd}| \ast R_{vd} + \rho_1 \alpha_{vd}^{w} + \rho_2 R_{vd} + \sum_{G=1}^{3} \beta_{G} |\bar{\theta}_{W,Gvd} - \bar{\theta}_{M,Gvd}| + \beta_{2Y} Y_{vd} + \psi_d + \eta_{2vd} \quad (5)
\]

where \( C_{vd}^{w} \) is share of construction for women preferred public goods in village \( v \) in district \( d \). Water, sanitation, and health are labeled women preferred, while roads, school, and irrigation are labeled men preferred, based on the results in Table 2. The effect on shares of constructions of individual public goods have also been reported. The village level controls \( Y_{vd} \) includes the average preferences of women in villages for 3 public goods. The first stage is an augmented specification of the equation (23), which has the additional interaction terms for identification. The identifying restriction is that \( |\bar{\theta}_{W,Gvd} - \bar{\theta}_{M,Gvd}| \ast R_{vd} \) affects construction of public goods only through its effect on meeting attendance. \( \zeta \) is our parameter of interest. This captures how the relative provision of women preferred public goods changes when the relative attendance of women shifts up or down. The hypothesis is that,

**Hypothesis 3.**

\[ \zeta > 0 \]

**Results:** Table 7 gives us the first stage regression result. Consistent with theory, the effect of preference divergence for sanitation, road and school on the relative attendance of women is different for villages with men and women Pradhans; this confirms my mechanism. This is also clearly visible in the Figure 5. The Figure plots the polynomial relationship between relative attendance rate of women and the absolute difference between average preference ranks of men and women across villages. The left panels are for villages with men Pradhans, while that on the right are for women Pradhan villages. The graphs confirm the results of Table 7 for sanitation and roads; for example, preferences for only 3 public goods are controlled for, because the preference ranking is available for only the top 3 public goods.

---

\[ ^{23} \text{Preferences for only 3 public goods are controlled for, because the preference ranking is available for only the top 3 public goods.} \]
Table 7: Relative Attendance of Women and Preference Divergence

<table>
<thead>
<tr>
<th>Relative Attendance Rate of Women (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women Proportion</td>
</tr>
<tr>
<td>1.354*</td>
</tr>
<tr>
<td>(0.716)</td>
</tr>
<tr>
<td>Preference Divergence across gender:</td>
</tr>
<tr>
<td>Sanitation</td>
</tr>
<tr>
<td>0.150</td>
</tr>
<tr>
<td>(0.149)</td>
</tr>
<tr>
<td>Sanitation * W.R.</td>
</tr>
<tr>
<td>-0.342*</td>
</tr>
<tr>
<td>(0.199)</td>
</tr>
<tr>
<td>Roads</td>
</tr>
<tr>
<td>0.0807</td>
</tr>
<tr>
<td>(0.141)</td>
</tr>
<tr>
<td>Roads * W.R.</td>
</tr>
<tr>
<td>0.276</td>
</tr>
<tr>
<td>(0.277)</td>
</tr>
<tr>
<td>School</td>
</tr>
<tr>
<td>0.0374</td>
</tr>
<tr>
<td>(0.165)</td>
</tr>
<tr>
<td>School * W.R.</td>
</tr>
<tr>
<td>0.487*</td>
</tr>
<tr>
<td>(0.282)</td>
</tr>
<tr>
<td>Mean Dep. Var.</td>
</tr>
<tr>
<td>0.258</td>
</tr>
<tr>
<td>(0.613)</td>
</tr>
</tbody>
</table>

Observations 200
R-squared 0.626
District FE YES

Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$
Other variables: avg. pref. ranks of public goods, population, SC/ST shares.

for sanitation (part (a)), it shows that the relationship is positive for villages with men Pradhans, but negative for women reserved villages. Table 8 and 9 give the second stage results for two sets of variables related to public good provision. In column (1) of Table 8 the dependent variable is share of construction of women preferred public goods, while in column (2) it is the relative share of women (to men) preferred public goods construction. This result shows that as the relative attendance of women improved in the meetings, the composition of public good provision moved in favor of women. Table 9 confirms this for individual public goods as well. The shares of construction for sanitation and health go up when relative presence of women in Gram Sabha improves,
Figure 5: Divergence in Preferences and Relative Attendance Rates of Women

(a) Sanitation

(b) Roads

Table 8: Relative Attendance of Women and “Women” Public Good

<table>
<thead>
<tr>
<th></th>
<th>Women P.Good construction</th>
<th>Rel. Women P.Good construction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Relative Women Attendance</td>
<td>0.636**</td>
<td>1.271**</td>
</tr>
<tr>
<td></td>
<td>(0.261)</td>
<td>(0.523)</td>
</tr>
<tr>
<td>Women Reservation</td>
<td>-0.00245</td>
<td>-0.00490</td>
</tr>
<tr>
<td></td>
<td>(0.0495)</td>
<td>(0.0990)</td>
</tr>
<tr>
<td>Observations</td>
<td>173</td>
<td>173</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.559</td>
<td>0.559</td>
</tr>
<tr>
<td>District FE</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1
Other var.s: avg. pref. ranks of public goods, population, SC/ST shares.

while that of school and roads go down.

5 Alternative Mechanisms

5.1 Information Aggregation

Enforcement is certainly not the only mechanism through which “Town Hall” meetings affect policymaking. The other potentially important role played by meetings can be information aggregation. Now, for this mechanism to be at work it must be the case that the policymaker is motivated by reelection incentives, unlike in the case of citizen candidate model, as I assumed. In a scenario like that, if the policymaker
### Table 9: Relative Attendance of Women and Individual Public Good Provisions

<table>
<thead>
<tr>
<th>Variables</th>
<th>Construction of Public Goods in Villages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sanitation (1)</td>
</tr>
<tr>
<td>Relative Women Attendance (Village)</td>
<td>0.503***</td>
</tr>
<tr>
<td></td>
<td>(0.164)</td>
</tr>
<tr>
<td>Women Reservation</td>
<td>0.0325</td>
</tr>
<tr>
<td></td>
<td>(0.0310)</td>
</tr>
<tr>
<td>Mean Dep. Var.</td>
<td>0.177</td>
</tr>
<tr>
<td></td>
<td>(0.213)</td>
</tr>
<tr>
<td>Observations</td>
<td>173</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.677</td>
</tr>
<tr>
<td>District FE</td>
<td>Y</td>
</tr>
</tbody>
</table>

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Other var.s include: average pref. ranks of public goods, population, SC/ST shares.

is unaware of the median preference, meetings would affect outcome by aggregating preference information. The policymaker would respond to the aggregated information because of her incentive to get reelected.

Now suppose that the policymaker is more informed about the preference of own group. In that case, when policymaker is changed from, say, group 1 to 2, members of group 1 would have a higher incentive to attend, while attendance incentive would be lower for group 2 members. However, anticipation of the effect on the other group wouldn’t change the attendance incentive for any group member. Therefore, the attendance rates of the two groups would move in opposite directions following a change in policymaker’s group identity. This will be true even if the policymaker has imprecise information and group members can make it more precise by reporting their private information, as long as politicians from own group have more precise information about their preference than the ones from the other group.

Suppose, on the other hand, that the policymaker is equally unaware of the preference information of both groups. In that case the incentives to attend meeting are aligned across members of both groups. Therefore, changes in the policymaker’s group identity would have no effect on the participation rates of both groups. Therefore,
under both scenarios the prediction about meeting attendance would be inconsistent with the enforcement mechanism.

Also, the model of election as an accountability mechanism is not the standard assumption in the literature on Indian village councils. This could be because there are compelling contextual reason to think that information asymmetry is not a principal concern in Indian village politics. The politicians running the local elections in India generally come from the same villages where they have lived all their lives and are very much aware of the demands of the local residents. Hence, it is unlikely that they would have to attend local meetings on a regular basis to be aware of local preferences. Also, empirically speaking, reelection of local policymakers in India is especially rare, making it less likely that the information aggregation mechanism is at work.

5.2 Audit of Policymaker’s Effort

“Town Hall” meetings can be effective even if the preference distribution is known to the policymaker and the meeting doesn’t enjoy any enforcement power. Suppose that the quantity or quality of any public good provided depends on the effort put in by the policymaker, and that the effort level is private information. But, suppose that the effort level can be verified by the individuals by attending a “Town Hall” meeting. In this scenario, if the policymaker is motivated by reelection, then the meeting can still affect policy as the policymaker can be voted out if she is revealed to have shirked.

If effort is unidimensional, i.e., if the policymaker can not shirk selectively on any specific set of public goods, then the incentive to attend meetings is aligned across all groups, and hence meeting attendance rate would not respond to changes in policymaker’s identity. If, however, effort is multidimensional, then the policymaker would have incentive to shirk more on public goods which are relatively less preferred by her (and her group members). In that case, a change in the policymaker’s identity, say, from group 1 to 2 would result in an increase in the attendance rate of group 1, and a fall in the attendance rate of group 2. Therefore, the prediction about attendance behavior under this mechanism is also inconsistent with the what I observe in the data.

6 Conclusion

This paper addresses, through formal modeling and empirical analysis, an important and longstanding intellectual query among the political philosophers about the
relative merits of deliberative and representative democracy. I start by emphasizing the fact that it is probably better to see these alternative notions as complementary rather than competing.

I demonstrate that local elections in Indian villages do have a bearing on attendance in local meetings, and specifically on the gender composition, in a way that strongly indicates meeting exerting some sort of enforcement power. The effect of gender composition of attendees on actual public good provision is also estimated to be significant. The paper, however, doesn’t address questions about how voting behavior is affected by presence of meetings and consequently, questions about welfare. These are relevant research questions to be taken up in future.

References

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CHAUCHARD, Simon (2014), Can Descriptive Representation Change Beliefs About a Stigmatized Group? Evidence from Rural India. *American Political Science Review*, 108(02), 403-422.


For Online Publication

Appendix for

“Efficacy of ‘Town Hall’ Meetings in Electoral Democracy: Theory and Evidence from Indian Village Councils”

Sabyasachi Das
A  Theoretical Results

A.1  Proof of Lemma 1

A.1.1  Existence

Let \((c^*_1, c^*_2)\) be a symmetric strategy profile played by all individuals in the case of meeting without procedural control, where all group 1 members have a cut-off strategy of \(c^*_1\), while group 2 members have strategy \(c^*_2\). Then for any individual in group 1 (group 2), \(c^*_1 (c^*_2)\) is best response if and only if,

\[
c^*_1 = \sum_{m_1=0}^{\alpha_1 n-1} \sum_{m_2=0}^{\alpha_2 n} \mathbb{P}(\alpha_1 n - 1, m_1) \mathbb{P}(\alpha_2 n, m_2) [h_1(m_1 + 1, m_2)d(\theta_1, \theta_2) - h_1(m_1, m_2)d(\theta_1, \theta_2)]
\]

\[
c^*_2 = \sum_{m_1=0}^{\alpha_1 n} \sum_{m_2=0}^{\alpha_2 n-1} \mathbb{P}(\alpha_1 n, m_1) \mathbb{P}(\alpha_2 n - 1, m_2) [h_1(m_1, m_2)d(\theta_1, \theta_2) - h_1(m_1, m_2 + 1)d(\theta_1, \theta_2)]
\]

where

\[
\mathbb{P}(\alpha_g n, m_g) = \binom{\alpha_g n}{m_g} F(c^*_g)^{m_g}(1 - F(c^*_g))^{\alpha_g n - m_g}
\]

Since \(F\) is continuous, a solution to equations (6) and (7) exists by Brower’s fixed point theorem.

A.1.2  Uniqueness

Suppose that the equilibrium is not unique for the case of meeting without procedural control. The proofs for the other case is similar. Suppose \(c^* = (c^*_1, c^*_2)\) and \(c^{**} = (c^{**}_1, c^{**}_2)\) are two symmetric equilibria of the meeting attendance game for that case, denoted by the cut-off strategies of the two groups. Let’s define

\[
EMB_{1i} = \mathbb{E}U_1(attend, c_{i-1,1}, c_2) - \mathbb{E}U_1(absent, c_{i-1,1}, c_2)
\]

\[
EMB_{2j} = \mathbb{E}U_1(attend, c_{1, j-1,2}) - \mathbb{E}U_1(absent, c_{1, j-1,2})
\]

where \(EMB_{1i}\) is the expected marginal benefit of attendance for individual \(i\) in group 1 when everyone else in group \(g\) follows cut-off strategy \(c_g\) for \(g = 1, 2\). Similarly \(EMB_{2j}\) is defined for individual \(j\) in group 2. Since \((c^*_1, c^*_2)\) and \((c^{**}_1, c^{**}_2)\) are equilibrium cut-off strategies, we have

\[
EMB_{1i}(c^k_1, c^k_2) = c^k_1 \quad \text{and} \quad EMB_{2j}(c^k_1, c^k_2) = c^k_2, \quad k = *, **
\]
Case I:

Let $c_1^{**} < c_1^*$ and $c_2^{**} = c_2^*$. Then the distribution over the participation rates of group 1 for $c^{**}$ is to the left of the one for $c^*$ which implies that the distribution over the ratio of the participation rates of group 1 to 2 for $c^{**}$ is also to the left of the one for $c^*$. This means that $EMB_{11}(c_1^{**}, c_2^{**}) > EMB_{11}(c_1^*, c_2^*)$ since the constraint probability is concave in the relative participation rate of own group. But that contradicts the equilibrium condition for $c^{**}$.

Similarly, it can be shown that $c_1^{**} = c_1^*$ and $c_2^{**} < c_2^*$ would also lead to a contradiction.

Case II:

Let $c_1^{**} > c_1^*$ and $c_2^{**} = c_2^*$. Now following the same logic we know that the distribution over the ratio of participation rates of group 1 to 2 for $c^{**}$ is to the right of the one for $c^*$. But that implies that $EMB_{11}(c_1^{**}, c_2^{**}) < EMB_{11}(c_1^*, c_2^*)$ which again contradicts the equilibrium condition.

The cases $\{c_1^* > c_1^{**}, c_2^* < c_2^{**}\}$ and $\{c_1^* < c_1^{**}, c_2^* > c_2^{**}\}$ would also lead to contradictions by similar logic.

Case III:

Suppose $(c_1^{**}, c_2^{**}) \gg (c_1^*, c_2^*)$. Then from the equilibrium conditions we get that, $EMB_{11}(c_1^{**}, c_2^{**}) > EMB_{11}(c_1^*, c_2^*)$ and $EMB_{j2}(c_1^{**}, c_2^{**}) > EMB_{j2}(c_1^*, c_2^*)$. Now the first inequality implies that the distribution over the ratio of participation rates of group 1 to 2 under the equilibrium $c^{**}$ gives larger weights on higher values of the ratio relative to the $c^*$ equilibrium, since marginal benefit is concave in the ratio. But then the other inequality can not hold at the same time.

Following the same logic, $(c_1^{**}, c_2^{**}) \ll (c_1^*, c_2^*)$ would also lead to a contradiction.

A.2 Proof of Proposition 1

A.2.1 Computation of Equilibrium

The first thing to notice is that in the limit the equilibrium distribution over participation rates, if exist, will be degenerate. Therefore people will have degenerate beliefs about participation rates in the limit. We now try to find out what the equilibrium participation rates will be, assuming existence, and then show that it exists and its unique. Let the policymaker be from group 2. Then, for any $n < \infty$ and $(m_1, m_2) > 0$, an individual from group 1 will attend the meeting if and only if,

$$E u_1 \left( \frac{m_1 + 1}{\alpha_1 n}, \frac{m_2}{\alpha_2 n} \right) - E u_1 \left( \frac{m_1}{\alpha_1 n}, \frac{m_2}{\alpha_2 n} \right) > \frac{c}{n}$$
\[ \Leftrightarrow \quad d(\theta_1, \theta_2)n \left[ h_1(\alpha_1 p_1 + \frac{1}{n}, \alpha_2 p_2) - h_1(\alpha_1 p_1, \alpha_2 p_2) \right] > c \]  

(8)

where \((p_1, p_2) = (\frac{m_1}{\alpha_1 n}, \frac{m_2}{\alpha_2 n}) > 0\) is the belief of the individual about the participation rates of the groups. Similarly, an individual from group 2 with belief \((p_1, p_2)\) would attend the meeting if and only if,

\[ -d(\theta_1, \theta_2)n \left[ h_1(\alpha_1 p_1, \alpha_2 p_2 + \frac{1}{n}) - h_1(\alpha_1 p_1, \alpha_2 p_2) \right] > c \]  

(9)

Now let \(n \to \infty\) in such a way that the belief remains \((p_1, p_2)\) for all \(n\). Hence we’re increasing the population size while keeping the beliefs of the individuals constant. Since beliefs in the limit are degenerate, we want to know if an individual in group 1 (and in group 2) will attend the meeting in the limit with belief \((p_1, p_2) > 0\). Taking the limit on the inequalities (8) and (9), we get that in the limit the same individuals from the two groups will attend meeting if and only if,

\[ d(\theta_1, \theta_2)h_{1,1}(\alpha_1 p_1, \alpha_2 p_2) > c \quad \text{and} \quad -d(\theta_1, \theta_2)h_{1,2}(\alpha_1 p_1, \alpha_2 p_2) > c \]

In the limit, therefore, the proportions of group 1 and group 2 people attending the meeting, given their (common) belief, are given by,

\[ F[d(\theta_1, \theta_2)h_{1,1}(\alpha_1 p_1, \alpha_2 p_2)] \]

\[ F[-d(\theta_1, \theta_2)h_{1,2}(\alpha_1 p_1, \alpha_2 p_2)] \]

In equilibrium true participation rates justify the belief of the people. Hence, the equilibrium participation rates in the limit \((p_1^2, p_2^2)\), if exist, would be given by,

\[ p_1^2 = F[d(\theta_1, \theta_2)h_{1,1}(\alpha_1 p_1^2, \alpha_2 p_2^2)] \]

\[ p_2^2 = F[-d(\theta_1, \theta_2)h_{1,2}(\alpha_1 p_1^2, \alpha_2 p_2^2)] . \]

By same logic, the limit equilibrium participation rates when policymaker is from group 1, \((p_1^1, p_2^1)\), if exist, would be given by,

\[ p_1^1 = F[-d(\theta_1, \theta_2)h_{2,1}(\alpha_1 p_1^2, \alpha_2 p_2^2)] \]

\[ p_2^1 = F[d(\theta_1, \theta_2)h_{2,2}(\alpha_1 p_1^2, \alpha_2 p_2^2)] . \]
Given the assumptions about $h_g$, these two pairs of equations can be rewritten as:

\[
p_1^2 = F \left[ d(\theta_1, \theta_2) \eta \frac{\alpha_2 p_2^2}{(\eta \alpha_1 p_1^2 + \alpha_2 p_2^2)^2} \right] \tag{10}
\]

\[
p_2^2 = F \left[ d(\theta_1, \theta_2) \eta \frac{\alpha_1 p_1^2}{(\eta \alpha_1 p_1^2 + \alpha_2 p_2^2)^2} \right] \tag{11}
\]

and

\[
p_1^2 = F \left[ d(\theta_1, \theta_2) \eta \frac{\alpha_2 p_2^1}{(\alpha_1 p_1^1 + \eta \alpha_2 p_2^1)^2} \right] \tag{12}
\]

\[
p_2^1 = F \left[ d(\theta_1, \theta_2) \eta \frac{\alpha_1 p_1^1}{(\alpha_1 p_1^1 + \eta \alpha_2 p_2^1)^2} \right] \tag{13}
\]

### A.2.2 Existence

I show the existence of $(p_1^2, p_2^2)$. The other case follows from similar logic. Let

\[
\phi_1(p_2) = F \left[ d(\theta_1, \theta_2) \eta \frac{\alpha_2 p_2}{(\eta \alpha_1 \phi_1(p_2) + \alpha_2 p_2)} \right] \tag{14}
\]

\[
\phi_2(p_1) = F \left[ d(\theta_1, \theta_2) \eta \frac{\alpha_1 p_1}{(\eta \alpha_1 p_1 + \alpha_2 \phi_2(p_1))^2} \right] \tag{15}
\]

where $p_1 = \phi_1(p_2)$ satisfy equation (14) and $p_2 = \phi_2(p_1)$ satisfy equation (15). Now since $F$ is continuous, so are $\phi_2(.)$ and $\phi_1(.)$. Now, one can easily check that,

\[
p_2 \to 0 \quad \Rightarrow \quad \phi_1(p_2) \to 0
\]

\[
p_1 \to 0 \quad \Rightarrow \quad \phi_1(p_1) \to 0
\]

We would like to know how $\frac{\phi_1(p_2)}{p_2}$ and $\frac{\phi_2(p_1)}{p_1}$ behave as $p_2$ and $p_1$ become small. Equations (14) and (15) can be rewritten as,

\[
\phi_1(p_2) = F \left[ d(\theta_1, \theta_2) \eta \frac{\alpha_2}{p_2(\eta \alpha_1 \frac{\phi_1(p_2)}{p_2} + \alpha_2)} \right] \tag{16}
\]

\[
\phi_2(p_1) = F \left[ d(\theta_1, \theta_2) \eta \frac{\alpha_1}{(\eta \alpha_1 + \alpha_2 \frac{\phi_2(p_1)}{p_1})^2} \right] \tag{17}
\]
from which it can be deduced that,

$$p_2 \to 0 \Rightarrow \frac{\phi_1(p_2)}{p_2} \to \infty \Rightarrow \frac{p_2}{\phi_1(p_2)} \to 0$$

and

$$p_1 \to 0 \Rightarrow \frac{\phi_2(p_1)}{p_1} \to \infty$$

Hence in the neighborhood of $(0,0)$,

$$\frac{\phi_2(p_1)}{p_1} > \frac{p_2}{\phi_1(p_2)} \quad \text{and} \quad \phi_2(p_1) > \phi_1^{-1}(p_1) \quad \text{and} \quad \phi_1(p_2) > \phi_2^{-1}(p_2)$$

At $p_2 = 1$, $\phi_1(p_2) \leq 1$. Similarly, at $p_1 = 1$, $\phi_2(p_1) \leq 1$. Therefore, in the neighborhood of $(1,1)$, we have,

$$\frac{\phi_2(p_1)}{p_1} \leq \frac{p_2}{\phi_1(p_2)} \quad \text{and} \quad \phi_2(p_1) \leq \phi_1^{-1}(p_1) \quad \text{and} \quad \phi_1(p_2) \leq \phi_2^{-1}(p_2)$$

Hence there exists $(p_1^g, p_2^g) \in (0,1] \times (0,1]$ such that,

$$\frac{\phi_2(p_1^g)}{p_1^g} = \frac{p_2^g}{\phi_1(p_2^g)} \quad \text{and} \quad \phi_2(p_1^g) = \phi_1^{-1}(p_1^g) \quad \text{and} \quad \phi_1(p_2^g) = \phi_2^{-1}(p_2^g) \quad (18)$$

Equations (18) imply that,

$$p_1^g = \phi_1(p_2^g)$$

$$p_2^g = \phi_2(p_1^g)$$

A.2.3 Uniqueness

The result is proved for $(p_1^g, p_2^g)$. The other case follows from similar logic. It is easy to show that $(p_1, p_2)$ with at least one $p_i = 0$ is not an equilibrium in the limit. Hence all equilibria are of the form $(p_1^g, p_2^g) \gg 0, g = 1, 2$. Before showing uniqueness, we prove the following lemma:

**Lemma 4.** Let $(p_1^g, p_2^g) \gg 0$ be any limit equilibrium under policymaker from group $g = 1, 2$ and any given $\eta$. Then for $g = 1, 2$, we have:

(i) $p_1^g \lesssim p_2^g$ according as $\alpha_1 \gtrless \alpha_2$ i.e., $\alpha_1 \gtrsim \frac{1}{2}$

(ii) $\alpha_1 p_1^g \lesssim \alpha_2 p_2^g$ according as $\alpha_1 \gtrless \alpha_2$ i.e., $\alpha_1 \gtrsim \frac{1}{2}$
Proof. From equations (10) and (11) it is clear that \( \alpha_1 = \alpha_2 = \frac{1}{2} \Rightarrow p_1^2 = p_2^2 \) and hence \( \alpha_1 p_1^2 = \alpha_2 p_2^2 \). Now let \( \alpha_1 > \alpha_2 \) and \( p_1^2 \geq p_2^2 \). Hence we have \( \alpha_1 p_1^2 > \alpha_2 p_2^2 \). But then,
\[
\begin{align*}
p_1^2 &= F \left[ d(\theta_1, \theta_2) \eta \frac{\alpha_2 p_2^2}{(\eta \alpha_1 p_1^2 + \alpha_2 p_2^2)^2} \right] \\
&< F \left[ d(\theta_1, \theta_2) \eta \frac{\alpha_1 p_1^2}{(\eta \alpha_1 p_1^2 + \alpha_2 p_2^2)^2} \right] \\
&= p_2^2
\end{align*}
\]
which is a contradiction. Therefore, \( \alpha_1 > \alpha_2 \) implies \( p_1^2 < p_2^2 \). By similar logic we have, \( \alpha_1 < \alpha_2 \Rightarrow p_1^2 > p_2^2 \).

Now let \( \alpha_1 > \alpha_2 \) and \( \alpha_1 p_1^2 \leq \alpha_2 p_2^2 \). Then
\[
\begin{align*}
p_1^2 &= F \left[ d(\theta_1, \theta_2) \eta \frac{\alpha_2 p_2^2}{(\eta \alpha_1 p_1^2 + \alpha_2 p_2^2)^2} \right] \\
&\geq F \left[ d(\theta_1, \theta_2) \eta \frac{\alpha_1 p_1^2}{(\eta \alpha_1 p_1^2 + \alpha_2 p_2^2)^2} \right] \\
&= p_2^2
\end{align*}
\]
which contradicts the fact that \( p_1^2 < p_2^2 \). By similar logic we have that \( \alpha_1 < \alpha_2 \Rightarrow \alpha_1 p_1^2 < \alpha_2 p_2^2 \). □

Now let \( p^2 = (p_1^2, p_2^2) \gg 0 \) and \( p^{2'} = (p_1^{2'}, p_2^{2'}) \gg 0 \) be two limit equilibria. It is easy to see that,
\[
p^2 \neq p^{2'} \Rightarrow p_1^2 \neq p_1^{2'} \text{ and } p_2^2 \neq p_2^{2'}.
\]

For the rest of the proof I assume \( \alpha_2 > \frac{1}{2} \). The other case is similar.

Now, \( \alpha_2 > \frac{1}{2} \) implies that \( \alpha_3 p_2^2 > \eta \alpha_1 p_1^2 \). Suppose \( p_1^{2'} > p_1^2 \). Then from (10) we get that \( p_2^{2'} < p_2^2 \). But then equation (11) would imply that \( p_1^{2'} < p_1^2 \) leading to a contradiction. Similarly, if \( p_1^{2'} < p_1^2 \), then (10) would imply that \( p_2^{2'} > p_2^2 \), which in turn, from (11), would imply that \( p_1^{2'} > p_1^2 \).

\[\text{A.3 Proof of Proposition 2}\]

Let \( \{(c^*_1, c^*_2)\} \) be a sequence of symmetric equilibria for the meeting attendance game with population \( n \), denoted by cutoff strategies of the individuals in the two
groups, and let \((c_1^*, c_2^*)\) be the equilibrium in the limit. Now I prove the following Lemma.

**Lemma 5.** \(n' > n \implies (c_{1n'}^*, c_{2n'}^*) \ll (c_{1n}^*, c_{2n}^*)\).

**Proof.** Since Marginal Benefit (MB) of attendance for any individual is decreasing in \(n\), keeping the cut-off strategies same, it is obvious that \((c_{1n'}^*, c_{2n'}^*) = (c_{1n}^*, c_{2n}^*)\) can not be true. \(c_{1n'}^* > c_{1n}^*\) implies that the distribution over the participation rate of group 1 attendees would shift to the right which in turn would reduce the expected MB of group 1 individuals. Same is true for group 2 individuals. Hence we can not have one group’s cut-off point going up while the other group’s remaining the same or decreasing in equilibrium. By similar logic, one group’s cut-off point decreasing while other’s remaining same can not be true as well.

The only remaining case is \((c_{1n'}^*, c_{2n'}^*) \gg (c_{1n}^*, c_{2n}^*)\). Suppose it’s true. Then the it must be the case that the expected MB of individuals from both groups goes up in equilibrium when population increases from \(n\) to \(n'\). This implies that the distribution over the ratio of participation rates of group 1 to 2 has shifted to the left, as the constraint probabilities are concave in the ratio of participation rates. But that’d imply that the expected MB of group 2 individuals would be smaller contradicting the assumption that \(c_{2n'}^* > c_{2n}^*\).

Since \(\{(c_{1n}^*, c_{2n}^*)\}\) is bounded and monotone (by Lemma 5), it must converge by the Monotone Convergence Theorem. Let \((c_1^0, c_2^0)\) be the limit of the sequence. Also let \(p_g^0 = F(c_g^0)\) for \(g = 1, 2\). Let \((P_{1n}^*, P_{2n}^*)\) denote the equilibrium random participation rates when population is \(n\). Now the expected participation rates of the two groups in equilibrium are given by \((F(c_{1n}^*), F(c_{2n}^*))\) and

\[
\lim_{n \to \infty} F(c_{gn}^*) = F(c_g^0) = p_g^0, \quad g = 1, 2
\]

The variance of the equilibrium participation rates are given by,

\[
\lim_{n \to \infty} \frac{1}{\alpha_{gn}} F(c_{gn}^*)(1 - F(c_{gn}^*)) = 0, \quad g = 1, 2
\]

Also the number of attendees from group \(g, m_{gn}\), follows Binomial distribution:

\[
m_{gn} \sim B(\alpha_{gn}, F(c_{1n}^*)), \quad g = 1, 2
\]
For $n$ large, the distribution is approximated by Normal. Therefore we can write

$$m_{gn} \sim \mathcal{N}(\alpha_g nF(c_{1n}^*), \alpha_g nF(c_{1n}^*)(1 - F(c_{1n}^*)))$$

$$\Rightarrow P_{gn} \sim \mathcal{N}(F(c_{1n}^*), \frac{1}{\alpha_g n} F(c_{1n}^*)(1 - F(c_{1n}^*)))$$

$$\Rightarrow P_{gn} \xrightarrow{d} \mathcal{N}(F(c_g^0), 0)$$

$$\Rightarrow P_{gn} \xrightarrow{d} P_g^0$$

$$\Rightarrow (P_{1n}, P_{2n}) \xrightarrow{d} (p_{1g}^0, p_{2g}^0) \quad (19)$$

Let $MU_g(P_{1n}, P_{2n}), g = 1, 2$ be random variables where $MU_g(., .)$ is the marginal utility of attendance for an individual in group $g$. Notice that $MU_g(., .)$ is continuous in its arguments since the constraint probability functions are continuous. Given that $(P_{1n}, P_{2n})$ are equilibrium participation rates corresponding to the equilibrium cut-off strategy $(c_{1n}^*, c_{2n}^*)$ we have,

$$EMU_g(P_{1n}, P_{2n}) = c_{gn}^*, \quad \forall \ n, \ g = 1, 2$$

$$\Rightarrow \lim_{n \to \infty} EMU_g(P_{1n}^*, P_{2n}^*) = \lim_{n \to \infty} c_{gn}^* = c_g^0, \quad g = 1, 2$$

But statement 19 implies that

$$\lim_{n \to \infty} EMU_g(P_{1n}, P_{2n}) = MU_g(p_{1g}^0, p_{2g}^0), \quad g = 1, 2$$

Hence,

$$MU_g(p_{1g}^0, p_{2g}^0) = c_g^0, \quad g = 1, 2$$

which means that $(p_{1g}^0, p_{2g}^0)$ are limit equilibrium participation rates. But $(p_{1g}^*, p_{2g}^*)$ are unique by Proposition 1. Therefore

$$(p_{1g}^0, p_{2g}^0) = (p_{1g}^*, p_{2g}^*)$$

$$\Rightarrow (P_{1n}, P_{2n}) \xrightarrow{d} (p_{1g}^*, p_{2g}^*) \quad (\text{from statement (19)})$$
A.4 Proof of Proposition 3

Taking \( \ln F^{-1} \) of equations (10) and (11) we get,

\[
\ln F^{-1}(p_1^2) = \ln d(\theta_1, \theta_2) + \ln \eta + \ln \alpha_2 + \ln p_2^2 - 2 \ln(\eta \alpha_1 p_1^2 + \alpha_2 p_2^2) \quad (20)
\]

\[
\ln F^{-1}(p_2^2) = \ln d(\theta_1, \theta_2) + \ln \eta + \ln \alpha_1 + \ln p_1^2 - 2 \ln(\eta \alpha_1 p_1^2 + \alpha_2 p_2^2) \quad (21)
\]

Taking derivative w.r.t. \( \eta \) we get,

\[
\frac{F^{-1}(p_1^2)}{F^{-1}(p_2^2)} \left[ \frac{F^{-1}(p_1^2)}{\eta \alpha_1 p_1^2 + \alpha_2 p_2^2} + \frac{2 \eta \alpha_1}{\eta \alpha_1 p_1^2 + \alpha_2 p_2^2} \right] \frac{\partial p_1^2}{\partial \eta} + \left[ \frac{2 \alpha_2}{\eta \alpha_1 p_1^2 + \alpha_2 p_2^2} - \frac{1}{p_2^2} \right] \frac{\partial p_2^2}{\partial \eta} = \frac{1}{\eta} - \frac{2 \alpha_1 p_1^2}{\eta \alpha_1 p_1^2 + \alpha_2 p_2^2} \quad (A)
\]

\[
\frac{2 \eta \alpha_1}{\eta \alpha_1 p_1^2 + \alpha_2 p_2^2} - \frac{1}{p_1^2} \frac{\partial p_1^2}{\partial \eta} + \left[ \frac{2 \alpha_2}{\eta \alpha_1 p_1^2 + \alpha_2 p_2^2} + \frac{F^{-1}(p_2^2)}{F^{-1}(p_2^2)} \right] \frac{\partial p_2^2}{\partial \eta} = \frac{1}{\eta} - \frac{2 \alpha_1 p_2^2}{\eta \alpha_1 p_1^2 + \alpha_2 p_2^2} \quad (B)
\]

\[
\frac{2 \eta \alpha_1}{\eta \alpha_1 p_1^2 + \alpha_2 p_2^2} - \frac{1}{\eta} \frac{\partial p_1^2}{\partial \eta} + \left[ \frac{2 \alpha_2}{\eta \alpha_1 p_1^2 + \alpha_2 p_2^2} + \frac{F^{-1}(p_2^2)}{F^{-1}(p_2^2)} \right] \frac{\partial p_2^2}{\partial \eta} = \frac{1}{\eta} - \frac{2 \alpha_1 p_2^2}{\eta \alpha_1 p_1^2 + \alpha_2 p_2^2} \quad (C)
\]

Now, it is easy to check that \( AD > 0, BC < 0, D > B, \) and \( R = S. \) Also, at \( \eta = 1, \)

\( R > 0 \) if \( \alpha_1 > \frac{1}{2} \) and \( R < 0 \) is \( \alpha_1 < \frac{1}{2}. \) Hence, for \( \alpha_1 > \frac{1}{2}, \)

\[
\left. \frac{\partial p_1^2}{\partial \eta} \right|_{\eta=1} > 0 \quad \text{and} \quad \left. \frac{\partial p_2^2}{\partial \eta} \right|_{\eta=1} > 0,
\]

for \( \alpha_1 < \frac{1}{2}, \)

\[
\left. \frac{\partial p_1^2}{\partial \eta} \right|_{\eta=1} < 0 \quad \text{and} \quad \left. \frac{\partial p_2^2}{\partial \eta} \right|_{\eta=1} < 0,
\]

and for \( \alpha_1 = \frac{1}{2}, \)

\[
\left. \frac{\partial p_1^2}{\partial \eta} \right|_{\eta=1} = 0 \quad \text{and} \quad \left. \frac{\partial p_2^2}{\partial \eta} \right|_{\eta=1} = 0.
\]

Similarly, using equations (12) and (13) one can show that, for \( \alpha_1 > \frac{1}{2}, \)

\[
\left. \frac{\partial p_1^1}{\partial \eta} \right|_{\eta=1} < 0 \quad \text{and} \quad \left. \frac{\partial p_2^1}{\partial \eta} \right|_{\eta=1} < 0,
\]

for \( \alpha_1 < \frac{1}{2}, \)

\[
\left. \frac{\partial p_1^1}{\partial \eta} \right|_{\eta=1} > 0 \quad \text{and} \quad \left. \frac{\partial p_2^1}{\partial \eta} \right|_{\eta=1} > 0,
\]

for \( \alpha_1 = \frac{1}{2}, \)

\[
\left. \frac{\partial p_1^1}{\partial \eta} \right|_{\eta=1} = 0 \quad \text{and} \quad \left. \frac{\partial p_2^1}{\partial \eta} \right|_{\eta=1} = 0.
\]
and for $\alpha_1 = \frac{1}{2}$,

$$\frac{\partial p^1_1}{\partial \eta} |_{\eta=1} = 0 \quad \text{and} \quad \frac{\partial p^2_1}{\partial \eta} |_{\eta=1} = 0.$$ 

Also, if $\eta = 1$, then, $(p^1_1, p^2_1) = (p^2_1, p^2_2)$. Now, let $\eta = \eta^0$ be in the neighborhood of 1. Then, for $\alpha_1 > \frac{1}{2}$,

$$(p^1_1, p^2_1) |_{\eta=\eta^0} < (p^1_1, p^2_1) |_{\eta=1} = (p^2_1, p^2_2) |_{\eta=1} < (p^1_1, p^2_2) |_{\eta=\eta^0},$$

for $\alpha_1 < \frac{1}{2}$,

$$(p^1_1, p^2_1) |_{\eta=\eta^0} > (p^1_1, p^2_1) |_{\eta=1} = (p^2_1, p^2_2) |_{\eta=1} > (p^1_2, p^2_2) |_{\eta=\eta^0},$$

and for $\alpha_1 = \frac{1}{2}$,

$$(p^1_1, p^2_1) |_{\eta=\eta^0} = (p^1_1, p^2_1) |_{\eta=1} = (p^2_1, p^2_2) |_{\eta=1} = (p^1_1, p^2_2) |_{\eta=\eta^0}.$$ 

Hence the result. \qed

### A.5 Proof of Proposition 4

Taking $\ln F^{-1}$ of equations (10) and (11) and differentiating w.r.t. $\alpha_2$ we get equations similar to the ones in the previous proof. Again, collecting terms $A, B, C, D$, we can show that, $AD > 0, BC < 0, D > B$, and $R > 0 > S$. Hence

$$\frac{\partial p^1_1}{\partial \alpha_2} = \frac{DR - BS}{AD - BC} > 0$$

Also,

$$p^*_2(\alpha_2) = p^*_1(1 - \alpha_2) \Rightarrow \frac{\partial p^*_2}{\partial \alpha_2} = -\frac{\partial p^*_1}{\partial \alpha_2} < 0$$ \qed

### A.6 Proof of Proposition 5

Here again following the same procedure, we get $AD > 0, BC < 0, D > B$, and $R = S > 0$. Hence

$$\frac{\partial p^*_1}{\partial d(\theta_1, \theta_2)} = \frac{(D - B)R}{AD - BC} > 0 \quad \text{and} \quad \frac{\partial p^*_2}{\partial d(\theta_1, \theta_2)} = \frac{(A - C)R}{AD - BC} > 0$$ \qed
A.7 Proof of Proposition 6

I show the result for \((p_1^*, p_2^*)\). The other cases have similar proof.

We know,

\[
\frac{1}{\hat{p}^*} \frac{\partial \hat{p}^*}{\partial d(\theta_1, \theta_2)} = \frac{1}{p_2^*} \frac{\partial p_2^*}{\partial d(\theta_1, \theta_2)} - \frac{1}{p_1^*} \frac{\partial p_1^*}{\partial d(\theta_1, \theta_2)}
\]

Hence from the previous proof (Section A.6) we get that,

\[
\frac{1}{\hat{p}^*} \frac{\partial \hat{p}^*}{\partial d(\theta_1, \theta_2)} = \frac{R}{p_1^* p_2^* (AD - BC)} \left[ \frac{F^{-1}(p_1^*)p_1^*}{F^{-1}(p_2^*)} - \frac{F^{-1}(p_2^*)p_2^*}{F^{-1}(p_1^*)} \right]
\]

Now \(p_g^* = F(c_g^*)\) for \(g = 1, 2\), by definition. Hence

\[
\frac{F^{-1}(p_g^*)p_g^*}{F^{-1}(p_1^*)} = \frac{F(p_g^*)}{F'(c_g^*)} = \frac{1}{\xi_F(c_g^*)}, \quad g = 1, 2
\]

Therefore

\[
\frac{\partial \hat{p}^*}{\partial d(\theta_1, \theta_2)} = \frac{R}{p_1^2 (AD - BC) \xi_F(c_1^*) \xi_F(c_2^*)} \left[ \xi_F(c_2^*) - \xi_F(c_1^*) \right] \tag{22}
\]

\[\square\]

A.8 Proof of Corollary 3

Since \(C > 0\), \(\xi_F\) is not constant for any \(F\). Hence,

\[
\frac{\partial \hat{p}_g}{\partial d(\theta_1, \theta_2)} \neq 0, \quad g = 1, 2 \quad \text{for } \alpha_2 \neq \frac{1}{2}
\]

Therefore the set of parameters for which

\[
\frac{\partial \hat{p}^{L_1}}{\partial d(\theta_1, \theta_2)} = \frac{\partial \hat{p}^{L_2}}{\partial d(\theta_1, \theta_2)}
\]

is of measure 0. \[\square\]

A.9 Proof of Lemma 2

For \(\eta = 1\), \((p_1^1, p_2^1) = (p_1^2, p_2^2)\) by Proposition 1. Hence, distribution over policy is identical under policymakers from both groups. Hence, individuals from both groups would vote for the candidate with the higher ability. Since there is always one person with voting cost 0 by assumption, the higher ability candidate will win with probability
A.10 Proof of Lemma 3

Let $a_1 < a_2$. For $\eta < 1$, the group 1 individuals will prefer candidate 2 if and only if,
\[
\gamma a_2 - (1 - h_1(\alpha_1 p_1^2, \alpha_2 p_2^2))d(\theta_1, \theta_2) > \gamma a_1 - h_2(\alpha_1 p_1^1, \alpha_2 p_2^1)d(\theta_1, \theta_2)
\]
\[
\Rightarrow \quad a_2 > a_1 + [1 - h_1(\alpha_1 p_1^2, \alpha_2 p_2^2) - h_2(\alpha_1 p_1^1, \alpha_2 p_2^1)] \frac{d(\theta_1, \theta_2)}{\gamma}
\]
\[
\Rightarrow \quad a_2 > a_1 + Qd(\theta_1, \theta_2)
\]
Similarly, if $a_1 > a_2$, then group 2 individuals will prefer candidate 1 if and only if,
\[
a_2 < a_1 - Qd(\theta_1, \theta_2)
\]

A.11 Proof of Proposition 7

Changes in $L_A m$ is synonymous with changes in $Q$ since $L_A m = \frac{2Qd(\theta_1, \theta_2)}{q}$. Let $\hat{p} = p_2/p_1$. First I prove the following lemma:

Lemma 6.
\[
\frac{\partial \hat{p}^k}{\partial \eta} \leq 0 \quad \text{according as} \quad \xi_F(c_k^2) \leq \xi_F(c_k^1), \quad k = 1, 2
\]

Proof. From the proof of Proposition 3 we get that,
\[
1 \frac{\partial \hat{p}^k}{\partial \eta} = \frac{R}{p_1^k p_2^k (AD - BC)} \left[ \frac{F^{-1}(p_1^k) p_1^k}{F^{-1}(p_1^k)} - \frac{F^{-1}(p_2^p) p_2^k}{F^{-1}(p_2^p)} \right]
\]
Now $p_g^k = F(c_g^k)$ for $g = 1, 2$, by definition. Hence
\[
\frac{F^{-1}(p_g^k) p_g^k}{F^{-1}(p_g^k)} = \frac{F(p_g^k)}{F'(c_g^k) c_g^k} = \frac{1}{\xi_F(c_g^k)}, \quad g = 1, 2
\]
Therefore
\[
\frac{\partial \hat{p}^k}{\partial \eta} = \frac{R}{p_1^k p_2^k (AD - BC) \xi_F(c_1^k) \xi_F(c_2^k)} [\xi_F(c_2^k) - \xi_F(c_1^k)]
\]
Now it is straight forward that,

\[ \xi_F(c_2^1) > \xi_F(c_1^1) \text{ and } \xi_F(c_2^2) < \xi_F(c_1^2) \iff \frac{\partial \hat{p}_1}{\partial \eta} > 0 \text{ and } \frac{\partial \hat{p}_2}{\partial \eta} < 0 \]

\[ \Rightarrow \frac{\partial Q}{\partial \eta} < 0 \]
B Robustness Check and Additional Results and Tables

B.1 Endogeneity of Population Shares

One important concern with directly using variations in women population shares in the regression is that it may be correlated with attitudes towards women (even within districts) which in turn may affect overall effectiveness of Gram Sabhas and therefore, attendance in Gram Sabhas. The concern is addressed by looking at specific factors that affect migration of men and therefore, drive variation in the women population shares, and arguing that those factors satisfy the exclusion restriction.

Specifically, the paper uses distance to the nearest town and its interaction with past monthly average rainfall in the villages (using last 7 years, from 1999 to 2006) as instruments for population share of women. Table 11 shows that distance to the nearest town has a negative and concave relationship with population share of women. The negative slope is sensible since villages closer to urban centers will experience higher migration of men leading to greater share of women in the villages. The concavity could be due to convex cost of migration as a function of distance. On the other hand, Table 12 shows that women’s preference for public goods is not correlated with distance to nearest town. The magnitudes of the coefficients are also small. The result is the same for men’s. This rules out the primary concern that distance to urban center may affect meeting attendance through its effect on preferences. Table 11, column (5) shows that the relationship between distance to nearest town and population share of women is affected by average monthly rainfall in the villages (for the last 7 years, from 1999 to 2006), which captures the local availability of work for men. Villages which are, on average, drier in August (i.e., the monsoon season) have greater effect of distance on women population share (presumably because a higher proportion of men migrates out owing to meager agricultural work opportunities), while in villages which are drier during winter (December) the effect is lower (presumably because of greater availability of other kinds of work, such as construction).

Table 13, column(5), therefore, is the first stage (at the village level). The second stage results on attendance, in Table 14, are qualitatively the same as before. The magnitude of the coefficients are a bit higher with the IV estimation. This could potentially be because of weak instruments, since the F-stat is lower than 10, a standard threshold used in economics.
B.2 Meeting Attendance and Women’s Population Share

**Hypotheses:** Proposition 4 says that as the population share of women increases, the participation rate of men goes up while that of women falls. To test the validity of this claim I look at the coefficients $\phi_1$ and $\phi_2$ in equation (2) which capture the effect of women population share on the meeting attendance of men and women respectively. Proposition 4 implies the following hypothesis:

**Hypothesis 4.**

(i) $\phi_1 > 0$ and (ii) $\phi_1 + \phi_2 < 0$

An implication of Proposition 4 is the Corollary 2, which says that the relative participation rate of women to men would fall as women population share increases. To test this hypothesis I run the following regression:

$$
\hat{p}_{vd} = \rho_1 \alpha_{vd}^{w} + \rho_2 R_{vd} + \sum_{G=1}^{N_G} \beta_G |\bar{\theta}_{W,Gvd} - \bar{\theta}_{M,Gvd}| + \beta'_{2Y} Y_{vd} + \psi_d + \eta_{vd} \quad (23)
$$

where $\hat{p}_{vd} = \frac{p_{W,vd}}{p_{M,vd}}$ is the relative meeting attendance rate of women (to men) in village $v$ in district $d$, $G$ is a public good, $\bar{\theta}_{g,Gvd}$ is the average preference rank for public good $G$ for group $g = W$ (women), $M$ (men), in village $v$ in district $d$. Hence $|\bar{\theta}_{W,Gvd} - \bar{\theta}_{M,Gvd}|$ captures the preference divergence between gender in a village. This variable is present in the regression since Proposition 6 informs us that relative participation rate is affected by preference divergence. $\psi_d$ is the district fixed effect. The coefficient of interest is $\rho_1$ and the hypothesis is:

**Hypothesis 5.**

$\rho_1 < 0$

**Results:** Table 10 reports the $\phi_1$ and $\phi_2$ coefficients for the regression specification (2). It shows (from column (1)) that for every 10 percentage point increase in the population share of women, the meeting attendance rate of men increases by 2.35 percentage point as well. Hence the part (i) of Hypothesis 4 is validated. The point estimate for the effect on women’s attendance is not negative. However, the tests in all the specifications do not reject the Null Hypothesis that it is negative. The p-values of the tests have been reported in the table.
Table 7 confirms the Hypothesis 5. Therefore, the results of both Proposition 4 and its implication, Corollary 2 are validated in the data.

B.3 Tables

Table 10: Meeting Attendance and Population Share of Women: (Ordered) Logit

<table>
<thead>
<tr>
<th></th>
<th>Dep. Var.: Meeting Attended</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fraction</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Women Population Share ($\phi_1$)</td>
<td>0.235***</td>
</tr>
<tr>
<td></td>
<td>(0.109)</td>
</tr>
<tr>
<td>Woman * Women Population Share ($\phi_2$)</td>
<td>-0.163**</td>
</tr>
<tr>
<td></td>
<td>(0.078)</td>
</tr>
<tr>
<td>$H_0$: $\phi_1 + \phi_2 &lt; 0$ (p-value)</td>
<td>0.31</td>
</tr>
<tr>
<td>Mean Dep. Variable</td>
<td>0.134</td>
</tr>
<tr>
<td></td>
<td>(0.307)</td>
</tr>
<tr>
<td>Observations</td>
<td>22,071</td>
</tr>
<tr>
<td>Pseudo R-squared</td>
<td>0.296</td>
</tr>
<tr>
<td>District FE</td>
<td>YES</td>
</tr>
<tr>
<td>Individual &amp; Village Controls</td>
<td>YES</td>
</tr>
</tbody>
</table>

Standard errors are clustered at village level. *** p<0.01, ** p<0.05, * p<0.1
Individual Controls: Age, Gender, SC, ST, Marital Status
Village Controls: Reservation status, Population, SC, ST population shares etc.
Table 11: Women Population Share and Migration Opportunity

<table>
<thead>
<tr>
<th></th>
<th>Women Population Share</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Distance to Nearest Town (Km.)</td>
<td>-7.13e-05</td>
</tr>
<tr>
<td></td>
<td>(0.000412)</td>
</tr>
<tr>
<td>Distance to Nearest Town (Km.) squared</td>
<td>6.91e-05***</td>
</tr>
<tr>
<td>Constant</td>
<td>0.543***</td>
</tr>
<tr>
<td></td>
<td>(0.0131)</td>
</tr>
<tr>
<td>Observations</td>
<td>217</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.268</td>
</tr>
</tbody>
</table>

Table 12: Public Good Preference and Migration Opportunity

<table>
<thead>
<tr>
<th></th>
<th>Average Preference Rank for Women in Village</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Water</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Distance to Nearest Town (Km.)</td>
<td>0.000922</td>
</tr>
<tr>
<td></td>
<td>(0.0101)</td>
</tr>
<tr>
<td>Distance to Nearest Town (Km.) squared</td>
<td>-0.000126</td>
</tr>
<tr>
<td></td>
<td>(0.000223)</td>
</tr>
<tr>
<td>Observations</td>
<td>217</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.432</td>
</tr>
<tr>
<td>State FE</td>
<td>YES</td>
</tr>
</tbody>
</table>
**Table 13:** Rainfall interacted with Migration Opportunity Explains Variability in Women Population Share

<table>
<thead>
<tr>
<th>Dependent Variable: Women Population Share</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance to Nearest Town (Km.)</td>
<td>-0.00289**</td>
<td>-0.00204</td>
<td>-0.00295**</td>
<td>-0.00349***</td>
<td>-0.00289**</td>
</tr>
<tr>
<td></td>
<td>(0.00131)</td>
<td>(0.00125)</td>
<td>(0.00120)</td>
<td>(0.00123)</td>
<td>(0.00136)</td>
</tr>
<tr>
<td>Distance to Nearest Town (Km.) squared</td>
<td>6.80e-05***</td>
<td>6.86e-05***</td>
<td>7.81e-05***</td>
<td>6.46e-05**</td>
<td>7.14e-05***</td>
</tr>
<tr>
<td></td>
<td>(2.56e-05)</td>
<td>(2.49e-05)</td>
<td>(2.54e-05)</td>
<td>(2.70e-05)</td>
<td>(2.68e-05)</td>
</tr>
<tr>
<td>Average Rainfall in Jul (1999-2006)</td>
<td>-2.97e-05</td>
<td>-8.29e-05</td>
<td>(4.64e-05)</td>
<td>(0.000111)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(6.96e-06)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Rainfall in Aug (1999-2006)</td>
<td>-1.88e-06</td>
<td>1.43e-05**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.48e-06)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. Rainfall in Jul (1999-2006) * Distance to Nearest Town</td>
<td>-2.49e-06**</td>
<td>1.43e-05**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(6.96e-06)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. Rainfall in Aug (1999-2006) * Distance to Nearest Town</td>
<td>-2.49e-06**</td>
<td>1.43e-05**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(6.96e-06)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.68e-06)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. Rainfall in Sep (1999-2006) * Distance to Nearest Town</td>
<td>-5.92e-06</td>
<td>-2.12e-06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.68e-06)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Rainfall in Dec (1999-2006)</td>
<td>-2.35e-05</td>
<td>-6.44e-05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.48e-05)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. Rainfall in Dec (1999-2006) * Distance to Nearest Town</td>
<td>-2.35e-05</td>
<td>-6.44e-05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.48e-05)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.578***</td>
<td>0.574***</td>
<td>0.580***</td>
<td>0.570***</td>
<td>0.578***</td>
</tr>
<tr>
<td></td>
<td>(0.0133)</td>
<td>(0.0122)</td>
<td>(0.0115)</td>
<td>(0.0110)</td>
<td>(0.0152)</td>
</tr>
<tr>
<td>Observations</td>
<td>216</td>
<td>216</td>
<td>216</td>
<td>194</td>
<td>194</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.054</td>
<td>0.090</td>
<td>0.076</td>
<td>0.071</td>
<td>0.176</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.054</td>
<td>0.090</td>
<td>0.076</td>
<td>0.071</td>
<td>0.176</td>
</tr>
</tbody>
</table>

**Table 14:** Heterogenous Effect of W.R. across Villages - IV

<table>
<thead>
<tr>
<th>Dep. Var.: Meeting Attended</th>
<th>Fraction (1)</th>
<th>Fraction (2)</th>
<th>Latest (3)</th>
<th>Any (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women Reservation (W.R.)</td>
<td>1.327**</td>
<td>1.832**</td>
<td>1.836***</td>
<td>2.023***</td>
</tr>
<tr>
<td></td>
<td>(0.574)</td>
<td>(0.829)</td>
<td>(0.691)</td>
<td>(0.771)</td>
</tr>
<tr>
<td></td>
<td>(1.037)</td>
<td>(1.554)</td>
<td>(1.250)</td>
<td>(1.396)</td>
</tr>
<tr>
<td>Mean Dep. Variable</td>
<td>0.134</td>
<td>0.132</td>
<td>0.176</td>
<td>0.189</td>
</tr>
<tr>
<td></td>
<td>(0.307)</td>
<td>(0.303)</td>
<td>(0.381)</td>
<td>(0.392)</td>
</tr>
<tr>
<td>F-stat on First Stage:</td>
<td>8.72</td>
<td>4.78</td>
<td>8.72</td>
<td>8.72</td>
</tr>
<tr>
<td>W.R. * Women Population Share</td>
<td>19,239</td>
<td>14,809</td>
<td>19,239</td>
<td>19,239</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.352</td>
<td>0.364</td>
<td>0.310</td>
<td>0.327</td>
</tr>
<tr>
<td>District FE</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Individual &amp; Village Controls</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Standard errors are clustered at village level. *** p&lt;0.01, ** p&lt;0.05, * p&lt;0.1 Individual and Village Controls are same as previous specification.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 15: Balance Table

<table>
<thead>
<tr>
<th>Variable</th>
<th>Not Reserved</th>
<th>Women Reserved</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>2529.93</td>
<td>2153.66</td>
<td>376.27</td>
</tr>
<tr>
<td>Median Land Ownership</td>
<td>0.54</td>
<td>0.46</td>
<td>0.08</td>
</tr>
<tr>
<td>Median Years of Schooling</td>
<td>4.69</td>
<td>3.87</td>
<td>0.82</td>
</tr>
<tr>
<td>Women Population Share</td>
<td>0.55</td>
<td>0.54</td>
<td>0.01</td>
</tr>
<tr>
<td>SC Population Share</td>
<td>0.22</td>
<td>0.19</td>
<td>0.03</td>
</tr>
<tr>
<td>ST Population Share</td>
<td>0.11</td>
<td>0.05</td>
<td>0.07**</td>
</tr>
<tr>
<td>Average Preference Rank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>2.41</td>
<td>2.51</td>
<td>-0.10</td>
</tr>
<tr>
<td>Sanitation</td>
<td>2.85</td>
<td>2.79</td>
<td>0.06</td>
</tr>
<tr>
<td>Road</td>
<td>2.84</td>
<td>2.78</td>
<td>0.06</td>
</tr>
<tr>
<td>Health</td>
<td>2.81</td>
<td>2.72</td>
<td>0.09</td>
</tr>
<tr>
<td>School</td>
<td>2.99</td>
<td>2.92</td>
<td>0.08</td>
</tr>
<tr>
<td>Irrigation</td>
<td>3.2</td>
<td>3.15</td>
<td>0.05</td>
</tr>
<tr>
<td>Absolute preference divergence between men and women</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>0.38</td>
<td>0.35</td>
<td>0.03</td>
</tr>
<tr>
<td>Sanitation</td>
<td>0.33</td>
<td>0.39</td>
<td>-0.06</td>
</tr>
<tr>
<td>Road</td>
<td>0.33</td>
<td>0.32</td>
<td>0.01</td>
</tr>
<tr>
<td>Health</td>
<td>0.32</td>
<td>0.35</td>
<td>-0.03</td>
</tr>
<tr>
<td>School</td>
<td>0.29</td>
<td>0.25</td>
<td>0.03</td>
</tr>
<tr>
<td>Irrigation</td>
<td>0.46</td>
<td>0.47</td>
<td>-0.02</td>
</tr>
</tbody>
</table>