

LORI BEAMAN\*

*Northwestern University*

ESTHER DUFLO\*

*Massachusetts Institute of Technology*

ROHINI PANDE\*

*Harvard Kennedy School*

PETIA TOPALOVA\*

*International Monetary Fund*

# Political Reservation and Substantive Representation: Evidence from Indian Village Councils

## Introduction

Female presence in India's state and national legislatures hovers at 10 percent. Concerns that this limits the political voice available to women have led to the introduction and subsequent passage of a Reservation Bill in the Upper house of the Indian Parliament (*Times of India*, March 9, 2010). The bill seeks to reserve 33 percent of India's state and national legislature positions for women. If implemented, 181 out of the 543 National legislators and 1,370 out of the 4,109 State legislators will be women.

Several studies demonstrate that men and women differ in their political and policy preferences (Edlund and Pande, 2002; Miller, 2008). Furthermore, as voters are typically unable to enforce full policy commitment by their legislator, implemented policies often reflect policymakers' preferences (Besley and Coate, 1997; Pande, 2003). Political underrepresentation of women, thus, potentially biases policymaking away from female policy interests. These arguments provide important motivations for gender-based affirmative action policies. Consistent with this view, a number of studies find

\* We thank Catherine Lee for painstaking work on coding the transcripts and research assistance. We thank IPF participants and especially Devesh Kapur, Hari Nagarajan, and Suman Bery for comments. The views expressed in this paper are those of the authors and do not implicate the International Monetary Fund, its management, or Executive Board.

that increased female representation in politics is associated with significant changes in policymaking (see, e.g., Chattopadhyay and Duflo, 2004; Munshi and Rosenzweig, 2010; Figueras, 2007; Rehavi, 2007; Powley, 2007).

However, there are several concerns with using affirmative action to redress gender imbalances in politics. A first concern is the effectiveness of affirmative action in empowering women. If female underrepresentation in politics reflects a woman's low status within the household, then reservation may not affect genuine change. Husbands of elected female leaders may maintain power by controlling the actions of their wives, thereby leading by proxy. A second concern is equity. Reservation for women reduces political opportunities available for men, who are usually more politically experienced. It may also crowd out representation for other historically disadvantaged groups (presumably because women from these groups are less likely to stand for election) such that gains for one disadvantaged group come at the expense of another. Together, these arguments suggest that reservations may even reduce effective democracy by replacing men elected from a wide variety of backgrounds by powerful men governing by proxy through their wives.

Evidence on the functioning of existing systems of political reservation can help us gauge the relevance of these concerns, and shed some light on the potential impact of introducing political reservation in Indian legislatures. In this paper we, therefore, evaluate the Indian experience with political reservation in village councils. By focusing on data from India, albeit at a different level of governance, we are able to hold cultural and institutional contexts constant. Further, the electoral mechanism (plurality rule and single-member jurisdictions) at the local level parallels that used at the state and national level. Voter participation in local elections is high, and political parties invest significant resources in these elections. To evaluate the generalizability of our results we use several datasets, two of which encompass several Indian states. A final benefit of focusing on village elections is that the randomized introduction of political reservation across village councils allows us to cleanly identify the effects of female leadership, separate from other variables such as social attitudes towards women, local demand for public goods, and so forth. Below, we briefly describe the Indian context and our empirical strategy.

A 1993 constitutional amendment made it mandatory for Indian states to decentralize a significant amount of policy influence to a three-tier system of local governance. Our analysis focuses on the lowest tier, the village council or Gram Panchayat (hereafter GP). Villagers in a GP elect members of a village council and its leader, known as Pradhan.

The Pradhan enjoys significant policymaking powers. S/he has the final say in the allocation of public funds across different investment categories and in beneficiary selection. However, these decisions are supposed to be made in consultation with, and ratified by, villagers. To this end, the Pradhan is required to convene and conduct several village-level meetings during the year. These meetings (known as Gram Sabha [GS] meetings) are open to all villagers and are intended both as a forum for deliberation and as an opportunity for villagers to vote on decisions made by the village council.

The 1993 constitutional amendment required that one-third of the Pradhan positions be reserved for women, and that reservation be rotated between elections. While different states chose different ways of implementing reservation, in most cases the process was effectively random. This implies that the difference in average outcomes between reserved and unreserved GPs reflects the causal impact of female leadership.

The random assignment of female Pradhans, combined with our use of large datasets which cover several Indian states, lends our results significant generalizability. We provide evidence on three different aspects of the debate on gender quotas in politics—politician selection, citizen participation in politics, and policymaking.

On selection, we find no evidence that political reservation caused the crowd-out of another politically underrepresented social group—Muslims. We do, however, find evidence of differential selection and of different networks being used by female and male politicians. Relative to their male counterparts, female politicians are significantly more likely to state that their spouses encouraged them to stand for election and help them do their job.

However, help from a spouse does not necessarily preclude agency on the part of female leaders. If women have different opinions from their husbands, formal authority may still give them the power to take different policy decisions. In addition, female leadership may facilitate other women expressing their policy preferences. The latter suggests a channel through which female leader can influence policy outcomes, even if their husbands made all the decisions—changing how the political process aggregates villager preferences.

Our second set of results, therefore, relate to citizen participation in politics. During 2003 and 2004 we recorded 197 villager meetings across five Indian States.<sup>1</sup> The meeting transcripts provide a rare opportunity to

1. Ban and Rao (2008a) use a similar methodology to examine how individual and village characteristics influence the discourse in meetings in South India—our sample of transcripts partially overlaps with theirs.

examine whether female leadership changes the nature of policy discourse in villages. Villager attendance at meetings (for either gender) is unaffected by reservation. However, female villagers are significantly more likely to speak at meetings when the village council leader is a woman (Ban and Rao, 2008a report similar findings).

To examine leader responsiveness to female participation in village meetings, we identify the female friendliness of an issue by the fraction of words on the issue that were spoken by a woman. We observe no significant differences in how women's issues are treated in reserved or unreserved villages. In addition, relative to men, women are more likely to get a constructive response to a question they ask. This suggests that, given the low level of female participation in unreserved villages (women do not speak at all at half the meetings in unreserved village councils), the very fact that female leadership increases female participation can be important for policy outcomes.

The link between political reservation and policy outcomes has been widely studied. In this paper we extend this evidence in two important ways: across space and over time. We use two new data sources: an All India survey (known as the Millennial survey) which covers the large Indian states and data from West Bengal villages (Birbhum survey) which vary in whether they have been reserved once, twice, or never. In both cases, we find results consistent with earlier findings (Chattopadhyay and Duflo, 2004). Women leaders are more likely to invest in drinking water facilities across rural India and across electoral cycles, since access to drinking water is an important public good that is emphasized more by female leaders, relative to male leaders.

Some recent papers report public good investments by female leaders either on non-water related goods (Munshi and Rosenzweig, 2010) and that women's performance is sensitive to institutional features (Ban and Rao, 2008b). Neither paper, however, finds evidence of women doing a worse job in providing public goods. Bardhan et al. (2010) exploit within-village (over time) variation in reservation in West Bengal and find no impact of female reservation. One possibility to reconcile these findings is offered by our long-run Birbhum results. We find evidence of women maturing as leaders over time and expanding the scope of their investments (while continuing to emphasize drinking water). In addition, there is some evidence that the influence of reservation on public good provision persists even after reservation ends—this may explain why comparing outcomes within a village during and after reservation (as Bardhan et al., 2010 do) may understate the reservation impact.

Taken together, this body of evidence provides several insights that can help structure some of the ongoing debates on political reservation in India and other countries. First, it is inappropriate to extrapolate from political selection to actual policy outcomes. Women who are elected leaders differ from men in significant ways and have access to different social networks and support structures. However, this does not imply that they have no political agency. Second, there is significant evidence that women leaders make different policy decisions and increase female participation in the political process. That said, to the extent that female villagers and female leaders share the same preferences, we cannot completely disentangle the policy impact of greater female villager participation from the direct role of female leadership (in future work we hope to disentangle the two). This suggests that women's reservation at the state and national legislatures has the potential to empower women and improve the gender balance in policymaking.

The remainder of the paper is structured as follows. We first discuss our datasets and empirical strategy. Then we evaluate, in turn, the impact of reservation on selection, citizen participation, and public good outcomes.

## Data and Empirical Strategy

### *Data*

Our analysis makes use of several datasets which we describe below.

**MEETING SAMPLE.** We measure villager participation in the political process using data on 197 GS meetings collected during 2003–04. To ensure representativeness, we selected GPs from eight districts located in two North Indian and three South Indian states.<sup>2</sup> These five states differ substantially along economic and social dimensions, allowing us to capture significant heterogeneity in both the level of village infrastructure and female empowerment.

We collected meeting data via an observer in attendance, and a tape recording of the proceedings. Each recording was subsequently transcribed and then translated into English.<sup>3</sup> Transcripts were coded by hand to capture various kinds of information about the GS meetings. The average meeting

2. In Rajasthan and West Bengal our samples are drawn from a single district. In Andhra Pradesh, Kerala, and Karnataka we worked in two districts per state. Within each district our sample is stratified by block. Within a block we randomly sampled GPs.

3. The transcripts were typed up to follow a consistent format that identifies the speaker's title, his/her gender, and the actual dialogue.

lasted 112 minutes and the number of words spoken per meeting was 3,749 (but the variation was wide; standard deviation was 2,737 words, and the maximum was 18,387 words).

**MILLENNIAL SURVEY.** We obtain nationally representative data on public good provision from the “Millennial Survey.” This survey was conducted by the Public Affairs Centre, and covered 36,542 households in 2,304 randomly selected villages in 24 states in the year 2000.<sup>4</sup> We restrict attention to the 11 major states that had an election between 1995 and 2000.<sup>5</sup>

The survey aimed to provide an independent assessment of key public services, using citizen feedback as well as direct evaluation of facilities. It focused on five basic public services: drinking water and sanitation, health, education and child care, road transport, and the public distribution system. It contains both subjective measures of the quality and objective measures of the quantity and quality of public goods provided in each village.

The household survey measured final users’ subjective evaluation of public services: respondents answered questions about access, quality, reliability, and their overall satisfaction with public goods.<sup>6</sup> Several questions were asked about whether households found it necessary to pay bribes to obtain access to certain public services. As the provision of some of these services is the GP’s responsibility, these questions present a measure of the incidence of corruption.

The household survey was complemented by independent site visits, which included assessments of select public facilities such as water sources, primary schools, clinics, etc.<sup>7</sup> For each facility, a detailed survey was completed. We use the survey to construct a composite index of quality (ranging between 0 and 1). To measure quantity we use either the number of available facilities (such as hand pumps, public taps, buses) or in the case of schools,

4. The Public Affairs Centre is a non-government organization in Bangalore which is credited for starting the “report card movement” in India. The analysis using the Millennial survey was conducted while one of the authors was an intern with the organization in Bangalore in spring 2003.

5. The term for a GP was set at five years after the 73rd Amendment, but in some states elections were not held on time. The 11 states included are Andhra Pradesh, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal.

6. Number of respondents varies by question, because citizens were only asked about services available in their village.

7. Again, number of responses for these questions varies from question to question because a type of public good could not be assessed in a particular village if the good was not available.

public health centers and fair price shops, an indicator of whether these public goods were available in the village.<sup>8</sup>

**BIRBHUM SAMPLE.** We supplement the Millennial data on public goods with data from a village survey conducted by the authors in 2005 in 495 villages in Birbhum district in West Bengal. This dataset covers all 165 GPs in the district. A key feature of this dataset is that it includes GPs which were randomly assigned to either never be reserved, be reserved once, or reserved twice. This allows us to trace the medium-term impact of political reservation. The public goods data was collected through a Participatory Resource Appraisal (PRA) survey while the data on bribes comes from a household survey which was designed to be identical to the Millennial survey (the data are described in more detail in Beaman et al., 2009).

**RESERVATIONS DATA.** In all cases we use administrative data on the reservation status of GPs, typically obtained from the district administration. For the Millennial survey villages, we collected information on reservations from visits to the State Election Commissions and Rural Development Departments for 11 states in February 2003. Since less than a year had lapsed between the 2000 election and the Millennial survey, we used the 1995–2000 reservation status in all states. However, for flow measures of quality of public services such as cleanliness, maintenance, etc., we use the reservation status of the current Pradhan, i.e., during the 2000–05 mandate.<sup>9</sup> For over two-thirds of our sample villages, we could both match the village to the GP and identify Pradhan reservation status.<sup>10</sup>

8. At the time we had access to the Millennial survey, data on quantity of public drinking water facilities had not yet been reliably entered for the states of Himachal Pradesh, Kerala, and Punjab. As Punjab and Kerala happen to be the two states where villagers overwhelmingly rely on private sources of drinking water, we do not believe the omission of these states affects our findings. While more than 90 percent of respondents in other states indicated that they rely primarily on public sources for drinking water, in Kerala and Punjab the share of people relying on public sources was only 46 and 21 percent respectively.

9. Information on Pradhan reservation as of the end of 2000 was available for eight states: Andhra Pradesh, Karnataka, Kerala, Maharashtra, Orissa, Punjab, Tamil Nadu, and West Bengal. Our sample thus consists of approximately 810 villages when analyzing household satisfaction and availability of public services, and 680 villages when analyzing the quality of public services.

10. Sample attrition is unlikely to bias our estimate of the impact of reservation, since the unit of reporting was not the GP, but rather the district, and the proportion of GPs with women in each district was identical (by design) to the proportion in a state, or in the sample. The main consequence of non-random sample attrition would be to over-represent wealthier districts, as well as those with more competent administrators. For Uttar Pradesh, we were able to match mostly large villages to GPs. The regressions control for state fixed effects and village class dummies (a dummy of whether the village is small, medium, or large).

## Empirical Strategy and Randomization Balance Check

Our basic empirical strategy exploits the fact that the choice of GPs for reservation was randomized at the time of election, and rotated across election cycles. Therefore, when we use cross-sectional data we estimate the difference in outcomes across GPs reserved for women and those not so reserved. The canonical regression of interest for outcome  $y$  in  $g$  in state  $s$  is given in Equation (1):

$$y_{gs} = \alpha_s + \beta R_{gs} + \varepsilon_{gs}$$

where  $\alpha_s$  denotes strata fixed effect and  $R_{gs}$  is an indicator variable for whether the GP is reserved for a female. The coefficient of interest  $\beta$  is interpretable as the impact of reservation for women on the outcome of interest. Since very few women are elected from non-reserved seats this provides a reduced form estimate of the impact of female leadership.

Before turning to the results we first examine whether the randomization of GP reservation status appears balanced across covariates. To do this, we analyze village characteristics from 1991 Indian census village data, since this census predates the introduction of reservation.

Table A-1 presents the randomization check for GPs that enter our meeting sample and Table A-2 presents this check for GPs in the Millennial survey (the randomization check for the Birbhum sample is available in Beaman et al., 2009). In Columns (1) and (2) we present the mean of each variable for GPs that are reserved and those that are not. Column (3) shows the difference in the means while in Column (5) we report the difference as estimated in a regression which includes the relevant strata fixed effects. Both tables show balance on covariates, demonstrating that reservation was effectively randomized across GPs.

## Political Reservation and Selection

We start by examining the impact of reservation for women on politician selection. We ask whether reservation worsened the electoral prospects of Muslims and/or led to the selection of politicians who were more likely to rely on their spouses. Table 1 reports the regression results.

Many have expressed the concern that Muslim women may be particularly unlikely to stand for election and, therefore, reservation will reduce

**TABLE 1. Pradhan Selection and Behavior**

| <i>Sample</i>                   | <i>Before elections Pradhan:</i> |                   |                                 |                   |  |                   |   |  |   |  |
|---------------------------------|----------------------------------|-------------------|---------------------------------|-------------------|--|-------------------|---|--|---|--|
|                                 | <i>Pradhan is Muslim</i>         |                   | <i>Spouse suggested running</i> |                   | <i>Was aware of how Panchayat worked</i> |                   | <i>Spouse helps with Panchayat work</i> |  | <i>Now feel competent to discharge duties</i> |  |
|                                 | <i>Meeting</i>                   | <i>Birbhum</i>    | <i>(3)</i>                      | <i>(4)</i>        | <i>(5)</i>                               | <i>(6)</i>        | <i>(7)</i>                              |  |   |  |
| GP currently reserved for woman | 0.015<br>(0.054)                 | -0.035<br>(0.064) | 0.116<br>(0.048)                | -0.181<br>(0.080) | -0.150<br>(0.077)                        | 0.172<br>(0.083)  | -0.098<br>(0.075)                       |  |   |  |
| Number of observations          | 196                              | 157               | 161                             | 161               | 161                                      | 161               | 160                                     |  |   |  |
| Unreserved sample:              |                                  |                   |                                 |                   |  |                   |   |  |   |  |
| Mean                            | 0.132<br>(0.340)                 | 0.234<br>(0.149)  | 0.018<br>(0.013)                | 0.727<br>(0.172)  | 0.383<br>(0.171)                         | 0.053<br>(-0.120) | 0.699<br>(0.171)                        |  |   |  |

Source: Columns (2)–(7) use data from the Birbhum sample, while Column (1) uses the data from village meetings.

Note: All columns reflect linear probability model estimates. Column (1) includes block fixed effects, and Columns (2)–(7) include district fixed effects. Standard errors adjusted for heteroskedasticity are reported below the coefficients.

net Muslim representation. In Columns (1) and (2) we report regressions where the outcome of interest is whether the Pradhan is Muslim, and we use the meetings and Birbhum datasets respectively. In neither sample do we find evidence of crowd-out—there is no significant difference in the likelihood that a Muslim would stand for election from a reserved versus unreserved GP.

In Beaman et al. (2009) we found that those elected from reserved GPs are younger, less educated, and have less political experience. However, they are no more likely to be the spouse of a previously elected Panchayat councilor. Here, we examine whether spouses play an important role in prompting women to run for election and in helping them discharge their duties. Our analysis draws on detailed household surveys administered to Pradhans in the Birbhum sample. In Column (3) the outcome of interest is whether the Pradhan's spouse suggested that s/he run. Female Pradhans elected from reserved GPs are 12 percent more likely to state that this was the case, relative to their unreserved counterparts. Again, relative to these counterparts, female Pradhans from reserved GPs are 18 percent and 15 percent more likely to state that prior to the election they did not know their job responsibilities and were not aware of how the Panchayat functioned (Columns [4] and [5]). This is consistent with the evidence in Beaman et al. (2009) that these leaders are less likely to have held prior political positions. Perhaps, as a consequence of political inexperience, these female Pradhans are also more likely to state (relative to unreserved Pradhans) that their spouse helps them with job responsibilities, Column (6). Yet, two years into their job, Pradhans from reserved GPs feel as competent as Pradhans from unreserved GPs when it comes to discharging their duties.

### **Political Reservation and Citizen Participation**

Next, we use the meetings dataset to examine whether female leadership directly affects villager participation in the political process.

We start by using regressions of the form given in Equation (1) to examine whether political reservation influences villager participation in GS meetings. The results are in Table 2. Columns (1) and (2) show that men are twice as likely to attend GS meetings as women. The average GS meeting in an unreserved GP has 86 men and 40 women attending. Attendance is unaffected by political reservation. In Column (3) we examine whether reservation influences participation by female villagers in the GS meetings. We measure villager participation by whether s/he spoke during the meeting.

**T A B L E 2. Panchayat and Villager Participation at Meeting**

|                                 | Number of men attending | Number of women attending | Do women speak   | Fraction of issues with female villager participation |                  | Fraction of words spoken by Panchayat | Pradhan chaired GS | Pradhan speaks at least once during GS |
|---------------------------------|-------------------------|---------------------------|------------------|---|------------------|---------------------------------------|--------------------|--|
|                                 | (1)                     | (2)                       | (3)              | All   | West Bengal      | (6)                                   | (7)                | (8)                                    |
| GP currently reserved for woman | -3.919<br>(21.219)      | -6.727<br>(7.709)         | 0.129<br>(0.064) | 0.075<br>(0.044)                                      | 0.030<br>(0.076) | -0.071<br>(0.037)                     | -0.358<br>(0.063)  | -0.228<br>(0.081)                      |
| Mean of unreserved              | 85.901<br>(146.965)     | 40.157<br>(57.127)        | 0.519<br>(0.502) | 0.268<br>(0.332)                                      | 0.083<br>(0.240) | 0.575<br>(0.334)                      | 0.838<br>(0.370)   | 0.830<br>(0.378)                       |
| Number of observations          | 197                     | 197                       | 172              | 172   | 44               | 172                                   | 190                | 134                                    |

Source: This table uses data from the village meeting sample.

Notes: All regressions include district fixed effects. Standard errors adjusted for heteroskedasticity are reported below the coefficients. Columns (1)–(4) and (6)–(7) include the full set of meeting data. Column (5) restricts the meeting data to only those meetings which occurred in West Bengal (all in Birbhum district). Column (8) excludes Karnataka due to missing data.

Overall, female participation in GS meetings is low, with female villagers speaking in roughly half the GS meetings. However, the likelihood that a woman speaks increases by roughly 25 percent when the GP leader position is reserved for a woman.<sup>11</sup> In Column (4) we examine whether increased female voice in a GS meeting translates into increased participation across multiple issues. Here, the results parallel our findings for whether a woman speaks at all—in the average unreserved GS meeting women participate in discussions on roughly a quarter of the issues raised during each meeting. This number increases by 25 percent when there is reservation, with the effect significant at the 10 percent level. In Column (5) we reestimate this regression for the sub-sample of GPs in West Bengal and find that the point estimate of the effect of reservation is smaller than in the full sample and not precisely estimated. However, it should be noted that the fraction of issues with female villager participation in unreserved GPs is lower in West Bengal than in the full sample, and there are only 44 meetings in West Bengal.

Columns (6)–(8) examine the actual participation by female leaders (relative to male leaders) in the meeting. Here the news is more disappointing. In GPs reserved for women, Panchayat representatives speak less often, the Pradhan is less likely to chair the meeting and is also less likely to have spoken at least once during the meeting. Interestingly, our data show that other GP officials, including the vice Pradhan, are more likely to chair the meeting in reserved GPs. It is not, however, the case that the Pradhan's spouse is more likely to chair the meeting. That said, it remains the case that reservation makes it 50 percent more likely that the chair of the GS meeting is a female.

One potential reason why women speak more in GS meetings headed by women leaders is that they believe women leaders are more likely to respond positively to their concerns. This could occur either because policy preferences vary across genders or because leaders discriminate against the opposite gender. To examine this we turn to an issue-level analysis of the GP data.

In the average meeting, six issues were discussed. For each issue we coded the public good or concern that the issue was related to, who initiated discussion on the issue, and the number of words on the issue spoken (separately) by male and female villagers and Panchayat leaders. We coded the kind of response the Panchayat gave to villagers who raised an issue. Our first coding was very detailed, and we then collapsed these categories into

11. Note there are only 172 observations since the 22 transcripts which were not readable are not included, though we have information collected from the observer on participation.

whether or not the leader said the Panchayat will take unconditional action on the issue at hand. Table A-3 shows our coding of leaders' responses. For instance, we code the response as unconditional if the leader says the Panchayat will do what the villagers ask or provides the requested information. It equals zero if the leader claims it is not the Panchayat's problem. The following is an excerpt from a transcript, which falls in the negative response category:

Villager: Let us pass a resolution stating that the persons cooking mid-day-meals are not being paid reasonably so instead of ₹ 5/- they may be paid ₹ 10/-.”  
Pradhan: “Let me tell you that this is not a local issue. It has to be dealt with at the central government level.”

Next, we create a measure of female friendliness of an issue. To do so, we average the fraction of words spoken by a woman on the issue across all transcripts. Table A-4 describes the female-friendliness of issues, as measured by the fraction of words on the issue spoken by a woman (across all GPs in our sample). Women speak the most on financial transfers followed by public works and water.

Let  $y_{igs}$  equal one for issue  $i$  if the leader states that the Panchayat will take unconditional action on the issue. (Most GP meetings are attended by government officials and GP representatives. We, therefore, consider two outcome variables—one where we only focus on the GP representatives' responses and one where we include responses by GP and government officials.) We estimate regressions using the following two specifications in Equation (2) and (3):

$$y_{igs} = \alpha_g + S_{igs} + S_{igs} \times R_{gs} + v_{igs}$$

$$y_{igs} = \alpha_g + W_{igs} + W_{igs} \times R_{gs} + w_{igs}$$

where we include a GP level fixed effect  $\alpha_g$ .  $S_{igs}$  is a measure of the female-friendliness of the issue, and  $W_{igs}$  is a dummy which indicates whether the issue was brought up by a man or a woman.

With the first estimating equation, whose results are presented in Table 3 Columns (1) and (3), we simply examine whether leadership response across reserved and non-reserved GPs differs depending on the female friendliness of the issue. In Columns (2) and (4) we estimate the second equation, and examine whether or not the response given to women is, in general, more positive in woman-headed Panchayats. The results are very similar for the two outcome samples. In both cases we observe no significant differences in either how women are treated, or how women's issues are treated in

**TABLE 3. Panchayat and Government Response: Individual Issues in Meeting**

|   | <i>Panchayat will take unconditional action in response to issue</i> |                   | <i>Panchayat or government will take unconditional action in response to issue</i> |                   |
|---|--|-------------------|--|-------------------|
|   | (1)  | (2)               | (3)  | (4)               |
| Ranking: Average fraction of words spoken by women on issue | 0.490<br>(0.454)   |                   | 0.521<br>(0.453)   |                   |
| Reserved * Ranking (fraction of words)                      | -0.869<br>(0.816)  |                   | -0.900<br>(0.816)  |                   |
| Reserved * Woman spoke on issue                             |  | -0.019<br>(0.097) |  | -0.019<br>(0.097) |
| Woman spoke on issue  |  | 0.103<br>(0.057)  |  | 0.103<br>(0.057)  |
| Number of observations                                      | 782  | 782               | 782  | 782               |
| Unreserved sample:  |  |                   |  |                   |
| Mean  | 0.308  |                   | 0.310  |                   |
| Standard deviation  | (0.462)  |                   | (0.463)  |                   |

Source: This table uses data from the village meeting sample.

Notes:

The \* (asterisk) indicates that the indicated variables are interacted with one another.

1. All regressions include village meeting fixed effects. Standard errors adjusted for heteroskedasticity are below the coefficients.

2. The outcome variable in Columns (1)–(2) is an indicator variable reflecting whether a member of the Panchayat government responded that they would take action on the issue, and the dependent variable in Columns (3)–(4) indicates unconditional action if either a member of the Panchayat or any other government official, including MLAs or bureaucrats, made such a promise in the meeting. See Table A-3 for a detailed description of how the action variables are coded.

3. “Ranking: Average fraction of words spoken by women on issue” and “Ranking (fraction of words)” are both the average fraction of words spoken by women on each issue over all transcripts in which that issue was raised, and is our measure of the female-friendliness of the issue.

4. Reserved is an indicator for the GP currently being reserved for a female GP, as used in Table 1. “Woman spoke on issue” is an indicator variable which is 1 if any female villager spoke on that issue and 0 otherwise.

reserved or unreserved villages. Interesting, women are more likely to get a constructive answer to a question they asked, both in reserved and unreserved GPs. This suggests that encouraging women to participate may be the most important obstacle to getting women’s policy concerns addressed (at least in these meetings). Our results suggest reservation can play a key role here. Below, we examine the link between reservation and policy outcomes and also provide some evidence on whether female participation in meetings appears to increase their policy influence.

## Female Leaders and Public Good Outcomes

The facts that, relative to their male counterparts, female Pradhans are less politically experienced and rely more on family networks (especially their spouses) to conduct their work has led to the suggestion that they are, in effect, proxies for powerful men in the village. If correct, this view implies that reservation should not alter policies in the direction of what women want, and may lead to a worsening of democracy through elite capture (see Chattopadhyay and Duflo, 2004 for a model). On the other hand, women leaders do have different preferences, and as we saw, women are more likely to speak up in GPs headed by women. Thus, if women leaders enjoy political agency then these two channels could lead to the contrary outcome, namely, that female leadership leads to the implementation of policies that are (relatively) favored by women.

Existing evidence largely supports the view that reservation for women alters which public goods are provided. However, the evidence concerns specific places and relatively short term horizons. We revisit this issue using two datasets. The first dataset allows us to examine the average effect of reservation across villages located in 11 large Indian states. This helps address concerns that gender differences in public good provision found in earlier work may be locale specific and non-generalizable. Second, we use data from a district in West Bengal, Birbhum, where we are able to examine whether this policy influence varies across electoral cycles. This helps address the concern that women elected in the first cycle of reservation may be “special” in many ways and their policy activism may be very different from that undertaken by women elected in subsequent electoral cycles. We also investigate whether men elected after women reverse women’s policy decisions.

## Millennial Survey: Nationwide Evidence

We start by using data from the Millennial survey which, by virtue of its national coverage, provides significant generalizability of results (at least in the Indian context). Table 4 examines how women policymakers affect the quality and quantity of several public services. Panel B of columns (1) and (2) present the means of the quantity and the quality for five categories of public goods, and the coefficient on a woman Pradhan dummy in the following regression, run separately for each good  $k$ . See Equation (4):

$$Y_{jk} = \alpha_k + \beta_k R_j + X'_{j\gamma k} + \varepsilon_{jk}$$

**T A B L E 4. Effect of Female Leadership on Public Goods Quality, Quantity, and Satisfaction**

| Dependent variable            | Quantity                  |                   |                         | Quality          |                           |                   | Satisfaction      |                   |                   |
|-------------------------------|---------------------------|-------------------|-------------------------|------------------|---------------------------|-------------------|-------------------|-------------------|-------------------|
|                               | Mean                      | Norm. reservation | Mean                    | Mean             | Reservation               | Mean              | All               | Men               | Women             |
|                               | (1)                       | (2)               | (3)                     | (4)              | (5)                       | (6)               | (7)               | (8)               |                   |
| <b>A. Overall</b>             |                           |                   |                         |                  |                           |                   |                   |                   |                   |
| Weighted average              | 4.352                     | 0.078<br>(0.041)  | 0.569                   | 0.016<br>(0.011) | 0.818                     | -0.020<br>(0.010) | -0.020<br>(0.010) | -0.020<br>(0.010) | -0.017<br>(0.013) |
| <b>B. By Public Good Type</b> |                           |                   |                         |                  |                           |                   |                   |                   |                   |
| Water                         | 20.106<br>(33.462)<br>633 | 0.191<br>(0.098)  | 0.392<br>(0.189)<br>611 | 0.020<br>(0.014) | 0.835<br>(0.297)<br>6,802 | -0.024<br>(0.018) | -0.021<br>(0.022) | -0.027<br>(0.021) |                   |
| Education                     | 0.938<br>(0.241)<br>810   | 0.130<br>(0.064)  | 0.892<br>(0.242)<br>543 | 0.015<br>(0.021) | 0.855<br>(0.198)<br>3,661 | -0.013<br>(0.011) | -0.010<br>(0.011) | -0.024<br>(0.023) |                   |
| Transportation                | 2.260<br>(1.017)<br>635   | -0.020<br>(0.082) | 0.306<br>(0.292)<br>596 | 0.006<br>(0.025) | 0.747<br>(0.309)<br>7,212 | -0.022<br>(0.015) | -0.026<br>(0.017) | -0.015<br>(0.022) |                   |

|                          |                  |                  |                  |                  |                  |                   |                   |                   |
|--------------------------|------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|
| Fair price shops         | 0.774<br>(0.419) | 0.028<br>(0.069) | 0.688<br>(0.289) | 0.023<br>(0.027) | 0.891<br>(0.189) | -0.007<br>(0.016) | -0.007<br>(0.016) | 0.008<br>(0.029)  |
|                          | 805              |                  | 498              |                  | 3,868            |                   |                   |                   |
| Public health facilities | 0.645<br>(0.479) | 0.066<br>(0.072) | 0.654<br>(0.352) | 0.017<br>(0.036) | 0.803<br>(0.366) | -0.063<br>(0.033) | -0.086<br>(0.039) | -0.027<br>(0.053) |
|                          | 809              |                  | 355              |                  | 741              |                   |                   |                   |

Source: This table uses data from the Millennium survey.

Notes:

1. Standard deviation and number of observations below the mean, and standard errors (corrected for clustering at the GP level) below the coefficients.
2. All coefficients expressed in number of standard deviations of the independent variables.
3. The standard errors of the weighted averages of the coefficients are obtained by jointly estimating the coefficient in a SUR framework.
4. Regressions control for state fixed effects and village class dummies.
5. The water quantity variable is the number of public drinking water taps and hand pumps in the village.
6. The water quality variable is a 0–1 index aggregating the responses to the following questions (by observations) drain around source, no leakage, washing platform, caretaker, public latrine, drainage.
7. The education quantity variable is an indicator of whether there is any education facility (school or non-formal education center) available in the village. The education quality variable is an index aggregating the answer to the questions: quality of school's playground, blackboard, toilet, and availability of drinking water.
8. The transportation quantity variables is the number of public transportation facilities the village (public and private buses, vans, taxis, etc.). The transportation quality variable is a 0–1 index aggregating the responses to the following questions: shelter at bus stand, information about bus, whether bus is new, whether the road repaired in the past 6 months.
9. The fair price shop quantity variable is an indicator of whether there is a fair price shop available in the village. The fair price shop quality variable is a 0–1 index aggregating the responses to the following questions (responses obtained by observation) prices displayed, prevalence of arguments and complaints, behavior of shopkeeper.
10. The Public health quantity variable is an indicator of whether there is a public health center available in the village. The Public health quality variable is a 0–1 index aggregating the responses to the following questions (responses obtained by observation) cleanliness of linens, floors, bathrooms and toilets, and availability of safe drinking water for patients.

where  $Y_{jk}$  is the quantity (quality) of goods of type  $k$  in village  $j$ ,  $R_j$  is a dummy variable indicating whether or not the village was part of a GP where the position of the Pradhan was reserved for a woman as of the beginning of 2000 and  $X_j$  is a vector of control variables (state fixed effects and a dummy for the size of the village).<sup>12</sup> We also analyze the average effect of female politicians across all public goods in Panel A. We estimate it in Equation (5):

$$\beta = \left( \frac{1}{N} \right) \sum_{k=1} N_k$$

where  $N_k$  is the number of observations used in the good  $k$  regression and  $N$  is the sum of all observations in the five regressions.<sup>13</sup>

Consistent with the results in Chattopadhyay and Duflo (2004) reservation for women increases investment in drinking water infrastructure. There are significantly more public drinking water taps and hand pumps when the GP is reserved for a woman, and there is also some evidence that the drinking water facilities are in better condition (though this coefficient is not significant at the 5 percent level).<sup>14</sup> Overall, there are four positive coefficients and only one negative coefficient in the quantity regression. In the quality regression, all coefficients are positive. The average effect of reservation on the availability of public goods in a village is positive and significant (the coefficient is 0.078 standard deviations, with a standard error of 0.041). The average effect of the reservation on the quality of public goods is positive as well, but not significant (the coefficient is 0.016 standard deviations, with a standard error of 0.011). To summarize, women leaders do a better job at delivering drinking water infrastructure, and at least as good a job at delivering the other public goods.

Female Pradhans, however, receive systematically less favorable evaluation from villagers (including female villagers) than male Pradhans. The household module of the Millennial survey measured the final users' subjective evaluation of public services: respondents answered questions about access, quality, reliability, and their overall satisfaction with public goods.

12. For easy comparison across types of public goods, all the variables are expressed as standard deviations from the mean of the distribution in the unreserved villages.

13. The standard error for these averages is derived from the variance covariance matrix for the five coefficients obtained from jointly estimating the equations for the five public goods (see Kling et al., 2007).

14. Chattopadhyay and Duflo (2004) find that the effect of reservation on other public goods, including education and transportation, is either insignificant or opposite in sign in the two states they consider. Consistent with these results as well, there are no significant coefficients for the other public goods in the All India Millennial survey.

Using the estimation strategy as presented in Equation (2), Column (6) displays the impact of women policymakers on villagers' satisfaction with each of the five public services, as well as the average effect across all services. In contrast to the positive effect of female leaders on quantity and quality of public services, respondents are less likely to declare that they are satisfied with the public goods they are receiving in villages with female Pradhans. On average, they are 2 percentage points less likely to be satisfied. This number is significant at the 95 percent level, and it also corresponds to a large (25 percent) relative increase in the rate of dissatisfaction, since the satisfaction ratings are overall very high.<sup>15</sup> This is true for every good individually (though not significant when each good is looked at in isolation), and for female as well as male respondents. Particularly striking is the fact that individuals are less satisfied with water service, even though both the quality and quantity of drinking water facilities is higher in reserved villages. The coefficient on dissatisfaction is 2.4 percentage points, with a standard error of 1.8. Moreover, women are as likely to be dissatisfied as men. Interestingly, respondents are also significantly less satisfied with the quality of the public health services when the Pradhan is a woman. This is despite the fact that health services were centrally administered and not under the jurisdiction of GPs in the 11 states in the study in this period. There was thus no reason the quality of health services should be different in reserved GPs (indeed, our objective measures of quality and quantity are uncorrelated with the reservation variable).<sup>16</sup>

15. The fraction of respondents saying that they are satisfied is 82 percent, averaged across all goods.

16. One possibility is that women invest in the wrong kinds of repairs. For example, they may spend more public money repairing the water facilities and building new ones, but their repairs may not correspond to what villagers really need. To assess to what extent the quality and quantity variables we include correspond to respondents' concerns, and to get some sense of how controlling for these variables affects the evaluation of women, we have estimated the following regressions:

$$Y_{ijk} = \alpha_k + \lambda_k Q_{jk} + \mu_k Q_{ijk} + \nu_k Q_{jk} \times R_j + \psi_k Q_{ijk} \times R_j + X_{jYk} + \nu_{jk} + \varepsilon_{ijk}$$

where  $Q_{jk}$  is the quantity of public good  $k$  in village  $j$  and  $Q_{ijk}$  is the quality of public good  $k$  in village  $j$ . Across all goods, we find that villagers' satisfaction is positively and significantly associated with quality, but not with quantity. The coefficient on the reservation dummy is still negative. The interactions between the quality and the women reservation dummy and quantity and the women reservation dummy are both negative, suggesting that women are given less credit for both quality and quantity. However, they are given some credit: the sum of the quality variable and its interaction with the women reservation variable is still positive and significant. It is interesting to note that in the regression across all public goods, the coefficient on the women reservation dummy is similar in magnitude but opposite in sign to the

A first possibility is that the higher quantity and quality of public goods provided by women Pradhan come at a higher price. To evaluate this hypothesis we examine the incidence of bribes in reserved and unreserved villages. We estimate the coefficient  $\beta_k$  in the regression in Equation (6):

$$Y_{ijk} = \alpha_k + \beta_k R_j + X_{j\gamma k} + v_{jk} + \varepsilon_{ijk}$$

where  $Y_{ijk}$  is a dummy variable indicating whether respondent  $i$  in village  $j$  had to pay a bribe to get good  $k$ . The regression is run at the individual level, and we correct for clustering of the standard errors at the GP level. Table 5 reports the mean value for whether the respondent had to pay a bribe, and the coefficient of the reservation dummy. For all types of bribes, respondents (both men and women in Columns [3] and [4]) are less likely to report that they needed to pay a bribe to obtain a service when the GP is reserved for a woman than when it is not reserved. Overall, both men and women are significantly less likely to have to pay a bribe to obtain a service if they live in a GP where the position of Pradhan is reserved for a woman. Women leaders are less corrupt than men, suggesting that the higher quantity infrastructure does not come at a higher price.

Given this, we hypothesize that two factors appear to contribute to the lower reported satisfaction with drinking water in reserved GPs. First, relative to their male counterparts, women receive less credit for investments. Second, the base level of satisfaction with women leaders (irrespective of quality or quantity) is lower to start with. This is consistent with Beaman et al. (2009) where we present evidence which suggests that this dissatisfaction reflects incorrect priors regarding the effectiveness of women as leaders. In West Bengal, prior reservation leads to an amelioration in this bias, however, which is another reason why quota may affect policy making in the long run (on this, also see Bhavnani, 2009).

### Long-term Data: Birbhum in West Bengal

Our second source of data comes from a village survey conducted by the authors in 2005 in 495 villages in Birbhum district in West Bengal.

---

coefficient on the quality variable. This implies that the effect of having a female Pradhan on satisfaction is as large as the impact of transforming the average quality of the public goods available in the village from entirely “good” to entirely “bad” (e.g., a water source with no drain, no coverage, some leaks, etc.) in this scale.

**TABLE 5. Effect of Female Leadership on Corruption**

| <i>Dependent variable</i>                    | <i>Effect of reservation</i> |                    |                   |                   |                            |                   |                   |
|--|------------------------------|--------------------|-------------------|-------------------|----------------------------|-------------------|-------------------|
|  | <i>Mean</i>                  | <i>No controls</i> |                   |                   | <i>Individual controls</i> |                   |                   |
|  |                              | <i>All</i>         | <i>Male</i>       | <i>Female</i>     | <i>All</i>                 | <i>Male</i>       | <i>Female</i>     |
|  | (1)                          | (2)                | (3)               | (4)               | (5)                        | (6)               | (7)               |
| <b>A. Overall</b>                            |                              |                    |                   |                   |                            |                   |                   |
| Weighted average bribes                      | 0.102                        | -0.015<br>(0.010)  | -0.026<br>(0.016) | -0.025<br>(0.016) | -0.016<br>(0.010)          | -0.027<br>(0.016) | -0.032<br>(0.015) |
| <b>B. By Public Good Type</b>                |                              |                    |                   |                   |                            |                   |                   |
| 1 if paid bribe for getting public tap fixed | 0.105<br>(0.306)<br>4,713    | -0.017<br>(0.016)  | -0.041<br>(0.030) | -0.003<br>(0.015) | -0.019<br>(0.016)          | -0.043<br>(0.030) | -0.004<br>(0.015) |
| 1 if paid bribe for ration card              | 0.058<br>(0.233)<br>3,761    | -0.015<br>(0.012)  | -0.013<br>(0.012) | -0.020<br>(0.027) | -0.015<br>(0.012)          | -0.012<br>(0.012) | -0.027<br>(0.027) |
| 1 if paid bribe to police                    | 0.340<br>(0.474)<br>423      | -0.011<br>(0.048)  | 0.010<br>(0.051)  | -0.359<br>(0.133) | -0.019<br>(0.049)          | 0.005<br>(0.053)  | -0.510<br>(0.105) |
| 1 if paid bribe for medical services         | 0.178<br>(0.382)<br>749      | -0.009<br>(0.032)  | -0.019<br>(0.037) | 0.005<br>(0.060)  | -0.009<br>(0.033)          | -0.017<br>(0.038) | 0.030<br>(0.062)  |

Source: This table uses data from the Millennium survey.

Notes:

1. Standard deviation and number of observations below the mean, and standard errors (corrected for clustering at the GP level) below the coefficients.

2. The standard errors of the weighted averages of the coefficients are obtained by jointly estimating the coefficient in a SUR framework.

3. Regressions in Columns (1)–(4) control for state fixed effects and village class dummies.

4. Regressions in Columns (5)–(7) control for state fixed effects, village class dummies, household size, property, religion, caste, education, occupation, and respondent gender.

Panel A of Table 6 estimates the effect of reservation where we compare public good investments in reserved and unreserved GPs in 2005 (in the middle of the second reservation cycle). In Column (6), we compare the investments across GPs that are currently reserved and GPs that are currently unreserved. The main results in Chattopadhyay and Duflo (2004) are replicated here: there are more investments in water infrastructure, sanitation, and roads in GPs reserved for women (all these results are significant). Moreover, there are three other results that are significant at least at the 10 percent level, all of which are positive: we see more investment in school repair, health center repair, and irrigation facilities. This is different from what was found after just one cycle of reservation, where there

**TABLE 6. Effect of Female Leadership on Public Goods Quantity (Birbhum)**

|   | <i>N</i> | <i>Coefficients on:</i>   |                           |                                  | <i>Mean of never reserved</i> | <i>Diff. Reserved 2003 vs not reserved 2003</i> |
|---|----------|---------------------------|---------------------------|----------------------------------|-------------------------------|---|
|   |          | <i>Only reserved 2003</i> | <i>Only reserved 1998</i> | <i>Reserved in 2003 and 1998</i> |                               |   |
| <b>Panel A</b>  |          |                           |                           |                                  |                               |   |
| At least one new tube well was built  | 495      | 0.152<br>(0.066)          | 0.073<br>(0.063)          | 0.160<br>(0.088)                 | 0.365<br>(0.482)              | 0.131<br>(0.052)                                |
| At least one new tube well was repaired                                       | 482      | 0.208<br>(0.067)          | 0.130<br>(0.064)          | 0.080<br>(0.089)                 | 0.628<br>(0.484)              | 0.120<br>(0.052)                                |
| At least one drainage/sanitation facility was built                           | 495      | 0.053<br>(0.067)          | -0.113<br>(0.059)         | 0.052<br>(0.091)                 | 0.428<br>(0.496)              | 0.089<br>(0.054)                                |
| At least one drainage/sanitation facility was repaired                        | 396      | 0.150<br>(0.067)          | -0.017<br>(0.062)         | 0.032<br>(0.071)                 | 0.178<br>(0.384)              | 0.110<br>(0.048)                                |
| At least one irrigation pump was built  | 495      | 0.137<br>(0.053)          | 0.005<br>(0.051)          | -0.013<br>(0.050)                | 0.180<br>(0.385)              | 0.081<br>(0.040)                                |
| At least one irrigation pump was repaired                                     | 319      | 0.110<br>(0.092)          | -0.078<br>(0.086)         | -0.005<br>(0.123)                | 0.417<br>(0.495)              | 0.103<br>(0.072)                                |
| Number of metal roads built or repaired since 2003                            | 495      | 0.274<br>(0.117)          | 0.046<br>(0.070)          | 0.079<br>(0.065)                 | 0.118<br>(0.448)              | 0.189<br>(0.084)                                |
| Number of transportation related infrastructure (bus stop, bus service, taxi) | 495      | 0.074<br>(0.175)          | 0.250<br>(0.160)          | 0.303<br>(0.225)                 | 1.302<br>(1.201)              | 0.075<br>(0.138)                                |
| At least one educational facility was built                                   | 495      | 0.053<br>(0.042)          | -0.030<br>(0.036)         | 0.026<br>(0.055)                 | 0.117<br>(0.322)              | 0.053<br>(0.032)                                |
| At least one educational facility was repaired                                | 465      | 0.165<br>(0.072)          | 0.039<br>(0.069)          | 0.001<br>(0.097)                 | 0.296<br>(0.458)              | 0.094<br>(0.057)                                |
| At least one community education center                                       | 495      | -0.007<br>(0.010)         | 0.030<br>(0.023)          | -0.001<br>(0.009)                | 0.009<br>(0.095)              | -0.015<br>(0.008)                               |

|   |      |                   |                   |                   |                  |                   |
|---|------|-------------------|-------------------|-------------------|------------------|-------------------|
| There is a NGO child center/crèche                              | 495  | -0.045<br>(0.016) | -0.039<br>(0.021) | -0.027<br>(0.023) | 0.045<br>(0.208) | -0.026<br>(0.012) |
| Number of health facilities (PHC, Health subcenter)             | 495  | -0.025<br>(0.049) | 0.027<br>(0.052)  | -0.005<br>(0.084) | 0.257<br>(0.468) | -0.027<br>(0.044) |
| At least one health facility was built                          | 495  | 0.011<br>(0.015)  | -0.004<br>(0.014) | -0.018<br>(0.009) | 0.014<br>(0.116) | 0.002<br>(0.009)  |
| At least one health facility was repaired<br>(0 if no facility) | 495  | 0.061<br>(0.023)  | 0.016<br>(0.016)  | 0.047<br>(0.024)  | 0.009<br>(0.095) | 0.051<br>(0.018)  |
| Number of trained Dais, untrained Dais and private<br>doctors   | 495  | -0.069<br>(0.232) | -0.158<br>(0.226) | 0.384<br>(0.423)  | 1.014<br>(2.012) | 0.146<br>(0.215)  |
| <b>Panel B</b>  |      |                   |                   |                   |                  |                   |
| Average bribes  | 7404 | -0.094<br>(0.031) | -0.045<br>(0.038) | -0.072<br>(0.029) |                  | -0.072<br>(0.027) |

Source: This table uses data from the Birbhum sample. Panel A uses the village surveys of 495 villages. Panel B uses the household surveys.

Notes:

1. All regressions include block fixed effects. Standard errors corrected for clustering at the GP level are below the coefficients.
2. "First Reserved 2003," "Reserved 1998 and 2003," "Only Reserved 1998," and "Never Reserved" are indicator variables for GPs reserved for a female Pradhan for the first time in 2003, in both 1998 and 2003, only in 1998, and not reserved in either election, respectively.
3. Average bribes is the average number of households who paid a bribe for obtaining a BPL card or drinking water connection according to the household survey in Birbhum, normalized by the never reserved sample.
4. Panel B also includes: (i) Individual controls: age, age squared, household size, religion, caste dummies (for scheduled caste, scheduled tribe and other backward caste), years of education, a wealth index (based on a principal component analysis using household assets) and dummy for land ownership; (ii) village controls: all variables in Table 1 by Beaman et al. (2009); and (iii) Survey year and surveyor gender indicator.

was no effect on any of these variables (and in fact a negative affect on the probability that the GP starts an informal school).

The interaction of reservations for Scheduled Caste and Scheduled Tribe and the reservations for women implies that some GPs are reserved twice in a row. To shed more light on the dynamics of the reservation effects, in Table 6 Columns (2) to (4) we present the investment results separately for newly reserved GPs, GPs reserved twice in a row, and GPs that are currently unreserved but were reserved before. In these columns, each cell reports the coefficient from a separate regression where the outcome variable is investment in the public good referenced in that row. The reported coefficient can be interpreted as the difference in investment outcomes in GPs with a certain reservation status relative to GPs that have never been reserved. As five years before, we find that newly elected women invest more in building and repairs of tube wells, roads, and sanitation and drainage. The difference from the earlier finding is that we now find that there is *more* investment in irrigation and schools, issues that are more “male issues.” Women elected in the second cycle appear to do more across the board. The overall results were driven by these newly reserved GPs: for GPs reserved for the second time, the only significant difference is that women invest more in building tube wells. The coefficients on repairs are all positive but insignificant, perhaps because many of the repairs already took place.

Though public goods are mainly financed by state government funds, villagers may have to pay for these goods through means such as voluntary contributions and bribes. Panel B of Table 6 shows that on average, individuals in currently reserved GPs are less likely to have paid a bribe for obtaining a BPL card or drinking water connection. This is true for both GPs reserved for the first and second time. This echoes the results from the Millennial survey.

Overall, these tables show that the results that women leaders invest more than their male counterparts in water-related infrastructure are extremely robust across time and space. Both in newly reserved GPs and in GPs reserved for the second time, women are 50 percent more likely to build a new tube well. A concern might be that as soon as men take over, they undo these investments. Column (3) shows that this is not the case: Pradhans elected in previously reserved GPs are not investing less in building new tube wells. Moreover, they also invest *more* in tube well repairs than Pradhans do in GPs that have never been reserved, and as much as new leaders. Thus, the increase in water infrastructure availability seems to be a permanent step up, not a temporary phenomenon.

## Women's Preferences: From General to Specific Concerns

Column (1) in Table 7 replicates the specification in Chattopadhyay and Duflo (2004) using the meetings data: we regress investment in each type of good on whether women care particularly on the issue, which is measured by the fraction of words regarding this issue that are spoken by women in the entire sample of unreserved GPs.<sup>17</sup> As before, we find that women invest more in goods preferred by women.

We have emphasized two channels through which having female leaders may lead to greater investments in goods women care about: through the fact that a woman leader has the opportunity to do what she feels is important, and also because women are more likely to express their opinion in GPs

**TABLE 7. Investments in Birbhum**

|  | <i>Average quantity of public good provision</i> |                   |
|--|--|-------------------|
|  | <i>(1)</i>                                       | <i>(2)</i>        |
| Ever reserved GP   | -0.124<br>(0.132)                                | -0.243<br>(0.388) |
| Ever reserved * average fraction of words women spoke on issue at GS | 2.098<br>(1.335)                                 | 3.950<br>(3.140)  |
| Ever Reserved * fraction of words women spoke on issue at this GS    |  | 0.560<br>(0.195)  |
| Number of observations   | 2,475  | 390               |

Source: This table uses data from the Birbhum sample. Standard errors below the coefficients are corrected for clustering at the GP level.

Notes:

1. The asterisk (\*) indicates that the indicated variables are interacted with one another.
2. "Ever Reserved" is 1 if the GP was reserved for a female Pradhan in either 1998 or in 2003, and 0 otherwise.
3. The outcome variable is the average quantity across infrastructure built or repaired since 2003 in the following areas: drinking water, public works (sanitation, roads, transportation), education, health, and irrigation. The table tests whether there is more investment in reserved GPs in goods mentioned more frequently by women, as measured by the fraction of words spoken by women on a given issue in the Gram Sabha meetings. See also Chattopadhyay and Duflo (2004).

17. This is the number of words spoken by female villagers divided by the total words spoken on that issue by all villagers, averaged over the unreserved sample. The issues included are: drinking water, public works (sanitation, roads, transportation), education, health, and irrigation. We exclude the issues financial help, rents and taxes, miscellaneous, and government which do not obviously correspond to specific public goods measurable in the PRA we implemented in West Bengal.

that are led by women. Though it is beyond the scope of this paper to try to distinguish between the two channels, we provide some relevant evidence in Column (2) of Table 7. In that table, in addition to the variable indicating whether a particular issue is pertinent for women *in general* we introduce the equivalent measure, but for women of this particular Gram Sabha: the number of words spoken by women of this GP on this particular issue, divided by the number of words spoken by both men and women. This allows us to examine whether women leaders are sensitive to the expressed needs of women in their GPs. The number of observations is severely reduced, because the variable is not defined when villagers have not said anything (which happens often). Despite this, there is clear evidence that, controlling for women's taste in general, women leaders are particularly responsive to the needs of women *in their* GP. Of course, the possibility remains that what women want in a GP also happens to be what the women leader wants (since she lives there as well). Nevertheless, this suggests that the needs of local women are better taken into account by women leaders.

## Conclusion

Taken together, the results in this paper paint a consistent picture of female activism prompted by access to elected positions in village councils. First, we find no evidence of crowd-out of other disadvantaged groups (here, Muslims). Second, female leaders play two important roles—they increase female participation and responsiveness to female concerns in village meetings. Thus, they change the nature of policy activism across Indian villages. Whether the latter improves villagers overall well-being is, of course, an open question though the results on bribes are encouraging here. Also, the long-term data from Birbhum suggests that as women mature within the system their sphere of policy activism broadens. More broadly, our findings are also related to a growing literature on deliberative democracy (see Ban and Rao, 2008a and references within). This literature has emphasized the importance of increasing citizen participation in deliberative processes; here, we find evidence that political reservation increases female villagers' participation in such deliberative processes.

We would argue that these results both provide lessons for the ongoing debate on gender quotas in India and beyond, and also point to important areas for future research. First, our results on selection suggest that women and men differ in the political and social networks they have access to and

the extent to which they rely on family support. However, this per se does not determine the nature of their policy activism. Interestingly, evidence from other countries (France and Spain) suggest that a main concern with the selection associated with gender quotas relates to how parties manipulates quotas *not* the quality of available female leaders. Parties often choose to place women in relatively uncompetitive jurisdictions (Frechette et al., 2008) or in worse positions on the party list (Volart and Bagues, 2010). In that sense, use of the Indian village council method of random reservation of political positions may be a good way of limiting bias. Second, the results that female leaders increase female participation is intriguing and suggests that political reservation may have implications for female (and possibly male) turnout. Finally, the precise nature of female activism at the state and national level is harder to predict. Evidence from the United States (Miller, 2008; Rehavi, 2007) and India (Bhalotra and Clots-Figueras, 2010; Figueras, 2007) suggests that health and education may be important additional areas where women legislators make an impact. Whether, at the same time, the distributive concerns associated with female representation are accentuated is less clear but worthy of further investigation.

## APPENDICES

**TABLE A - 1. Comparison of Reserved and Unreserved Villages in Meeting Sample**

| <i>Dependent variable</i>            | <i>Mean unreserved</i> | <i>Mean reserved</i> | <i>Difference</i> | <i>N</i> | <i>Reservation effect with district fixed effects</i> |
|--------------------------------------|------------------------|----------------------|-------------------|----------|---|
|                                      | (1)                    | (2)                  | (3)               | (4)      | (5)   |
| Total population                     | 4,038                  | 3,364                | -674<br>(719)     | 192      | 65<br>(509)   |
| Literacy                             | 0.409                  | 0.406                | -0.002<br>(0.025) | 190      | -0.010<br>(0.015)                                     |
| Percentage of irrigated land         | 0.353                  | 0.327                | -0.026<br>(0.046) | 186      | -0.068<br>(0.032)                                     |
| 1 if village has a bus or train stop | 0.788                  | 0.725                | -0.062<br>(0.059) | 188      | 0.005<br>(0.051)                                      |
| Has a pucca road                     | 0.677                  | 0.563                | -0.115<br>(0.069) | 188      | -0.060<br>(0.063)                                     |
| Number of health facilities          | 0.539                  | 0.498                | -0.042<br>(0.125) | 195      | 0.012<br>(0.116)                                      |
| 1 if village has tube well           | 0.394                  | 0.486                | 0.092<br>(0.074)  | 188      | 0.026<br>(0.050)                                      |
| 1 if village has hand pump           | 0.672                  | 0.653                | -0.020<br>(0.071) | 188      | 0.031<br>(0.042)                                      |
| 1 if village has well                | 0.811                  | 0.662                | -0.149<br>(0.064) | 188      | -0.062<br>(0.056)                                     |
| 1 if village has community tap       | 0.346                  | 0.220                | -0.126<br>(0.066) | 188      | -0.056<br>(0.061)                                     |
| Total number of schools              | 3.528                  | 3.318                | -0.210<br>(0.600) | 188      | 0.191<br>(0.553)                                      |
| Number of villages per GP            | 1.884                  | 2.351                | 0.467<br>(0.304)  | 195      | -0.073<br>(0.072)                                     |
| SUR over all variables               |                        |                      | -0.085<br>(0.069) |          | -0.030<br>(0.057)                                     |

Source: The authors used the raw data from the 1991 Census of India to generate the tables. The tables are not re-prints from a report labelled "Census of India".

## Notes:

1. Standard errors below the coefficients in Columns (3) and (5).
2. Regressions in Column (5) control for district fixed effects.

**TABLE A-2. Comparison of Reserved and Unreserved Villages in 1991 (Millennial Survey)**

| <i>Dependent variable</i>            | <i>Mean unreserved</i> | <i>Mean reserved</i> | <i>Difference</i> | <i>N</i> | <i>Reservation effect with state fixed effects</i> |
|--------------------------------------|------------------------|----------------------|-------------------|----------|--|
|                                      | (1)                    | (2)                  | (3)               | (4)      | (5)  |
| Total population                     | 2,817                  | 2,805                | -12<br>(229)      | 938      | 66<br>(120)  |
| Literacy                             | 0.396                  | 0.378                | -0.018<br>(0.012) | 938      | -0.012<br>(0.010)                                  |
| Female literacy                      | 0.282                  | 0.263                | -0.019<br>(0.013) | 940      | -0.009<br>(0.010)                                  |
| Male literacy                        | 0.502                  | 0.486                | -0.016<br>(0.012) | 940      | -0.012<br>(0.010)                                  |
| Percentage of irrigated land         | 0.282                  | 0.342                | 0.059<br>(0.032)  | 642      | 0.034<br>(0.023)                                   |
| 1 if village has a bus or train stop | 0.627                  | 0.554                | -0.073<br>(0.034) | 940      | 0.021<br>(0.025)                                   |
| Number of health facilities          | 0.604                  | 0.685                | 0.081<br>(0.121)  | 809      | 0.126<br>(0.122)                                   |
| 1 if village has tube well           | 0.335                  | 0.308                | -0.027<br>(0.040) | 789      | -0.031<br>(0.031)                                  |
| 1 if village has hand pump           | 0.699                  | 0.751                | 0.052<br>(0.034)  | 786      | -0.009<br>(0.026)                                  |
| 1 if village has well                | 0.724                  | 0.703                | -0.020<br>(0.032) | 898      | -0.032<br>(0.028)                                  |
| 1 if village has community tap       | 0.393                  | 0.373                | -0.020<br>(0.036) | 825      | 0.026<br>(0.030)                                   |
| Number of primary schools            | 1.857                  | 1.780                | -0.077<br>(0.135) | 919      | -0.004<br>(0.106)                                  |
| Number of middle schools             | 0.714                  | 0.689                | -0.025<br>(0.065) | 839      | -0.021<br>(0.050)                                  |
| Number of high schools               | 0.371                  | 0.364                | -0.007<br>(0.046) | 808      | 0.026<br>(0.036)                                   |
| Total number of schools              | 2.832                  | 2.726                | -0.105<br>(0.201) | 920      | -0.012<br>(0.142)                                  |

Source: Census of India, 1991.

Notes:

1. Standard errors below the coefficients in Columns (3) and (5).

2. Regressions in Column (5) control for state fixed effects and village class dummies.

TABLE A-3. Action Coding

| <i>Action description from transcript</i>                                   | <i>Code</i> | <i>Unconditional Panchayat action promised</i> | <i>Unconditional government or Panchayat action promised</i> |
|---|-------------|--|--|
| Will do what villagers ask for  | 1           | 1  | 1  |
| No commitment on action but claim they will follow up                       | 2           |  |  |
| Action conditional on higher up (money or sanction)                         | 3           |  |  |
| Action conditional on villagers action                                      | 4           |  |  |
| No response   | 5           |  |  |
| Make unrealistic promises to appease villagers and end meeting              | 6           | 1  | 1  |
| Other   | 7           |  |  |
| Insufficient funds  | 8           |  |  |
| Villagers instructed to attend meeting with NGO/ government officials       | 9           |  |  |
| Instructed villagers to pay taxes   | 10          |  |  |
| Threaten villagers with cutting services                                    | 11          |  |  |
| Claim not Panchayat's problem   | 12          |  |  |
| Villagers asked to repay loans  | 13          |  |  |
| Provided information requested by villagers                                 | 14          | 1  | 1  |
| Not under Panchayat's jurisdiction  | 15          |  |  |
| Claim problem has already been solved                                       | 16          |  |  |
| Request villagers take action/solve problem on own                          | 17          |  |  |
| Insufficient population for project to be approved                          | 18          |  |  |
| Instructed villagers to contact other government agency                     | 19          |  |  |
| Villagers request not allowed under scheme                                  | 20          |  |  |
| Service only to be provided by private sector                               | 21          |  |  |
| Instructed to submit application  | 22          |  |  |
| Form women's association  | 23          |  |  |
| Action by official conditional on Panchayat's action                        | 24          |  |  |
| Government official claims Panchayat must sanction work                     | 25          |  |  |
| Work proceeding as quickly as possible                                      | 26          |  |  |
| Government official refuses to help but Panchayat claims will find solution | 27          | 1  | 1  |
| Claim they are evaluating applications according to policies                | 28          |  |  |
| Postponed gram sabha  | 29          |  |  |
| Instructed villagers to attend gram sabha                                   | 30          |  |  |
| Need land allocated for project first                                       | 31          |  |  |
| Implement rainwater harvesting  | 32          |  |  |
| Will provide alternative solution to what will requested                    | 33          | 1  | 1  |
| Cannot solve problem (technically)  | 34          |  |  |

(Table A-3 continued)

(Table A-3 continued)

| <i>Action description from transcript</i>                                | <i>Code</i> | <i>Unconditional Panchayat action promised</i> | <i>Unconditional government or Panchayat action promised</i> |
|--|-------------|--|--|
| Suggested women's association take out loan for project                  | 35          |  |  |
| Project/scheme has been cancelled  | 36          |  |  |
| Villagers decide to take action themselves                               | 37          |  |  |
| Must wait until next year  | 38          |  |  |
| Need attendance of engineer  | 39          |  |  |
| Panchayat already funded project once; will not fund again               | 40          |  |  |
| Insist policy is appropriate as is                                       | 41          |  |  |
| New scheme available to solve problem                                    | 42          |  |  |
| Scheme not available to all eligibles due to lack of funding             | 43          |  |  |
| MLA claims can get gov't to solve problem                                | 44          |  | 1  |
| Asked villagers to obtain bank loan                                      | 45          |  |  |
| Action conditional on completion of other public works project           | 46          |  |  |
| Panchayat claims following all rules and regulations                     | 47          |  |  |
| Panchayat agrees with problem but offers no solution                     | 48          |  |  |
| MLA commits to solving problem while Panchayat hesitant                  | 49          |  | 1  |
| MLA encourages students passing exam in order to improve school facility | 50          |  |  |
| Action requested by villagers still pending                              | 51          |  |  |
| Action to be decided on in next meeting                                  | 52          |  |  |

Source: This table was generated by the authors using the data from the GP meetings (i.e., the Meeting Sample) described in the main text of the paper.

**TABLE A-4. Female-friendliness of Issues**

| <i>Issue</i>    | <i>Fraction of words spoken by women</i> |
|-----------------|--|
| Water           | 0.163                                    |
| Public works    | 0.163                                    |
| Financial help  | 0.225                                    |
| Rents and taxes | 0.139                                    |
| School          | 0.122                                    |
| Health          | 0.151                                    |
| Agriculture     | 0.067                                    |
| Miscellaneous   | 0.000                                    |
| Government      | 0.082                                    |

Source: Appendix Table 4 was generated by the authors using the data from the GP meetings (i.e., the Meeting Sample) described in the main text of the paper.

**TABLE A - 5. Birbhum Household Outcomes**

|                           | Number of SHG with own bank account: PRA data |                                       | Self-help groups: household data |                    |                   |                    | Women's mobility  |  |
|---------------------------|---|---------------------------------------|----------------------------------|--------------------|-------------------|--------------------|-------------------|--|
|                           | (1)   | Balance in savings account (with SHG) |                                  | Normalized average |                   | Normalized average |                   |  |
|                           |   | Male (2)                              | Female (3)                       | Male (4)           | Female (5)        | Male (6)           | Female (7)        |  |
| <b>Panel A</b>            |   |                                       |                                  |                    |                   |                    |                   |  |
| Ever reserved             | 1.086<br>(0.486)                              | 246.72<br>(61.38)                     | 202.71<br>(92.34)                | 0.017<br>(0.021)   | 0.019<br>(0.023)  | 0.037<br>(0.022)   | -0.007<br>(0.022) |  |
| <b>Panel B</b>            |   |                                       |                                  |                    |                   |                    |                   |  |
| First reserved 2003       | 0.624<br>(0.637)                              | 438.11<br>(120.56)                    | 191.59<br>(129.18)               | 0.033<br>(0.037)   | 0.034<br>(0.034)  | -0.003<br>(0.031)  | -0.011<br>(0.031) |  |
| Reserved in 1998 and 2003 | 1.570<br>(0.774)                              | 222.50<br>(103.38)                    | 186.75<br>(133.60)               | 0.002<br>(0.031)   | 0.032<br>(0.037)  | 0.106<br>(0.040)   | 0.022<br>(0.033)  |  |
| Only reserved 1998        | 1.244<br>(0.630)                              | 71.79<br>(76.49)                      | 226.88<br>(169.70)               | 0.012<br>(0.022)   | -0.004<br>(0.021) | 0.031<br>(0.027)   | -0.023<br>(0.030) |  |
| Mean of unreserved        | 4.36  | 643.47                                | 683.33                           |                    |                   |                    |                   |  |
| SD of unreserved          | (6.39)  | (651.64)                              | (791.31)                         |                    |                   |                    |                   |  |

|   |       |       |       |       |
|---|-------|-------|-------|-------|
| Test of only 2003 = both = only 1998                | 0.974 | 0.020 | 0.084 | 0.518 |
| Test of only 2003 * FC = both * FC = only 1998 * FC |       |       |       |       |
| N   | 495   | 1,282 | 6,780 | 6,780 |

Source: This table uses data from the Birbhum sample.

Notes:

1. The asterisk implies the multiplication sign, the common way of indicating the two variables are interacted with one another, since the variable used is the Reserved dummy variable interacted with the Ranking (fraction of words) variable.
2. The following variables were included in the normalized average. *Self-help groups*: participation indicator; outstanding loan from SHG; balance in savings; and last month's savings contribution. Teenagers' own aspirations: an indicator for not wanting to be a housewife; wish to have high education job (doctor, engineer, teacher, legal professional, or nurse); wish to be Pradhan; wish to marry after age of 18; wish to graduate or get higher education. *Women's mobility*: number of times a woman left the village or took a bus in previous 30 days; number of times a woman visited her parents in past 12 months; and whether a woman can go unescorted to her parents' village or to the next village.
3. Controls include (i) respondent-level variables: for children aspirations, age, age squared, illiterate, < 5 years of schooling, 5–10 years of schooling; for teenager aspirations, age and age squared; (ii) household-level variables: household size, SC, ST, OBC, landless, Muslim, wealth (quartiles 1–4), interviewer female, interview round; and (iii) village-level variables: total population, SC/ST share, sex ratio under age 6, percent literate, female literacy, percent of irrigated land, bus or train stop, pucca road to village, tube well, hand pump, well, community tap, number of schools, number of health facilities.
4. Block fixed effects are included and standard errors are clustered at the GP level.

## Comments and Discussion

**Devesh Kapur:** The paper examines the effects of mandated group representation, in this case, women in Panchayat leadership positions and provides evidence on three different aspects of the debate on gender quotas in politics: politician selection, citizen participation in politics, and policymaking. It argues that the results from several surveys—a carefully designed methodology that sampled the records of 197 GP meetings recorded across 5 states; a survey conducted in 2005 survey of 495 villages in West Bengal’s Birbhum district; and the nationally conducted Millennial survey which covered 36,542 households across 2,304 randomly selected villages across 24 states in 2000—all underline that access to elected positions in village councils results in greater female activism. The resulting shifts in political discourse lead to different policy outcomes: women leaders covered by these surveys are more likely to invest in drinking water facilities, and in the long run, in more public programs across the board.

### Interpreting Political Context

The key findings of the paper draw from the analysis of 197 GP meetings. While the methodological elegance of randomized trials allows the authors to draw clear inferences, the small sample size raises questions on external validity of these results. This is by no means a representative picture for all of India; indeed, another study in West Bengal—covering the entire state as opposed to just one district (Birbhum) as in this study—did not find evidence of any impact of reservations for female panchayat leaders.<sup>1</sup> The authors explain this discrepancy by arguing that their results are over a longer time period and point to evidence of women maturing as leaders over time and (thereby) having an effect. More importantly they argue that by “focusing on data from India, albeit at a different level of governance, we are able to hold cultural and institutional contexts constant.” Given the sheer cultural diversity across India the assumption that cultural context is constant across India seems heroic. Indeed the paper itself finds that the estimates for the

1. Bardhan et al., 2010.

likelihood that a woman speaks in a Panchayat with a woman Pradhan are much weaker for West Bengal. The cultural context for women in states like Rajasthan or Haryana is very different than in the southern states. Would the estimates be lower there as well and if so, would they weaken or strengthen the normative case for mandated reservations?

Similarly, the assumption of a constant institutional context glosses over the reality that elections are fundamentally political and there is considerable political and institutional variation across India. For example, what might the findings of this sort of study be in areas affected by the Panchayat Extension to Scheduled Areas (PESA) Act of 1996?<sup>2</sup> Similarly the paper's findings that there is no evidence of crowding-out of other disadvantaged groups (here, Muslims) is based on evidence from southern states and West Bengal. Is this broadly applicable to North India where fears of crowding out of OBCs, have led political parties representing these groups to vociferously oppose mandated representation of women at the national and state level?

Technically, political parties are not allowed in Panchayat elections. In practice, they are very much involved. The role political parties play in different contexts would also illustrate whether co-partisanship matters, i.e., are the effects different if the Pradhan is a co-partisan of the MLA or the incumbent state government. Future work could attempt to weave the political landscape of different GPs into the analysis and perhaps draw more robust conclusions for specific contexts, rather than a few generalizations for India as a whole.

While the study demonstrated empowerment of female constituents as a result of reservations, it is unclear why female Pradhans in reserved positions were found less likely to chair meetings or speak at least once during a meeting. An exploration of possible explanations—e.g., why/how were meeting chairs selected, or why/how did female constituents voice issues of their concern (were they selected by the chair to speak in turn?)—might illuminate more about how female leadership translates to greater attention to issue areas of interest to women.

An inquiry into the managerial competence of female Pradhans might also indicate their ability to extract more resources or better encourage participation, relative to their male counterparts. As with any skill, political skills are partly a matter of practice and experience and are partly taught. To this end the Indian government has launched the Rashtriya Gram Swaraj Yojana

2. This act extends panchayats to the tribal areas of nine States of India (Andhra Pradesh, Chattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Maharashtra, Madhya Pradesh, Orissa and Rajasthan) to provide self-governance to and recognize the rights of indigenous communities (Government of India, 2010).

and the Panchayat Mahila Evam Yuva Shakti Abhiyan (PMEYSA), which aims at strengthening the capacities of elected women and youth representatives in Panchayati Raj institutions. The main objectives of the scheme are to build the self-confidence of women Panchayat leaders and enable them to articulate their problems as so that they overcome the institutional, societal, and political constraints that prevent them from active participation in Panchayats. It is unclear from the paper whether the authors controlled for this program and whether it has had any effects.

The evidence that women leaders are more likely to allocate additional funds to issue areas of concern to them, especially drinking water, supports findings from other studies. It is therefore puzzling that the paper finds that respondents are less likely to declare that they are satisfied with the public goods (water, health) they are receiving in villages when the Pradhan is a woman. Moreover, women are as likely to be dissatisfied as men. This echoes the findings of earlier work that female Pradhans in reserved positions and the programs they implement are viewed less favorably by constituents than their male counterparts.<sup>3</sup>

Why aren't people happy with female leadership? One possibility could be that the base level of satisfaction with women is lower. Understanding this issue would be helpful in evaluating whether, in fact, constituents generally give women less credit for investments and whether their baseline appreciation of women is lower than that of men, as suggested in the paper.

The paper's findings that constituents were found less likely to have to pay bribes to obtain services under female Pradhans in reserved positions is also consistent with findings that more political representations of women are associated with less corruption.<sup>4</sup> This could be either because women are intrinsically less prone to corruption, or because their relative political inexperience means that they don't know how to be corrupt—given enough time and experience there will be a reversion to the mean. Alternatively, reservations for women means that elections are less competitive and as a result the cost of Panchayat elections is lower which means that elected women Panchayat leaders from reserved constituencies have lower cost recovery targets. The link between election financing, reservations, and bribery levels needs further investigation.

An important finding of the paper is that reservations appear to not only improve the instrumental aspects of democracy but also the substantive aspects, namely, democratic deliberation by enhancing participation of

3. Duflo and Topavola, 2004.

4. Dollar, Fisman, and Gatti, 2001.

female constituents. The normative implications are obvious and needs highlighting. However, it seems to assume that more deliberation is an intrinsically superior outcome and does not examine how deliberation affects political dynamics. For example, studies examining deliberation over the Internet<sup>5</sup> and Biju Rao's research based on the same GP transcripts used in this study suggests that deliberation is the cause of heightened conflict at the village level.

## Drawing Policy Conclusions

While the paper offers evidence that reservations have enhanced female participation in political discourse and increased delivery of certain public goods (particularly in drinking water infrastructure), the case for reservations as a policy mechanism to achieve this end is not evaluated; the authors found that the differences are explained by the leader's gender, not by reservations. A range of paths might be taken to improve women's empowerment and entry into leadership positions. Jensen and Oster have found that the spread of television in India has empowered women, for example.<sup>6</sup>

Yet from this data, the takeaways for Indian policymakers are not entirely clear. Is gender a political or a social identity and does mandated representation shift the balance from the latter to the former? If, as the paper argues, women Panchayat leaders learn political skills over time, the randomized method of selection of reserved Panchayats for women means that just when they gain experience their Panchayat becomes de-reserved. Is there a better alternative?

More analysis of the political context surrounding the paper's findings may help further isolate the role of reservations from a multitude of other factors, enriching the conclusions the paper draws. Enhanced participation in the deliberative process and increased investment in social programs can also be reached through avenues other than reservations for female leaders. Consequently, policies mandating representation must be subject to a cost-benefit analysis across contexts and time. Policymakers need to know the elasticity of the marginal impact of reservations on specific outcome measures. Only knowledge of these trade-offs would answer questions about the optimal percentage of positions to be reserved, when, and where. This also requires an understanding of what defines empowerment as a policy

5. For example, Sunstein, 2001. Specific studies include Spears et al., 2002.

6. Jensen and Oster, 2007.

goal, and how to judge its achievement. A sharper understanding of this goal would advance the debate on how appropriate reservations are as a solution, and at what point a sunset clause should be put in place to revert from such policies.

**Hari Nagarajan:** The literature on the impact of political reservation on women's welfare is growing. The evidence of impact suggested by this literature is varied. There is also this problem of the evidence being based on studies of specific villages or being germane to a particular political environment. A recent paper by Deininger, Jin, and Nagarajan (Forthcoming) has examined evidence from villages across India and found that the impact of political reservations is significant when it is related to political participation by women. This in turn leads to enhanced motivation on the part of women to actually contribute (financially even) to the development of communities. There is no impact on the quality of service delivery. Significantly, such effects persist even if the regime change is negative (i.e., a male is elected in place of a female).

This paper seems to be a synthesis of the work done by the third author and others. The paper shows that political reservations have several significant positive welfare outcomes. I feel that the jury is still out and contemplating on the matters being raised and purportedly proved. I will like to make a few remarks based on evidence that I have seen from the nationally representative Rural Economic and Demography Survey (REDS) datasets of NCAER. The reason is that the questions or the debates on women's reservations and women's empowerment are extremely difficult to articulate to the difficulties associated with separating out various causal factors. For instance, one of the issues that is being pointed out in the paper is that in villages where women participate more, or participate more effectively, or, women are leaders, there is better provision of public goods, particularly drinking water. What we have found however is that the magnitude of participation has increased. However, there is no significant change over time of the quality of provision of public goods (including drinking water).

Let me present evidence related to governance. Should we expect the patterns of allocation to match that of households' revealed preferences? We find over time that there is a degree of matching but there is also a significant degree of elite capture. We have also used vignettes to try and capture the degree of effectiveness of women leaders compared to male Panchayat Pradhans. Can women take matters related to governance to the Pradhan? One vignette went this way:

Meenakshi, the four year old daughter of Rajesh, fell ill after eating the food provided by the noon-meal program and Lakshmi, the wife of Rajesh went to complain to the school. She was rebuked and was asked to talk to Pradhan. She has since asked Rajesh, her husband, to talk to the Pradhan. (REDS Survey, 2006–2008)

The question was will Lakshmi be able to get the Pradhan to intervene. The answers from both male and female respondents were inconclusive (even in Panchayats reserved for women). We rephrased the issue. Here is Rakesh, who is the son of Brij Mohan and has similarly fallen ill. Now, we want to ask how easy it is for Brij Mohan to hold elected representatives accountable. We still could find differences that could be directly attributed to the gender of the elected representative.

The channels of impact of such legislative measures need to be articulated with greater clarity and I am not convinced that this paper achieves this. One of the points made in this paper is that the identity of village's leaders matter. There is then an attempt to suggest that commitment to policies increases with the "correct" gender. I am not convinced by the relevance of the commitment problem in the current context of devolution. If policies can be independently evolved then commitment is an issue. However, much of local governance is mere "post office type economics." That is, the elected officials can at most play a role in identifying beneficiaries. All of the governance is mandated by the higher level Panchayats and the state and central governments. In fact, without being explicitly stated, programs are put together to benefit specific ethnic groups.

There is also the prevalence of parochialism in voting, clientelism, that this paper bypasses. What I am getting at is that the channel of impact is clouded because of all these factors. Hence your finding should be such a big surprise. Since identity is an overriding factor, other forms identities such as *Jati* are becoming important at the time of elections. The numerical sizes of both own *Jati* and of the competing *Jati* matter. In being able to access and participate in welfare programs.

The type, nature, and intensity of participation in the Gram Sabha meetings depend on a number of factors such as prevalent attitudes, inheritance patterns. It might be interesting to see whether this pattern of participation has changed over time. I am also a bit skeptical of your results owing to the methodology not being able to accurately separate out the channel of effects. You might want to run a treatment regression and compare it to a placebo regression to isolate the impact of reservations on villages. I have tried it elsewhere to test on impact of legislations on inheritance by women members of households.

Another point that I have concerns about is that you evidence on the fact that bribes are probably lower in women headed Panchayats. My work on this area using the REDS data sets seem to suggest that bribes are often used by households as a tool to access public goods or access welfare programs. Sometimes, bribes are successful, sometimes they are not. We found that in male-headed Panchayats payment of bribe does not guarantee participation but in women headed Panchayats bribe guarantees participation. This perhaps is there in your findings.

Another interesting point that I found quite fascinating is the quantity versus quality of public goods provision. The pattern of management seems to matter and I think that this is an extremely important part of the paper which unfortunately is moved on to the periphery. I think that these regressions can be conditioned on the level of satisfaction with the Pradhan.

## **General Discussion**

Both T. N. Srinivasan and Ram Singh raised the question of voter preferences in determining both electoral and expenditure outcomes. T. N. Srinivasan noted that there had been a vigorous debate prior to Indian independence on separate electorates for Hindus and Muslims, where Mahatma Gandhi had argued that the entire population should be allowed to vote for candidates in reserved constituencies, not just Muslims as had been the preference of the British. Ram Singh made a similar point: even if the expenditure preferences of individual female candidates differed from those of male candidates, the fact that the electorate voting for them was of mixed gender, with a more assertive male segment should in principle have an impact on who was elected and subsequent expenditure preferences.

Ratna Sudarshan welcomed the paper's quantitative approach to issues that were more often explored qualitatively. On the basis of her observation of villages in North India, she believed that an important underlying factor was the existence of strong women's groups that had evolved to address practical needs (not just SHGs). In her experience, the presence of such groups both generated effective women leaders as well as energizing the village council (GS). It was also significant that access to water kept emerging as the central concern of excluded groups such as women (as shown here) or lower castes (in other studies). Improved access to water was clearly an important by-product of greater political inclusiveness.

Dilip Mookherjee noted that Pranab Bardhan and he had updated their earlier work in West Bengal, cited in the paper. Their findings on the impact of women's reservations were largely unchanged. More specifically, there was no significant effect on what the village as a whole received in women reservation villages, either in respect of public or private goods. However, women's reservation for the post of Pradhan (leader) did generate a significant negative effect on targeting to scheduled caste/scheduled tribe (SC/ST) households. This was in contrast to the outcome when the reservation is in favor of a leader from a SC/ST household.

Alakh Sharma cited the case of Bihar where 50 percent of gram panchayat leader positions are now reserved for women, and 55 percent of all such positions are now occupied by women. In his perception such strong female representation had not made an appreciable difference to priorities and outcomes in government programs. As indicated by Ratna Sudarshan, his work also found that access to drinking water dominated the agenda. By contrast neither sanitation nor early childhood nutrition (through the Integrated Child Development Services, or ICDS, program) seemed to be a major concern of the Panchayats.

On the basis of recent field research he also believed that reservation had been an important element in giving women confidence in a feudal, patriarchal setting, but their lack of confidence and experience often meant proxy control by their husbands. To overcome this would require an enormous program of training of women Panchayat leaders, much beyond current perfunctory efforts.

## References

- Ban, Radu and V. Rao. 2008a. "Is Deliberation Equitable? Evidence from Transcripts of Village Meetings in South India," mimeo, World Bank.
- . 2008b. Forthcoming. "Tokenism or Agency? The Impact of Women's Reservation on Village Democracies in South India," *Economic Development and Cultural Change*, 56: 501–530.
- Bardhan, Pranab K., Dilip Mookherjee, and Monica Parra Torrado. 2010. "Impact of Political Reservations in West Bengal Local Governments on Anti-Poverty Targeting," *Journal of Globalization and Development*, 1(1). Available online at <http://www.bepress.com/jgd/vol1/iss1/art5/>
- Beaman, Lori A., Raghav Chattopadhyay, Esther Duflo, Rohini Pande, and Petia Topalova. 2009. "Powerful Women: Can Exposure Reduce Bias?," *Quarterly Journal of Economics*, 124(4): 1497–1540.
- Besley, T. and S. Coate. 1997. "An Economic Model of Representative Democracy," *Quarterly Journal of Economics*, 112(1): 85–114.
- Bhalotra, S. and I. Clots-Figueras. 2010. "Health and the Political Agency of Women," mimeo, Bristol University.
- Bhavnani, R. 2009. "Do Electoral Quotas Work After They Are Withdrawn? Evidence from a Natural Experiment in India." *American Political Science Review*, 102(1): 23–35.
- Chattopadhyay, R. and E. Duflo. 2004. "Women as Policy Makers: Evidence from a Randomized Policy Experiment in India," *Econometrica*, 72(5): 1409–43.
- Dollar, David, Raymond Fisman, and Roberta Gatti. 2001. "Are Women Really the 'Fairer' Sex? Corruption and Women in Government," *Journal of Economic Behavior & Organization*, 46(4): 423–29.
- Duflo, Esther and Petia Topalova. 2004. "Unappreciated Service: Performance, Perceptions and Women Leaders in India." Available online at <http://econ-www.mit.edu/files/793> (accessed on January 25, 2011).
- Edlund, Lena and Rohini Pande. 2002. "Why Have Women Become Left-Wing? The Political Gender Gap and the Decline in Marriage," *The Quarterly Journal of Economics*, 117(4): 917–61.
- Clots-Figueras, I. 2009. "Are Female Leaders Good for Education? Evidence from India." Universidad Carlos III, Departamento de Economía.
- Frechette, G., F. Maniquet, and M. Morelli. 2008. "Incumbent Interests and Gender Quotas," *American Journal of Political Science*, 52(4): 891–909.
- Government of India. 2010. Ministry of Panchayati Raj, "PESA Act," Press Information Bureau, Ministry of Panchayati Raj, November 22, 2010. Available at: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=67376> (accessed May 7, 2011).
- Jensen, Robert and Emily Oster. 2007. "The power of TV: television and women's status in India," NBER Working Paper No. 13305. Available online at <http://papers.nber.org/papers/w13305> (accessed on January 25, 2011).

- Kling, J., J. B. Liebman, and L. Katz. 2007. "Experimental Analysis of Neighborhood Effects," *Econometrica*, 75(1): 83–119.
- Miller, G. 2008. "Women's Suffrage, Political Responsiveness, and Child Survival in American History," *Quarterly Journal of Economics*, 123(3): 1287–1327.
- Munshi, Kaivan and Mark Rosenzweig. 2010. "The Efficacy of Parochial Politics: Caste, Commitment, and Competence in Indian Local Governments," NBER Working Paper No. 14335.
- Pande, Rohini. 2003. "Can Mandated Political Representation Provide Disadvantaged Minorities Policy Influence? Theory and Evidence from India," *American Economic Review*, 93(4): 1132–51.
- Powley, Elizabeth. 2007. "Rwanda: The Impact of Women Legislators on Policy Outcomes Affecting Children and Families," Background Paper, State of the World's Children, UNICEF.
- Rehavi, M. Marit. 2007. "Sex and Politics: Do Female Legislators Affect State Spending?," mimeo, Berkeley.
- Spears, Russell, Tom Postmes, Martin Lea and Anka Wolbert 2002. "When are Net Effects Gross Products? The Power of Influence and the Influence of Power in Computer-Mediated Communication," *Journal of Social Issues*, 58(1): 91–107.
- Sunstein, C. 2001. *Republic.com*. Princeton NJ: Princeton University Press.
- Times of India*. 2010. "Rajya Sabha passes Women's Reservation Bill" *Times of India*, March 9. Available online at [http://articles.timesofindia.indiatimes.com/2010-03-09/india/28137030\\_1\\_unruly-scenes-women-s-reservation-bill-constitution-amendment-bill](http://articles.timesofindia.indiatimes.com/2010-03-09/india/28137030_1_unruly-scenes-women-s-reservation-bill-constitution-amendment-bill) (accessed on 29 April 2011).
- Bagues, M., and Esteve-Volart, B. 2010. "Are Women Pawns in the Political Game? Evidence from Elections to the Spanish Senate." FEDEA Working Paper.