

WOMEN POLITICIANS, GENDER BIAS, AND POLICY-MAKING IN RURAL INDIA

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Women Politicians, Gender Bias, and Policy-Making in Rural India

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Executive Summary

This paper studies how mandated political representation for women in India has affected policy outcomes and the well-being of children. It also examines how politically empowering women affects political participation by women villagers and the constituents' perceptions of female leaders. Since the mid 1990s, one third of Village Council chairman positions in India have been randomly reserved for a woman: in these councils only women could be elected to the position of chief. Village Councils are responsible for the provision of many local public goods in rural areas. Using datasets which combine individual level data with independent assessments of the quality of public facilities and direct observations of village meetings, we compare objective and subjective measures of the quantity and quality of public goods, children's health and educational outcomes, and villagers' evaluation of the performance of male and female leaders. Overall, villages reserved for women leaders have more public goods and the measured quality of these goods is at least as high as in non-reserved villages. Moreover, villagers are less likely to pay bribes in villages reserved for women. Children in villages headed by female leaders are more likely to have complete immunization and attend child care. The gender gap in school attendance is also significantly reduced in these villages. Furthermore, female leaders encourage women to participate in village meetings and are more responsive to their needs. Yet, residents in villages headed by women are less satisfied with the public goods, including goods that are beyond the jurisdiction of the Village council. We speculate that this may be evidence of gender bias in the appraisal of the competence and performance of women. The available data does not allow us to disentangle all the channels through which women empowerment may benefit children and other women. We conclude by describing a large on-going study in West Bengal that will be able to resolve many of the ambiguities of past research on the topic.

Résumé

Le présent article s'attache à montrer comment, en Inde, la représentation politique obligatoire pour les femmes a pesé sur les décisions politiques et le bien-être des enfants. Il examine aussi comment l'autonomisation politique des femmes affecte la participation politique des villageoises et la perception des dirigeantes par leurs constituants. En Inde, depuis le milieu des années 1990, un tiers des postes de président des conseils villageois va automatiquement à une femme : dans certains conseils choisis au hasard, seule une femme peut être élue chef de village. Les conseils sont chargés de fournir de nombreux biens publics locaux dans les zones rurales. En se servant de jeux de données combinant des données au niveau individuel, des évaluations indépendantes de la qualité des installations publiques et une observation directe des réunions villageoises, nous avons comparé des mesures objectives et subjectives de la quantité et de la qualité des biens collectifs, de la santé des enfants et des résultats sur le plan éducatif avec l'évaluation, par les villageois, des résultats obtenus par les dirigeants des deux sexes. En règle générale, les villages dont la direction a été réservée à des femmes ont plus de biens collectifs dont la qualité mesurée est au moins aussi élevée que dans les villages dont la direction n'a pas été réservée aux femmes. De plus, les villageois ont moins tendance à verser des pots-de-vin dans les villages réservés aux femmes. Les enfants de ces villages ont plus de chances d'avoir une vaccination complète et d'aller à la garderie. Le fossé entre les sexes en matière de fréquentation scolaire est aussi nettement moins profond dans ces villages. En outre, les dirigeantes encouragent les autres femmes à participer aux réunions du conseil et sont plus attentives à leurs besoins. Pourtant, les habitants des villages dirigés par des femmes sont moins satisfaits des biens collectifs, y compris ceux qui ne relèvent pas de la juridiction du conseil villageois. Nous émettons l'hypothèse qu'on peut détecter des préjugés sexistes dans l'évaluation de la compétence et du comportement des femmes. Les données disponibles ne nous permettent pas de démêler tous les canaux par lesquels l'autonomisation des femmes peut profiter aux enfants et aux autres femmes. Nous concluons en décrivant une importante étude en cours dans l'ouest du Bengale, laquelle permettra de lever certaines des ambiguïtés qui persistent dans les études menées sur ce sujet.

Resumen ejecutivo

Este documento estudia la manera en que la representación política obligatoria de la mujer en la India ha influido en los resultados de las políticas y el bienestar de la infancia. También examina cómo la autonomía política de la mujer influye en la participación política de las mujeres de las aldeas y en la percepción que tienen los electores de las mujeres dirigentes. Desde mediados de los años 1990, una tercera parte de los puestos de presidente de los Consejos de Aldea en la India se han reservado al azar para las mujeres: en estos consejos solamente las mujeres pueden ser elegidas para el puesto de jefas. Los Consejos de Aldea son responsables del suministro de muchos bienes públicos locales en las zonas rurales. Mediante la utilización de ficheros que combinan datos a nivel individual con evaluaciones independientes sobre la calidad de los establecimientos públicos y observaciones directas de las reuniones de las aldeas, hemos comparado una serie de medidas objetivas y subjetivas sobre la cantidad y la calidad de los bienes públicos, la salud de la infancia y los resultados educativos, y una evaluación del rendimiento de los dirigentes masculinos y femeninos realizada por los habitantes de las aldeas. En general, las aldeas reservadas a las mujeres dirigentes disponen de más bienes públicos y la calidad de estos bienes es por lo menos tan elevada como en las aldeas no reservadas. Además, los habitantes de las aldeas suelen pagar menos sobornos en los poblados reservados a las mujeres. Los niños de los poblados dirigidos por mujeres tienen más posibilidades de terminar su ciclo de inmunización y de atender a una guardería. La diferencia de género en la asistencia a la escuela es bastante menor en estos poblados. Además, las dirigentes femeninas alientan a las mujeres a participar en las reuniones de las aldeas y responden mejor a sus necesidades. Sin embargo, los residentes de los poblados dirigidos por mujeres están menos satisfechos con los bienes públicos, inclusive bienes que están más allá de la jurisdicción del Consejo de Aldea. Especulamos que esto puede deberse a un prejuicio sexista en la evaluación de la competencia y el rendimiento de las mujeres. Los datos disponibles no nos permiten esclarecer todos los canales por medio de los cuales la autonomía de la mujer puede beneficiar a los niños y otras mujeres. El estudio concluye con la descripción de un amplio estudio en marcha en Bengala Occidental que podría resolver muchas de las ambigüedades de las investigaciones realizadas hasta la fecha sobre este tema.

Introduction

Relative to their population share, women are underrepresented in political leadership positions throughout the world. In June 2000, women comprised only 13.8% of all parliament members in the world, up from 9% in 1987. Compared to economic opportunities, education and legal rights, political representation is the area in which the gap between men and women has narrowed the least between 1995 and 2000 (Norris and Inglehart, 2000). This gender gap in political representation coexists with a well-established gender gap in political views: women and men have different policy preferences with women more likely to support liberal policies, in particular spending on child care and other child related expenses (Lott and Kenny (1999), Edlund and Pande (2001) and Edlund, Haider and Pande (2003)). Evidence also suggests that compared to income or assets in the hands of men, income or assets in the hands of women raise spending on education, health, nutrition and other expenditures benefiting women and children (Lundberg, Pollak, and Wales (1997), Thomas (1990), Thomas (1997), Duflo (2003)). Increasing women's income also leads to higher survival rates for children and larger improvements in child health (Thomas 1990, 1997). Taken together, these facts would indicate that the policy decisions made by the world's predominantly male policymaking bodies may not reflect the policy priorities of women, including the wellbeing of children.

Recognizing this fact, many governments are taking active steps to encourage the participation of women in policy making, notably by establishing quotas for women in parliaments or in local governments. Quotas for women in assemblies or on parties' candidate lists are in force in the legislation of over 81 countries. In this paper we use data on the practice of mandated political representation for women in village governments in India to examine the implications of increased female representation for policy activism and children's well-being. We also examine how such representation affects political participation by women and the extent of gender discrimination.

While reservation policies clearly have a strong impact on women's representation, the fact that women and men may have different policy preferences need not imply that increased female representation will affect policy decisions. In a world where candidates care about electoral success and can commit to policies before elections, voter preferences, rather than the legislator's gender identity, will determine policy outcomes. Further, if men and women are equally likely to vote and monitor elected officials, the implemented policies should not exhibit any gender bias. Even if mandated political representation raises the bargaining power of women, increased female representation in politics should only affect transfers to women, not policy, as long as the preferences of different voters are known and individuals are not credit constrained. That is, the efficient policy choices will still be made, and women will be compensated with direct transfers. In these two worlds, we will see no impact of the gender of the policymaker on policy decisions, including policy decisions regarding women and children.

The preferences of politicians will have a direct effect on policy decisions, however, if institutions to ensure policy commitment on the part of politicians are limited or absent (Levitt (1996), Thomas (1990), Pande (2003)). If men and women have different policy priorities, then increasing female representation should shift the policy mix towards those favored by women. Even if the elected women and men have similar preferences, mandated female representation

can affect policy decisions by changing the mechanism by which preferences are aggregated. The fact the policymaker is a woman may affect the participation of other women in the political process, encouraging other women to raise issues and express their concerns (Banerjee and Somanathan, 2001). This has important implications for child welfare. As children do not participate directly in the electoral process, their influence on policy decision depends on who represents them. Numerous studies suggest that women represent children's interests more keenly than men (Lundberg, Pollak, and Wales (1997), Thomas (1990), Thomas (1997), Duflo (2003)). Political reservation could therefore lead to policies which are more favorable for the well-being of children.

Finally, the potential role of political reservation is related to the reasons women find it difficult to become politicians in the first place. One possibility is that it is hard for women to win elections, because voters believe female politicians are less effective. In this case, political reservation may allow voters to learn about the efficacy of women politicians, thereby changing male and female attitudes towards women leaders and in the long run affecting the decision making power of women within the household. On the other hand, women may indeed be less effective (at least initially) or voters may require time to adjust their priors so that reservation would not precipitate large improvements in the gender gap in political representation. In the worst case scenario women face 'backlash,' i.e. social and economic reprisals for violating stereotypes regarding the role of women (Rudman, 1998). If true, this would require reservation to remain in place for a long time before equality in political representation is achieved.

Despite the importance of this issue for the design of institutions around the world, little is known about the relative performance of women as policy makers, about their impact on child development and about how their performance is evaluated by voters. The cross-sectional relationship that has been observed between women's representation and the quality of governance (see World Bank (2001) for a survey of these studies) may not reflect the causal impact of female participation. Women who succeed in winning elections may be extremely effective leaders and perceived as such, but the performance of this select group of women does not inform us about the performance of the average female politician relative to the average male politician. Cross country studies documenting a positive relationship between the extent of female representation and the quality of governance (e.g. Dollar, Fisman and Gatti (2001), Swamy Knack, Lee and Azfar (2001)) are also difficult to interpret since women are more likely to be elected in more liberal and progressive countries, and these may also be countries in which child health and educational achievements are higher.

This paper exploits the fact that in India, mandated political representation for women in local governments (Gram Panchayats) was implemented in a randomized manner to present some insights on the causal impact of women as policy makers.¹ We focus on the policy decisions of female village council leaders as they affect children, families and other women. The advantage of looking at village councils in India is that the randomized selection of the councils reserved for women eliminates most of the econometric problems mentioned above and allows us to provide clear evidence on the impact of women's leadership on policy decisions.

¹ Gram Panchayats, or GPs, are village councils which encompass 10,000 people and serve as India's vehicle for decentralized provision of public goods in rural areas.

The village council president, called a Pradhan, is the only councilor with a full-time appointment and accordingly wields effective power. In 1993, India amended its federal constitution, devolving power over rural public works and welfare services from the states to Gram Panchayats (GPs). The GP now decides how to allocate government funds to development schemes it defines and implements, including welfare programs (such as antenatal care and childcare for pre-school children) and public works (drinking water, roads, housing, electricity, irrigation, education).

The amendment also included mandates to ensure that GP budget decisions were representative of the preferences of the community. First, GPs must hold a general assembly every six months to report on activities and submit the proposed budget to voters for ratification, and Pradhans must have regular office hours to allow villagers to formally request services and lodge complaints. Second, states are required to reserve one third of all council seats and Pradhan positions for women. Since electoral rules ensure that GPs to be reserved for women are selected at random and that reserved seats cycle among GPs evenly, any difference in outcomes in reserved and unreserved GPs can be confidently attributed to the reservation policy.

Our analysis exploits multiple sources of data. First, we use data from an all India survey and find that villages reserved for women leaders have more public goods, and the quality of these goods is at least as high as in non-reserved villages. Moreover, villagers are less likely to pay bribes in villages reserved for women. Second, we provide evidence from two Indian states that children in villages headed by female Pradhans do better on two dimensions, drinking water and immunization. Girls in villages reserved for female Pradhans also experience an improvement in school attendance. In West Bengal, female Pradhans invest more in goods directly relevant to the expressed development priorities of women and children, in particular drinking water infrastructure.² In addition, household data from one of India's poorest states – Rajasthan – shows that pre-school children are more likely to be immunized and attend government day care centers in villages reserved for women leaders. While, in general, girls are less likely to attend school, we find that women Pradhans significantly reduce the gender gap in school attendance. Third, we examine how female Pradhans affect political participation by women. We find that the presence of a female Pradhan makes women more likely to participate in the discussions during the general assemblies. Relative to male Pradhans, female leaders are more responsive to the concerns raised by female villagers. Female villagers, in turn, are more likely to speak about drinking water and beneficiary selection for village programs.

Our findings suggest that politically empowering women may have important benefits for children. Higher investment in clean drinking water could potentially lead to large improvements in children's health since water-borne and diarrheal diseases (including cholera) kill nearly over 1.5 million children under 5 yearly (WHO). According to the second National Family Health Survey (1998), 58% of children in India (in the 12-23 months age group) are not fully immunized. In such a setting it is particularly striking that we find that women leaders increase

² Our findings are consistent with previous work by Chattopadhyay and Duflo (2004) who found that there are more investments in drinking water in reserved GPs and that women made more formal requests to the Panchayat about drinking water in both West Bengal and Rajasthan.

the likelihood that children are completely immunized. Finally, the fact that women Pradhans reduce the gender gap in schooling is extremely encouraging.

However, we also have a second, more worrying, set of results. Even though women provide more and better goods and are less likely to seek a bribe, villagers are still more dissatisfied with the performance of women Pradhans in providing all services, including drinking water for which the quantity and quality in reserved GPs is objectively superior. On a similar note, even though women Pradhans encourage female villagers to attend the biannual general assemblies and enable women to voice their opinions and concerns, they have more difficulty exerting their influence during the discussions and are less likely to chair these meetings (while remaining as likely as men to attend these meetings). We interpret these findings as consistent with a world in which villagers are biased in their appraisal of the competence and performance of women Pradhans (Duflo and Topalova, 2004), and that such bias is realized in terms of worse treatment of women in Gram Sabha meetings and preventing female Pradhans from functioning effectively. If correct, our interpretation suggests that the long run benefits from mandated political representation for women may depend significantly on the extent of gender bias.

The remainder of this paper is organized as follows. Section 2 describes the institutional context of the Gram Panchayats. In Section 3 the data and empirical strategy are explained. Section 4 describes the results on policy activism, children's outcomes, political participation and perceptions of female leaders. We conclude in Section 5 by discussing the implications of these findings for children and women and by describing a survey currently conducted in West Bengal which will allow us to gather further evidence on how women policymakers affect children outcomes.

1 Institutions: The Panchayat System and Reservations

1.1 The Panchayat System

The 73rd amendment to the Constitution of India in 1993 established the framework of a three-tiered local government (Panchayat) system, with regular elections every five years, throughout India. Our analysis focuses on the lowest level of local governance in rural India, the Gram Panchayat (GP). The 1993 act gave the GP primary responsibility in implementing development programs, as well as in identifying beneficiaries for federal poverty programs (Besley, Pande and Rao, 2005). GP size, both in terms of number of people and villages, varies across states. In West Bengal for example, each GP encompasses 10,000 people in several villages (between 5 and 15). Villagers elect GP council members, and in most states they also directly vote for a Pradhan or council chief.³ The council makes all decisions by majority voting. While not possessing veto power, the Pradhan is the only council member with a full-time appointment and wields political power accordingly.

³ In Karnataka, Kerala, Maharashtra and West Bengal, voters elect the council, which then elects the Panchayat chief from its members. Candidates are generally nominated by political parties, but must be residents of the villages they represent. Between 1993 and 2003, all major states but two (Bihar and Punjab) have had at least two elections.

While GP powers to implement policy vary across states, the core responsibilities of GPs include administering local infrastructure (public buildings, water, roads) and identifying recipients of targeted welfare. There are four broad welfare schemes: the Jawhar Rozgar Yojana (JRY) for infrastructure (irrigation, drinking water, roads, repairs of community buildings, etc.); a small additional drinking water scheme; funds for welfare programs (widow's, old age, and maternity pensions, etc.); and a grant for the administrative expenses of the GP. The GP has, in principle, complete flexibility in allocating these funds. At this point, the GP has no direct control over the appointments of government paid teachers or health workers, but in some states (Tamil Nadu and West Bengal, for example), there are Panchayat-run informal schools. Panchayats are also usually involved in supervising the implementation of federal health programs, an important example being the Integrated Child Development Services (ICDS). Under this program, immunization camps are held in villages and the Panchayat is often involved in organizing and advertising this event.

The Panchayat is also required to organize multiple village meetings per year, called “Gram Sabhas.” The meetings are open to all villagers and are aimed at increasing GP accountability. The GP council submits the proposed budget to the Gram Sabha, and reports on their activities in the previous six months. The GP leader must also set up regular office hours where villagers can lodge complaints and requests.

1.2 Reservation for Women

In addition to devolving powers to the Panchayat, the 73rd Amendment also required one-third of the GP councilor positions, as well as one-third of the Pradhan positions, to be reserved for women. Seats and Pradhan positions are also reserved for the two disadvantaged minorities in India, “scheduled castes” (SC) and “scheduled tribes” (ST), in the form of mandated representation proportional to each minority's population share in each district. Reservations for women have been implemented in all major states except Bihar and Uttar Pradesh (which have only reserved 25% of the seats for women in the 1995/96 elections). Reservation has drastically increased the number of women in the village councils. In their detailed study of the impact of the reservation in West Bengal and Rajasthan, Chattopadhyay and Duflo (2004) find that in reserved GPs 100 percent of the Pradhans were female, while in unreserved GPs the percentage of women Pradhans were only 6.5% in West Bengal and 1.7% in Rajasthan.

States were instructed to ensure the random assignment of reservation for women Pradhan across GPs. In West Bengal, for example, all GPs in a district are ranked in consecutive order according to their legislative serial number (an administrative number pre-dating this reform). They are then split in three separate lists according to whether or not the Pradhan seat had been reserved for disadvantaged minorities (these reservations were also chosen randomly, following a similar method). Using these three lists, every third GP starting with the first on the list is reserved for a female Pradhan for the first election.⁴ For the next election, every third GP starting with the second on the list was reserved for a woman, etc. The Panchayat Constitution Rule provides tables indicating the ranks of the GPs to be reserved in each election.

⁴ For the next election, every third GP starting with the second on the list was reserved for a woman, etc. The Panchayat Constitution Rule provides tables indicating the ranks of the GPs to be reserved in each election.

2 Data

2.1 “Millennial Survey”

The first source of data for this study is the "Millennial Survey," conducted by the Public Affairs Centre,⁵ a non-government organization in Bangalore which is credited for starting the "report card movement" in India. The "Millennial Survey" covered 36,542 households in 2,304 randomly selected villages in 24 states in the year 2000. The survey aimed to provide an independent assessment of key public services, using citizen feedback as well as direct evaluation of facilities.

The Millennial Survey focused on five basic public services: drinking water and sanitation, health, education and child care, road transport and the public distribution system. An unusual feature of the survey is that it contains both subjective measures of the quality and objective measures of the quantity and quality of public goods provided in each village. This allows us to compare women's performance as leaders, and how villagers evaluate this performance.

The PAC data consist of three parts: a household survey, an independent assessment of facilities available in each village, and a village profile sheet. 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.⁶ Household characteristics were also collected. 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.⁷ 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 handpumps, public taps, buses) or in the case of schools, public health centers and fair price shops, an indicator of whether these public goods were available in the village.⁸

5 All of the analysis using the Public Affairs Centre data was conducted while one of the authors was an intern with the organization in Bangalore, India in spring 2003.

6 The number of respondents varies for each question, because citizens were only asked about services available in their village.

7 Again, the 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.

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 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

Since the Millennial data were not collected for the purpose of comparing female and male GP leaders, many questions which might have shed light on leadership were not asked. However, this also means that it is very unlikely that the surveyors induced any bias that would complicate interpretation of the results regarding the gender of the leader.

The PAC data are supplemented with data from the 1991 Indian census, whose collection was made prior to the implementation of reservations. The census data allow us to check whether reservation for women Pradhan was in fact random.

As the Millennial Survey was conducted in the end of 2000, we only consider major states that had an election between 1995 and 2000 (the term for a GP was set at 5 years after the 73rd Amendment, but in some states elections were not held on time). Fourteen such states are represented in the PAC data. We collected information on reservations from visits to the state election commissions and rural development departments for 11 states in February 2003.⁹

Systematic information in a central location about the GPs in which the Millennial villages fall was typically unavailable, and in many cases we had to contact the district offices. For over two-thirds of our sample villages, we could both match the village to the GP and identify Pradhan reservation status. 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.¹⁰

The Millennial data was collected over a period of several months, beginning in the end of 2000. The first GP election for many states in our sample¹¹ was in 1995, with re-elections held in 2000. The rotational assignment of reservation implied that GPs which were reserved for women Pradhan in 1995 were "de-reserved" in 2000 and new GPs were reserved for women. 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 2000-2005 mandate. Information on Pradhan reservation as of the end of 2000 was available for seven states.¹²

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. In Table 1 we compare the public goods available at the time of the 1991 census (well before any reservation) in villages that were reserved for women in 1999-2000 to those that were not. There are no statistical differences between villages located in reserved and unreserved GPs

9 The 11 states included are Andhra Pradesh, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. Time limitations prevented collection of GP reservation data for Gujarat, Assam and Manipur.

10 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).

11 Andhra Pradesh, Himachal Pradesh, Kerala, Maharashtra, Rajasthan, Uttar Pradesh.

12 Andhra Pradesh, Karnataka, Kerala, Maharashtra, Orissa, Punjab, Tamil Nadu, West Bengal.

for any of the village characteristics, suggesting that the woman Pradhan reservations were indeed randomly assigned.

2.2 Immunization and Schooling Data

An important way in which women leaders may affect child health is by ensuring that children are immunized, either by village health workers or at government-organized immunization camps. While the vaccination of children against six serious but preventable diseases (tuberculosis, diphtheria, pertussis, tetanus, poliomyelitis, and measles) has been a cornerstone of the child health care system in India, the extent of child immunization remains low. Recent government efforts to encourage immunization have involved Panchayats. They have been given responsibility to organize immunization camps and to monitor local health workers. The government child day care program, Anganwadi, is also subject to monitoring by Panchayats. Finally, while Panchayats do not play a direct role in monitoring school activity, there is anecdotal evidence of the more entrepreneurial and motivated Pradhans affecting school attendance.

To examine the role of women leaders in immunization, child care and school attendance, we use data from a survey conducted in 100 villages of Udaipur district by Seva Mandir, in collaboration with the Vidya Bhawan Society and the Abdul Latif Jameel Poverty Action Lab (J-PAL) at the Massachusetts Institute of Technology in 2003-2004. A specific immunization module was administered to 30 households in each village. It collected information on the vaccination history of every child under the age of 5.¹³ A more general module including information on child care and schooling was administered to 10 households in each village to all children under the age of 13. By combining the data on child outcomes with information on each village's reservation status, we can test the hypothesis that women leaders are more likely to promote child health (in the form of immunization) and education.

2.3 Gram Sabha

In 2002 and 2003, we recorded the Gram Sabha (GS) meetings in 199 Gram Panchayats across five states (Kerala, Karnataka, Tamil Nadu, West Bengal and Rajasthan). In each state we identified districts and randomly sampled GPs within these districts. There are two components of the GS data: a survey completed by an observer to the GS and the actual audio recordings and corresponding transcripts of each meeting. The observer survey captured detailed records on GS attendance, particularly attendance by men and women, representatives of disadvantaged castes and minorities, Panchayat officials and other government officials. The treatment of different groups, in terms of sitting arrangements, is also noted. Also of importance, we collected data on how and when the meeting was organized, for example how it was announced, who chaired the meeting and whether an agenda was announced.

We also recorded the discussions at each GS and had the recordings transcribed and then translated into English. These transcripts were coded by hand to construct quantitative measures

¹³ In India, the complete immunization schedule for children between the age of 12 and 60 months covers 5 vaccinations.

of villager participation and Pradhan performance. The measures include issues raised by villagers and the type of responses they received, male and female villager participation on each issue, and any discussion of corruption or discrimination. Coupled with information on political reservation, this information allows us both to compare female leaders' activities in the GS with their male counterparts but also to estimate the impact of reservation on female participation in local politics.

3 Results

Due to the randomized implementation of reservation, one-third of GPs in each state were randomly reserved for women, the basic empirical strategy is straightforward. Conditioning on the state, any difference between the quality and quantity of public goods in reserved and unreserved GPs can be confidently attributed to the political reservation system. Likewise, any differences in the following outcomes can also be attributed to the policy: women's participation and treatment in the GS, children's immunization, child care and schooling outcomes, households' satisfaction with public services and the necessity to pay a bribe.

3.1 Do men and women invest in different goods

Table 2 examines how women policymakers affect the quality and quantity of several public services. 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 .

$$Y_{jk} = \alpha_k + \beta_k R_j + X_j' \gamma_k + \varepsilon_{jk} \quad (1)$$

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).¹⁴

We also analyze the average effect of female politicians across all public goods. We estimate:

$$\beta = (1/N) \sum_{k=1} N_k \beta_k$$

where N_k is the number of observations used in the good k regression, and N is the sum of all the observations in the five regressions.¹⁵

Consistent with the results in (Chattopadhyay and Duflo, 2004), reservation for women increases investment in drinking water infrastructure (Table 2). 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% level). Chattopadhyay and Duflo (2004) find that the effect of

14 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.

15 The standard error for these averages is derived from the variance covariance matrix for the 5 coefficients obtained from jointly estimating the equations for the 5 public goods (see Katz, Kling and Liebman, 2004).

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 PAC survey.

However, there are four positive coefficients and only one negative coefficient in the quantity regression. In the quality regression, all coefficients are positive. Overall, 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. The fact that women invest more in drinking water facilities relative to men is unsurprising in a world where political leaders' policy preferences influence the choice of policy. In West Bengal and Rajasthan, Chattopadhyay and Duflo (2004) document that women and men care about different public goods. Comparing the type of public goods requested or complained by men and women, drinking water is by far the issue most frequently raised by women in both states.

The "Millennial Survey" data also allow us to test whether the higher quantity and quality of public goods provided by women Pradhan come at a higher price, by examining the incidence of bribes in reserved and unreserved villages. We estimate the coefficient β_k in the regression:

$$Y_{ijk} = \alpha_k + \beta_k R_j + X_j' \gamma_k + u_{jk} + \varepsilon_{ijk} \quad (2)$$

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.¹⁶

Table 3 reports the mean value of whether or not 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 policymakers appear to be less corrupt than men, suggesting that the higher quantity infrastructure does not come at a higher price.

3.2 Do women affect child outcomes

3.2.1 Immunization outcomes

Table 4 uses household data from Rajasthan to examine whether children in villages headed by a woman Pradhan are more likely to be immunized. The basic specification is as follows:

¹⁶ We have also run a specification where we control for a vector of household level covariates. The results are essentially unchanged. They are reported in Table 3 columns (5) to (7) for the incidence of bribes.

$$Y_{ij} = \alpha + \beta R_j + \gamma F_{ij} + a_i + \varepsilon_{ij} \quad (3)$$

where Y_{ij} is a dummy variable indicating whether or not child i in village j has received a complete course of immunizations (columns (1) and (2)) or whether or not child i in village j has received no immunizations (columns (3) and (4)). R_j takes the value of 1 if village j was part of a GP reserved for a female Pradhan, and a_i is a vector of dummy variables controlling for the child's age at the time of the survey.

Columns (1) and (2) of Table 4 indicate that female reservation has a positive and statistically significant impact on child immunization. A child between the age of 1 and 5 residing in a village reserved for a female Pradhan has a two percentage points higher probability of having completed all 5 vaccinations. Again, given that reservation status is randomly allocated across villages, this finding is direct evidence of a causal relationship between political reservation for women and child health. However, as indicated by column (3), we do not find an impact of female reservation on the probability that a child younger than 5 years old has received no immunizations. These results are consistent with the view that the low rates of immunization in India reflect limited responsiveness to immunization opportunities, rather than the lack of access to immunization per se.

To investigate whether the immunization outcomes of female children are particularly responsive to female leaders we estimate:

$$Y_{ij} = \alpha + \beta R_j + \gamma F_{ij} + \lambda R_j * F_{ij} + a_i + \varepsilon_{ij} \quad (4)$$

where λ represents the differential effect of female leadership on the probability of receiving vaccinations for girls relative to boys. Columns (2) and (4) in Table 4 present no evidence of differential treatment of girls through the reservation policy.

3.2.2 Child care and Schooling outcomes

In Table 5 we examine the role of women Pradhans in affecting child care and schooling outcomes. We estimate equations (3) and (4), with Y_{ij} a dummy of whether the child is in child care (columns (1) and (2)) or attends school (columns (3) and (4)). Pre-school children are 2 percentage points more likely to attend anganwadi in villages with a woman councilor. There is no differential impact of reservation on boys' and girls' attendance of anganwadi.

On average, women Pradhans do not appear to affect school attendance. However, we find significant gender-differential effects. The presence of a female Pradhan reduces the gender gap in school attendance by 13 percentage points. This finding is striking and particularly encouraging in light of the large gender gap in schooling in India, and particularly in Rajasthan.

Political reservation for women in local councils in India has thus led to important improvements in the well-being of children, as measured by immunization and child care, and the schooling outcomes of girls. The relative gains of girls in villages with a female Pradhan point to an additional channel through which female politicians can affect the policy environment.

3.3 Effect on the political participation of women

Table 6 displays the effect of having a woman Pradhan on the political participation of women using data from the 199 Gram Sabhas that were attended by field investigators and the estimation strategy in equation (1). In particular, we look at whether female Pradhans have an effect on overall attendance, attendance by women and government officials. The point estimates are sensible, though in no case is the effect of having a female Pradhan statistically significant. Women Pradhans are associated with marginally higher (8 percent) overall attendance at the biannual general assemblies (row 1), and the entire increase is driven by the larger number of women attending the Gram Sabha: Gram Sabhas in GP reserved for women had on average 21 percent higher women attendance relative to the unreserved GPs (row 2). As mentioned before this effect is statistically insignificant. This finding echoes Chattopadhyay and Duflo (2004), who found that female reservation increased the political participation of women in West Bengal, but not in Rajasthan.

Attending is, however, only a necessary condition to have a voice in village meetings. Women who attend also need to speak up, and be heard.

Women are significantly more likely to ask a question or raise an issue at the Gram Sabha. The share of women speaking at the GS is 13 percentage points higher in GPs reserved for women (Table 7). The fact that the Pradhan is a woman therefore significantly increases women's participation in the political process and is also consistent with previous findings by Chattopadhyay and Duflo (2004).

When women speak, are they heard? Women leaders generally seem to treat women participants in the Gram Sabha better than male leaders. When analyzing the seating arrangement of participants during the general meeting, we find that while there is no difference in where participants sit on average, women are less likely to sit on the bare floor (and instead sit on chair, carpets, or desks) when the Pradhan is a woman (Table 6, row 4). However, government officials are less likely to attend – an issue to which we return below.¹⁷

More importantly, we can also use the database of the 145 GS transcripts to analyze how Panchayat responses vary according to the particular issue discussed and whether women participate in the discussion on that issue. From the transcripts of the meetings, we code the Panchayat's response to each specific issue that was raised during the GS. We then aggregate Panchayat responses into bad, good or neutral categories. Examples of negative responses include incidents in which the Panchayat officials: refuse to acknowledge that the problem is under GP jurisdiction, threaten to cut services to villagers, request villagers to solve problems on their own, or refuse to address the issue until other government officials are present. We use this aggregated measure of Panchayat responsiveness to estimate the following regression:

$$Y_{sj} = \alpha + \beta F_{sj} + \gamma R_j F_{sj} + u_j + \varepsilon_{sj} \quad (5)$$

¹⁷ Neither of these results are statistically significant so the interpretation is only suggestive.

Where Y_{sj} is an indicator of whether the issue discussed s received a bad response from the Panchayat j , F_{sj} is one if a woman spoke on the issue, R_j is a dummy variable indicating whether or not the position of the Pradhan was reserved for a woman and v_j is a set of GP dummies. Two coefficients are of particular interest: β captures whether on average women receive worse response from the Panchayat and γ demonstrates whether this response differs by the gender of the Pradhan.

The results in Table 8 are striking. If a woman speaks on an issue during the Gram Samsad, she is much more likely to receive a bad response from the Panchayat than a man raising the same issue. On average, a woman speaking during the GS is 14 percentage points more likely to receive a negative response. In unreserved GPs, this likelihood increases to 25 percentage points. However, in GPs reserved for a woman, men and women seem to be treated equally when they raise issues in front of the general assembly. Thus, female Pradhans not only significantly increase women's involvement in the workings of the Panchayat but are also more responsive to women's concerns and requests.

In Table 9 we examine whether women speak on different issues. The three areas investigated are drinking water, welfare schemes, and infrastructure/construction issues. Drinking water includes discussions on the repair and implementation of drinking water infrastructure as well as water fees. Welfare schemes range from housing subsidies for SC/ST households, pension funds, latrine subsidies, to benefits to widows. Discussions on infrastructure and construction projects cover street lamps and electricity installation, public lavatories, drainage, road construction and repair, among others. In column (1) we see that a woman is 9 percentage points more likely to speak about drinking water and 13 percentage points more likely to speak about welfare schemes, in line with the findings by Chattopadhyay and Duflo (2004). Women are less likely to speak about infrastructure. Interestingly, we find that the difference in the frequency with which men and women raise the issue of drinking water exists only in villages which are *not* reserved for a female Pradhan. A possible interpretation is that women Pradhans are more likely to invest in drinking water, and this reduces the need for women to speak on this issue in village meetings. We plan to investigate this possibility in future work.

3.4 Evaluation of female leaders

So far we have established that public good provision is no lower in villages reserved for women leaders, and the measured quality of public goods is at least as high as in non-reserved villages. Both the quality and quantity of water delivery are improved in villages run by women. Moreover, villagers are less likely to pay bribes in villages reserved for women. Women Pradhans encourage female villagers to express themselves in the biannual general assemblies and are more responsive to their concerns.

Yet, surprisingly, female Pradhans systematically receive 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. Using the estimation strategy as presented in equation (2), column (6) of

Table 2 displays the impact of women policymakers on villagers' satisfaction with each of the 5 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% level, and it also corresponds to a large (25%) relative increase in the rate of dissatisfaction, since the satisfaction ratings are overall very high.¹⁸

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).

The sharp contrast between the objective measures of performance of female Pradhans and villagers' subjective evaluation is a puzzle. There could be various explanations for this finding and unfortunately our data does not allow us to distinguish between them. It could be that women's performance is worse in important unobservable dimensions. It could be that new leaders are judged less favorably than established leaders.¹⁹ It could be that women have worse characteristics than men²⁰ and voters may use these characteristics in forming their opinion on the quality of their leaders. Finally, it could be that villagers generally expect women to be less effective leaders, and these priors are slow to adjust even in the face of facts. Even when women do a better job, if perceptions are biased, their achievements may not be recognized by the electorate.

Laboratory experiments in the US and Western Europe suggest that women leaders are often evaluated more negatively than male leaders, holding performance constant. These studies (see Eagly and Karau (2002) for a survey) normally either provide written descriptions of leadership situations, varying the sex of the leaders, or use trained actors to lead, allowing the experimenter to control the degree of success the leader achieves (Swim et al., 1989). Women are typically judged to have less leadership abilities than men with similar characteristics, and the same actions performed by men and women in leadership situations are evaluated more negatively

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

19 Linden (2004) finds that there is an incumbency disadvantage in India. However, two-terms incumbents are treated more favorably than one-term incumbents.

20 Chattopadhyay and Duflo (2004) show that women elected to reserved seats are poorer than their male counterparts, they are less experienced, less educated, and less likely to be literate.

when women are the leaders. The survey concludes that the bias against women is most pronounced when the leadership role is typically a male role.

There is no comparable evidence in developing countries, but these results suggest that the bias may be even stronger.

Some suggestive facts can be gleaned by observing the proceedings of the Gram Sabhas. Pradhans of reserved GPs are a lot less likely to chair the general assembly, while just as likely to attend the meeting (Table 10, rows (1) and (2) respectively). The role of a chair is taken over by the Panchayat Secretary or the Vice Pradhan, who are typically male. Some evidence that women Pradhans may not be taken seriously comes from the fact that government officials are less likely to come to the Gram Samsad if the GP is reserved for a woman (Table 6, row (3)).

While these findings are only suggestive - it could be that women are more ineffective, shy and inexperienced - they are indicative of the potentially strong barrier to proportional representation of women that gender bias could play. This evidence coupled with the finding that women Pradhans are evaluated more poorly than their performance would deserve point towards the importance of evaluating the impact of reservation policies on gender bias.

4 Women policymakers and children outcomes: the survey in West Bengal

Providing clean drinking water is one way in which women Pradhan may affect children's outcomes, in particular their health. We also find that women Pradhans are associated with higher immunization rates for children under five, improved attendance of child care centers and a lower gender gap in schooling attendance. Banerjee, Deaton and Duflo (2004) also provide evidence that in Rajasthan health care providers are less likely to be absent from work in health facilities in villages reserved for women, and they are more likely to have visited villages in reserved GPs. In West Bengal, the data collected by Chattopadhyay and Duflo (2004) suggest that teams of mobile health workers are more likely to visit the villages in reserved GPs than in unreserved GPs. Overall, it appears that women Pradhans invest more time and effort in duties related to health, such as organizing public health campaigns and monitoring providers at public health facilities in their GP, who are responsible for implementing the immunization program.

In order to directly examine these and other dimensions along which reservation may affect the well-being of children and to estimate the impact of political reservation on gender bias towards female leaders, we have initiated a large household and village survey in Birbhum district, West Bengal. The survey comprises of (1) Participatory Resource Appraisals and independent facilities surveys in 495 villages, (2) interviews of current and former Pradhans and their spouses in 165 GPs, and (3) 7,425 household surveys, with 15 households interviewed per village.

The GP is responsible for organizing various social programs, including health information campaigns on a wide range of health issues, such as pre-natal care and immunization. Pradhans have leeway in the choice of issues to pursue and accordingly, women may emphasize child health and education issues more than men. The impact of female Pradhans having policy preferences more favorable to women and children can be measured by two approaches. First,

policy decisions may lead to differential investments in the GP as already demonstrated by Duflo and Topalova (2004). We will therefore collect data on GP budget allocations for welfare programs (antenatal and postnatal care, childcare provision, schooling) and public works (drinking water, roads, housing, community buildings, electricity, irrigation, education). Technical audits of the village infrastructure (including drinking water tests and pre-school infrastructure) will provide additional, objective measures of differences in policy implementation.

Second, reserved GPs may show a measurably higher level of child health and development at the household level. The survey is designed to test this hypothesis by looking at child health status (illnesses, height, weight, etc.); educational attainment and immunization history.²¹ The survey will also give us some hints on the channels through which women leaders affect child health, as information will be collected on time use, participation in public works by both male and female household members, and decision making within the household.

Besides its direct impact on the quality of water, it is also possible that improving the quality and the quantity of drinking water infrastructure results in women spending less time fetching water, leaving them more time to pursue income-earning opportunities. Previous research has shown that the weight given to the preferences of a family member depends on how much he or she contributes to the household budget. Therefore improving women's income-earning opportunities may increase the proportion of the total household budget allocated to their preferred expenditures, including child health, nutrition, and development. Empowering women may also have an impact on the social and economic aspirations of teenagers (girls, in particular), leading to indirect effects on education, career and marriage choices. Our survey has been designed to examine whether women leaders also affect these dimensions of individual well-being.

An additional goal of the survey is to explore the barriers for women to be effective participants in politics, particularly gender bias towards female leaders. The survey includes modules to measure: explicit and implicit discrimination against women, especially those in leadership position; approval ratings of men and women; and attitudes towards women in village meetings. The ability of the reservation policy to precipitate changes in the perception of female leaders, and women more generally, is important to ensure female participation in the political process in the long run while also potentially affecting household outcomes by strengthening women's bargaining power.

21 A special module has been developed to accurately capture immunization status of children in the absence of a properly completed immunization card.

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Table 1: Comparison of Reserved and Unreserved Villages in 1991

Dependent Variable	Mean	Mean	Difference	N	Reservation
	Unreserved	Reserved			Effect with State
	(1)	(2)	(3)	(4)	Fixed Effects
Total Population	2,817	2,805	-12 (229)	938	66 (120)
Literacy	0.396	0.378	-0.018 (0.012)	938	-0.012 (0.010)
Female Literacy	0.282	0.263	-0.019 (0.013)	940	-0.009 (0.010)
Male Literacy	0.502	0.486	-0.016 (0.012)	940	-0.012 (0.010)
Percentage of Irrigated Land	0.282	0.342	0.059 (0.032)	642	0.034 (0.023)
1 if Village has a Bus or Train Stop*	0.627	0.554	-0.073 (0.034)	940	0.021 (0.025)
Number of Health Facilities*	0.604	0.685	0.081 (0.121)	809	0.126 (0.122)
1 if Village has Tube Well*	0.335	0.308	-0.027 (0.040)	789	-0.031 (0.031)
1 if Village has Hand Pump*	0.699	0.751	0.052 (0.034)	786	-0.009 (0.026)
1 if Village has Well*	0.724	0.703	-0.020 (0.032)	898	-0.032 (0.028)
1 if Village has Community Tap*	0.393	0.373	-0.020 (0.036)	825	0.026 (0.030)
Number of Primary Schools*	1.857	1.780	-0.077 (0.135)	919	-0.004 (0.106)
Number of Middle Schools*	0.714	0.689	-0.025 (0.065)	839	-0.021 (0.050)
Number of High Schools*	0.371	0.364	-0.007 (0.046)	808	0.026 (0.036)
Total Number of Schools	2.832	2.726	-0.105 (0.201)	920	-0.012 (0.142)

Notes:

^a Standard errors below the coefficients^b Regressions control for state fixed effects and village class dummies^c F-Test of joint significance of the variables marked with an asterix is 0.17 with 1 and 937 degrees of freedom (p-value 0.68).

Source:

Census of India, 1991

Table 2: Effect of Female Leadership on Public Goods Quality, Quantity, and Satisfaction

Dependent Variable	Quantity		Quality		Satisfaction			
	Mean	Norm.	Mean	Reservation	Mean	Reservation		
		Reservation				All	Men	Women
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
A. OVERALL								
Weighted Average	4.35	0.078 (0.041)	0.569	0.016 (0.011)	0.818	-0.020 (0.010)	-0.020 (0.010)	-0.017 (0.013)
B. BY PUBLIC GOOD TYPE								
Water	20.11 (33.46) 633	0.191 (0.098)	0.392 (0.189) 611	0.016 (0.014)	0.835 (0.297) 6802	-0.024 (0.018)	-0.021 (0.022)	-0.027 (0.021)
Education	0.94 (0.24) 810	0.130 (0.064)	0.892 (0.242) 543	0.015 (0.021)	0.855 (0.198) 3661	-0.013 (0.011)	-0.010 (0.011)	-0.024 (0.023)
Transportation	2.26 (1.02) 635	-0.020 (0.082)	0.306 (0.292) 596	0.006 (0.025)	0.891 (0.189) 3868	-0.007 (0.016)	-0.007 (0.016)	0.008 (0.029)
Fair Price Shops	0.77 (0.42) 805	0.028 (0.069)	0.688 (0.289) 498	0.023 (0.027)	0.747 (0.309) 7212	-0.022 (0.015)	-0.026 (0.017)	-0.015 (0.022)
Public Health Facilities	0.65 (0.48) 809	0.066 (0.072)	0.654 (0.352) 355	0.017 (0.036)	0.803 (0.366) 741	-0.063 (0.033)	-0.086 (0.039)	-0.027 (0.053)

Notes:

- ^a Standard deviation and number of observations below the mean, and standard errors (corrected for clustering at the GP level) below the coefficients
- ^b All coefficients expressed in number of standard deviations of the independent variables
- ^c The standard errors of the weighted averages of the coefficients are obtained by jointly estimating the coefficient in a SUR framework
- ^d Regressions control for state fixed effects and village class dummies
- ^e The water quantity variables is the number of public drinking water taps and handpumps in the village
- ^f 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
- ^h 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
- ⁱ 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
- ^j 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
- ^k 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

Table 3: Effect of Female Leadership on Corruption

Dependent Variable	Mean (1)	Effect of reservation					
		No controls		Effect of reservation		Individual Controls	
		All (2)	Male (3)	Female (4)	All (5)	Male (6)	Female (7)
A. OVERALL							
Weighted Average Bribes	0.102	-0.015 (0.010)	-0.026 (0.016)	-0.025 (0.016)	-0.016 (0.010)	-0.027 (0.016)	-0.032 (0.015)
B. BY PUBLIC GOOD TYPE							
1 if Paid Bribe for Getting Public Tap Fixed	0.105 (0.306) 4713	-0.017 (0.016)	-0.041 (0.030)	-0.003 (0.015)	-0.019 (0.016)	-0.043 (0.030)	-0.004 (0.015)
1 if Paid Bribe for Ration Card	0.058 (0.233) 3761	-0.015 (0.012)	-0.013 (0.012)	-0.020 (0.027)	-0.015 (0.012)	-0.012 (0.012)	-0.027 (0.027)
1 if Paid Bribe to Police	0.340 (0.474) 423	-0.011 (0.048)	0.010 (0.051)	-0.359 (0.133)	-0.019 (0.049)	0.005 (0.053)	-0.510 (0.105)
1 if Paid Bribe for Medical Services	0.178 (0.382) 749	-0.009 (0.032)	-0.019 (0.037)	0.005 (0.060)	-0.009 (0.033)	-0.017 (0.038)	0.030 (0.062)

Notes:

- ^a Standard deviation and number of observations below the mean, and standard errors (corrected for clustering at the GP level) below the coefficients
- ^b The standard errors of the weighted averages of the coefficients are obtained by jointly estimating the coefficient in a SUR framework
- ^c Regressions in columns 1-4 control for state fixed effects and village class dummies
- ^d Regressions in columns 5-7 control for state fixed effects, village class dummies, household size, property, religion, caste, education, occupation, and respondent gender.

Table 4: Immunization in Rajasthan

	Immunization Completed Children 1-5		No Immunizations Received	
	Column (1)	Column (2)	Column (3)	Column (4)
GP reserved for Woman	0.018 *	0.022 *	-0.035	-0.047
	(0.010)	(0.012)	(0.060)	(0.066)
Female Child	0.002	0.006	0.000	-0.010
	(0.006)	(0.005)	(0.021)	(0.030)
GP Reserved * Female Child		-0.008		0.025
		(0.013)		(0.041)
Age < 1			0.061 *	0.062 *
			(0.035)	(0.035)
Age = 1	-0.009	-0.009	0.022	0.022
	(0.010)	(0.010)	(0.036)	(0.036)
Age = 2	-0.007	-0.007	-0.048	-0.048
	(0.011)	(0.011)	(0.033)	(0.033)
Age = 3	-0.004	-0.004	-0.026	-0.025
	(0.009)	(0.009)	(0.029)	(0.029)
Age = 4	0.003	0.003	-0.045	-0.045
	(0.014)	(0.014)	(0.034)	(0.034)
Constant	0.018 **	0.016 *	0.620 ***	0.624 ***
	(0.008)	(0.008)	(0.045)	(0.046)
No obs	2209	2209	2524	2524

Notes:

^a Standard errors are in parentheses

^b SE are clustered at the village level.

Table 5: Child Care and School Attendance

	Child Care		School Attendance	
	Column (1)	Column (2)	Column (3)	Column (4)
GP reserved for Woman	0.023 *	0.030 **	0.023	-0.036
	(0.014)	(0.014)	(0.045)	(0.047)
Female Child		0.023 **		-0.295 ***
		(0.012)		(0.033)
GP Reserved * Female Child		-0.016		0.132 ***
		(0.021)		(0.046)
Constant	0.010	-0.001	0.469 ***	0.613 ***
	(0.013)	(0.013)	(0.054)	(0.048)
No obs	1161	1161	1561	1561

Notes:

^a Standard errors are in parentheses

^b SE are clustered at the village level.

^c Sample is for children between the ages of 2 and 8.

Table 6: GS Attendance and Organization

Dependent Variables	Difference GP Reserved
Log of Total Attendance	0.080 (0.154)
Log of Female Attendance	0.209 (0.209)
Number of Gov't Officials in Attendance	-0.368 (0.559)
Female Villagers Not Seated on Floor	0.088 (0.056)

Notes:

^a Standard errors are in parentheses

^b Difference regression includes state FE with robust standard errors

Table 7: Political Participation of Women

Dependent Variable	Difference GP Reserved
Whether any Woman Speaks during GS	0.131 * (0.078)

Notes:

^a Standard errors are in parentheses

^b Difference regression includes state FE with robust standard errors

Table 8: Panchayat Response to Female Participation

	Bad Response		Neutral Response		Good Response	
	(1)	(2)	(3)	(4)	(5)	(6)
Whether a Woman Spoke on Issue	0.143 ** (0.063)	0.252 *** (0.070)	-0.127 ** (0.055)	-0.248 *** (0.073)	-0.014 (0.043)	-0.001 (0.054)
Reservation * Woman Spoke on Issue		-0.258 *** (0.132)		0.288 *** (0.107)		-0.033 (0.093)

Notes:

^a Standard errors are in parentheses

^b All specifications include state FE and clustered SE at the meeting level

Table 9: Issues Discussed During GS at the Issue Level

	Drinking Water		Welfare		Infrastructure	
	(1)	(2)	(3)	(4)	(5)	(6)
Whether a Woman Spoke on Issue	0.091 ** (0.055)	0.193 *** (0.071)	0.135 ** (0.061)	0.102 (0.080)	-0.109 * (0.057)	-0.039 (0.075)
Reservation * Woman Spoke on Issue		-0.234 *** (0.112)		0.065 (0.127)		-0.154 (0.112)

Notes:

^a Standard errors are in parentheses

^b All specifications include state FE and clustered SE at the meeting level

Table 10: Evaluation of Female Pradhans from Gram Sabha

Dependent Variables	Difference GP Reserved
Whether Pradhan Chairs GS	-0.329 *** (0.065)
Whether Pradhan Attends GS	-0.065 (0.046)
Agenda was Announced at GS	-0.068 (0.053)

Notes:

^a Standard errors are in parentheses

^b Difference regression includes state FE with robust standard errors

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