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Varieties of Governance, Varying Outcomes

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Varieties of Governance, Varying Outcomes

Omkar Joshi and Hari K Nagarajan[1]

Abstract

A significant concern in economies like India is that large sections of the populations here are unable to adequately access essential services such as water and education. This problem is particularly acute in rural areas where low literacy levels coupled with limited access to drinking water have led to serious concerns like widespread out-migration in search of low-skilled jobs, low productivity of labor, gender discrimination, among others.

In order to remedy this situation, many countries – including India – have embarked upon a program of promoting participatory or self-governance, the underlying premise being that participation in governance means empowerment and capacity building of both households and communities, which together could bring about a change through improved provision of services, and consequently growth.

In this paper – using the ARIS/REDS data sets of NCAER and qualitative methods – we explore the impact of empowering the local governments such as the Panchayats to assume the role of service providers. Specifically, we pose these broad questions: a) Does women's political agency matter in enabling improved access to services? Do we, for example, know anything about the pathways of impact of political agency of women? b) If there are effective alternate institutions operating within villages, will they help improve the functioning of the elected Panchayats? c) Does the choice of the service provider hold significance for households? For example, does it matter if households choose private schooling over public and Panchayat schools? d) What will be the economic impact, at the household level, of improved access to services?

The findings are numerous. The quality of education in public and Panchayat-run schools is significantly a function of governance, and the involvement of the child's parents (in particular the mother) in the management of schools is important. Village level literacy is significantly enhanced if households choose private schools over public and Panchayat-run schools. We find that women's political agency reduces barriers for women in the labor market and is able to bargain for higher non-farm wages. If the time spent in fetching water is reduced due to improved provision of water services, then women in particular use the time thus saved for more productive activities. Hence the choice of the service provider matters.

Keywords: Political Agency, Gender, Education, Water, Decentralization, India.

JEL codes: B21, C26, H41, H42, I18, J22, O15

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1. Introduction

The theoretical framework of public service delivery rests on the principal-agent model, where citizens (principal) demand public services from policymakers, who in turn delegate the responsibility to decentralized service providers (agents). This concept of principal-agent relationship creates a situation where it becomes difficult for the principal to control the actions of the agents. The service-delivery chain is controlled through institutional norms and incentive schemes for agents. The standard moral-hazard models link the agents' compensation with their performance. With perfect information, citizens can control the behavior of the agents through effective monitoring. However, due to asymmetric information, agents' actions do not converge with the demands of the principal, which results in agents exerting less effort than required.

Service delivery calls for accountability and transparency within the service-delivery chain. The rural poor as citizens should be given the opportunity to voice their opinion and raise their demand for public services for household welfare. Literature defines the mechanism through which citizens directly monitor the actions of service providers as the 'short route of accountability,' which improves the citizens' bargaining power, which in turn could make the system more efficient. Hence, we have based our theoretical framework on this short route of accountability, whereby citizens can monitor the service providers' actions directly. Also, devolving administrative and financial responsibilities to lower tiers of government for public service provision results in greater accountability to the rural poor and addresses their needs more closely. In other words, it reduces the demand-supply gap in public service provision.

Evidence suggests that the demand side (rural population) should be supported in their efforts to organize themselves and to raise their voices for public service delivery on equal terms; only then will the supply side (service providers) respond adequately, i.e. deliver the demand-oriented services. However, service provision would also depend on the organizational structures (policies and legislations). Unless citizens' needs are properly assessed, the overall efficiency of public service provision will remain below the desired level. When local governments have the authority to adjust resource allocation based upon local demands and preferences, efficiency in allocation could be achieved, and this may require devolving power to the lowest possible tier of the local government.

Hence, in this paper, we explore the following factors: a) Does women's political agency play a role in improving the provision of services? Do we, for example, know anything about the pathways of the impact of this agency of women? b) If there are effective alternate institutions operating within villages, will they help improve the functioning of the elected Panchayats? c) Does the choice of the service provider matter for households? For example, does it matter if households choose private schooling over public and Panchayat schools? d) What will be the economic impact, at the household level, of improved access to services?

The paper is structured as follows: Section 2 is about the evolution of the decentralization process in India. It also briefly describes the current status of devolution. The literature germane to this paper is discussed in section 3. Section 4 examines the data used to explain the relationship between improved service provision and access and the economic wellbeing of the households. The methodology followed is also outlined. Qualitative evidence of the consequences of improved functioning of Panchayats is presented in section

5, followed by the select empirical results relevant to improved access to water and choice of school. Section 6 is the concluding part of the paper.

2. Background: The Evolution of Panchayati Raj in India

The Panchayati Raj system has been in existence in India for centuries. As traced by Shriman Narayan (1946), it is believed that the system was first introduced by King Prithu while colonizing the area between the rivers Ganges and the Yamuna. In the Manusmriti and the Shanti Parwa of the Indian epic Mahabharata, there are many references to the existence of Gramasanghas (or rural communities). A description of these rural communities is also to be found in the Arthashastra of Kautilya, dating back to about 400 B.C. In fact, the village in India has been looked upon as the basic unit of administration since the earliest Vedic times. Gramani or the leader of the village is mentioned in the Rig Veda (X, 62.ii:107.5). References to the Gram Sabhas or the local village assemblies are found in Buddhist lore, contained in the Jatakas.

The village continued to be regarded as a corporate political unit throughout the post-Vedic period, and the Indian rural republics continued to flourish under the leadership of the various rulers – up until the advent of the British.

The British set up parallel bodies that eroded the functioning of the panchayats, though during the period starting 1870 a few perfunctory reforms aimed at improving the administrative efficiency of the local bodies were set in motion. There was a provision to elect representatives to the local urban bodies, but village communities were left unreformed and autonomy disappeared.

The Government of India Act 1935, and the provincial autonomy guaranteed under it marked another phase in the evolution of the panchayats. With popularly elected governments in the provinces, almost all provincial administrations enacted legislations for further democratization of local self-government institutions, including panchayats. Around the time of independence, Mahatma Gandhi talked about the idea of "Gram Swaraj" and wanted to revive the panchayats with adequate powers given to them so that each village would become a self-sufficient independent entity for its own vital needs, yet inter-dependent for many others. This view was not reflected in the original draft of the Constitution of India owing to the opposition of one of the drafting members – Bhimrao Ambedkar. Later, Article 40 was inserted in Part IV (Directive Principles of State Policy) ordaining the state to organize village panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-government. This provision, however, was not acted upon by any state for almost a decade.

The Balwantrai Committee report of 1952 recommended that villages be administered through a three-tier system of governance, with Panchayat Samitis at the block level playing the crucial role. By 1959, all the state governments had passed their respective Panchayat Acts suited to local realities. This was followed by a period of decline in the emphasis on panchayats[2] up until 1977, when the Ashok Mehta Committee brought out the importance of Panchayati Raj but at the same time recommended a two-tier model: Zilla Parishad (ZP)

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[2] In fact the Ministry of Community Development was reduced to a department and the role of enabling the panchayats was incorporated as part of rural development.

at the district level and Mandal Panchayat (MP) for a group of villages with a population of 15,000-20,000, the key level being ZP. A number of state governments – including Karnataka, West Bengal and Andhra Pradesh – revised their Panchayat Acts passed earlier to match these recommendations.

Following the recommendation of the Thungon Committee, the Ministry of Rural Development, during the 1980s, declared that the Panchayati Raj bodies should be constitutionally recognized. The then Prime Minister – Rajiv Gandhi – presented a constitution amendment bill to this effect and in 1989, the 64th Amendment Bill was introduced in Parliament. The contents of this bill were based on a draft by L. M. Singhvi, appended to the Ashok Mehta Committee report. This bill could not be passed in Upper House – the Rajya Sabha.

1992-93 brought sweeping changes to the local governance structure, as two constitutional amendment bills were introduced, and subsequently passed in Parliament – one for rural and the other for urban local governance (the Seventy-third [Amendment] Act, 1992 and the Seventy-fourth [Amendment] Act, 1992. The 73rd Amendment added a new part, namely, Part IX "The Panchayats" and a new schedule (the XI Schedule) to the Constitution, listing the powers, authorities and the responsibilities of the panchayats. Articles 243 to 243-O were inserted in the constitution-related mandatory provisions to be implemented by the States.[3] Table 1 shows the status of the panchayats as in 2011.

Table 1: Status of panchayats

Panchayat Level	Total Number	Elected Representatives
Village	2,32,855	26,45,883
Intermediate	6,094	1,56,794
District	542	15,613
Total	2,39,491	28,18,290

The

proportion of elected Scheduled Caste (SC) representatives has increased from 12.55 percent in 2000 to 18.66 percent in 2010, and that of Scheduled Tribe (ST) representatives for the same period, at the all India level, from 8.58 percent to 11.83 percent. The constitutional amendment also provides for political reservations for women. Though the mandatory provision is 33 percent, a few state governments have set the limit at 50 percent. Even in panchayats that have not been reserved, the proportion of women elected is approximately six percent. There are at present approximately 100,000 women representing the village panchayats.

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[3] For the discussion on the provisions of the 73rd Constitutional Amendment Act, see Chapter 3 of Nagarajan, Binswanger-Mkhize and Meenakhshisundaram, *Decentralization and Empowerment for Rural Development: The Case of India* (2013) (Forthcoming) Cambridge University Press. Subsequent to the passing of the Constitution Amendment Act over two decades ago, most of the mandatory provisions have been complied with by the state governments. Almost all state governments have held elections to constitute panchayats at the appropriate levels

There is variation in the implementation of the provisions of the amendment. For example, while all the states have constituted their finance commissions – to deal with the finances of the panchayats – more than once, 12 states have had three state finance commissions so far. Of these, Bihar, Himachal Pradesh, Madhya Pradesh, Punjab and West Bengal have accepted their reports and elsewhere these are under consideration. The devolution of the 3Fs, i.e. Functions, Finances and Functionaries by the states is exceedingly uneven. While across the key sectors the state panchayat laws mandate a role for the panchayats, in most cases, the law is ambiguous enough to allow for both decentralized and centralized modes of program management/ service delivery to co-exist. In some cases, where the states have clearly devolved such responsibilities to the panchayats, these services are either still largely being provided in a top-down manner through the state civil service machinery or the ability of the panchayats to deliver these is limited due to their deficient financial and administrative powers. Therefore, these services continue to elude the citizen. Doubts continue to be expressed about the capacity and accountability of Panchayati Raj Institutions (PRIs).[4]

No doubt, there has been considerable progress in the last few years in the institutionalization of the decentralized planning process. According to the State of Panchayat Report 2008-09, most states had provisions for local planning in their panchayat legislations, including deliberative processes in Gram Sabhas, successive integration of plans at intermediate and district panchayats and preparation of the draft district plan by the District Panchayat Committees (DPCs). A survey conducted by NCAER shows that DPCs are constituted and functional in almost all the states. Comprehensive development plans are being prepared in some manner in all the backward districts to meet the requirements of the Backward Regions' Grant Fund (BRGF) and are approved by the DPCs before being forwarded to the state governments. However, the process is not satisfactory and largely remains program-specific. As compared to district level planning, planning at the Gram Panchayat level has been more participatory, although like district planning it is more programatic and not comprehensive.

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[4] Decentralized planning is the core function of local self-governance envisaged by the constitution amendment. Article 243 G (i) enjoins the panchayats to 'prepare plans for economic development and social justice.' By asking the panchayats to plan programs for their jurisdictions, the Constitution has underscored the democratic, inclusive and instrumental value of the local governments. The local governments are to *prepare* the plans while the District Planning Committees (DPCs) are to only *'consolidate'* the plans and make *'draft development plan for the district.'* Thus the planning function of a local government assumes critical importance in rural governance. The Planning Commission has given the roadmap for decentralized planning by providing Guidelines for District Planning (2006) and a District Planning Manual (2008). However, these guidelines have not been translated into action in most states and the planning process continues to remain top-down and not bottom-up.

3. Literature

The literature germane to the capacity of panchayats to effect service provision and enable access is quite extensive. Bardhan and Mookherjee (2000, 2006) assess the effects of local capture on allocation in a decentralized economy. The impact of racial, ethnic and social fractionalization on access to public goods has been examined by Alesina et al. (1999), and Benabou (1996). They show that positive benefits of public programs can be undone by ethnic fractionalization of the user community.

There are a large number of micro studies that explore the role of the panchayats in enabling efficient provisioning of services. Mullen (2007), on the basis of a study of six villages in Uttar Pradesh, West Bengal and Karnataka has shown that when panchayats are co-opted by the local elite – social, economic or political – they are likely to be biased in their management and delivery services. Conversely, when panchayats are not captured by dominant local groups, they are able to function as mandated, targeting social welfare programs to the neediest and thus improving the latter's social wellbeing. Dash and Panda (2009) have examined the role of the Village Education Committees (VECs) in improving the quality of education in schools located in a tribal dominated district of Orissa. They find that the presence and adequate functioning of the VECs improves the quality of learning as well as of teaching in schools.

Murdia (2005), on the basis of a sample survey of selected villages in Maharashtra concludes that PRIs have not yet become the real institutions of self-governance; they are not able to efficiently deliver services due to the inability of the vulnerable groups to participate in the process of governance, and also because there is no devolution of powers by the governments at the higher level. The incapacity of the Gram Sabhas to make decisions and insufficient empowerment of such institutions within the panchayats are also cited as reasons for poor quality service provision.

So, what are the necessary steps for the panchayats to become effective in service provision? Oommen (2004) examines a few villages in Kerala and concludes that the constitutional mandate to create participatory democracy, through institutions of self-government, needs a different paradigm of politics, development and culture. He believes that social audits are necessary and such audits are a function of the quality of leadership. Unless the households in general and vulnerable groups such as women are treated as agents of change by the panchayats, the linkage between the PRI and improved service delivery will be weak or altogether absent.

Dash and Panda (2009) surveyed 30 members of 10 village education committees in Orissa and found them to be actively involved in school construction, enrolment drives, awareness campaigns, changing the schooling habits of children, stemming the dropout rates among children and non-attendance of teachers, increasing the revenues, supervision of expenditures, and organizing cultural activities. Minutes of meetings were regularly recorded. Relationships with the teachers were cooperative. The VECs were judged to have positive influence on the development of the schools. Kremer and Muralidharan (2008) focus on the choice of private schools and also examine their impact on educational achievements, mainly the quantitative skills. They show that 28 percent of the population of rural India has access to fee-charging private primary schools in the same

village, and that 16.4 percent of children aged 6 to 14 years attend these private schools. Nearly 50 percent of the rural private schools in the sample were established five or fewer years before the survey.

There is significant amount of literature that studies the impact of political reservations on public goods. Descriptive studies tend to emphasize the hurdles faced by elected women in providing these goods. For example, the Planning Commission – based on a study of four villages in Karnataka – concluded that effective provision of services in panchayats headed by women is possible through strengthening their financial resources and by building their capacity to govern. However, the latter is possible only if the system is made truly participatory. Singh and Kaur (2007) have surveyed the role of women leaders in panchayats in the state of Punjab. In most cases, the respondents were elected as panchayat members for the first time and hence were inexperienced. They were also significantly aligned with political parties. Very few of the elected representatives were even aware of the provisions under the 73rd Amendment. Even in villages reserved for women, the participation by women members in the Gram Sabhas was poor; a majority of the women respondents perceived the panchayats as agencies involved in the construction of street lighting and drainage systems. Non-participation by women was attributed to the lack of freedom granted to them by their respective families, and non-recognition of their opinions when these were expressed.

The negative assessments coming from descriptive studies are, however, contradicted by several quantitative studies. Chattopadhyay and Duflo (2004), for example, formally examine the impact of the random assignment of 33 percent reservation for women for the position of the Pradhan – the panchayat head. They develop a formal model of political choice and use data from 265 panchayats in West Bengal and Rajasthan to compare the type of public goods provided in reserved and unreserved panchayats. They find that in West Bengal, the active and vocal participation of women in panchayat meetings is significant in cases where the Pradhan's position is reserved for women. Beaman et al. (2006) extend the analysis in Chattopadhyay and Duflo to 11 Indian states and investigate the impact of female leadership on the availability and quality of and the satisfaction with public goods. Consistent with Chattopadhyay and Duflo, they show that reserved Gram Panchayats (GPs) headed by women provide more public goods, especially in the area of drinking water. The quality of these goods is as high – if not higher – as in the non-reserved villages.

The general conclusion that women Pradhans provide more public goods may not hold true in all states. Ban and Rao (2008b) use information on the characteristics of elected officials and GP public goods investment activities in Andhra Pradesh, Karnataka, Kerala and Tamil Nadu, and compare service delivery in reserved and unreserved GPs headed by women. The results suggest that female- and male-headed GPs provide similar services in the areas of drinking water supply, health, sanitation, roads, transport, and electricity. An exception to this is in the area of educational activities: GPs reserved for women presidents involve themselves in a significantly wider range of educational activities as compared to unreserved constituencies.

Time allocated to productive work by different members of a household will contribute to the welfare of the household. Their inability to participate in such work is likely to affect the household income. Women typically have less time available for productive work than do men, and such systematic variations across genders may be due to women having to spend more time doing household work such as accessing water supply sources, and to differences in health and education status. The literature linking the various factors that impinge on a person's ability to do productive work is diverse (see, for example, Mitik and Decaluwe 2009; Ilahi 2000; Munshi and Rosenzweig 2008; Leslie and Paolisso 1989; Glick and Sahn 1998).

From the literature that lays emphasis on power relations in this context one can infer that women's empowerment in matters related to decision making within the household and, their participation in local governance could significantly explain intra-household time allocation. Other factors that can affect time allocation include inheritance, inherited wealth of individual members (Browning and Gortz 2006) – which define power structures and preference for leisure over work – and, off-farm wages for women (Kimmel and Connelly 2007). Kimmel and Connely (2007) also demonstrate that time spent by mothers with their children does not respond to price or demographic changes much like home production or leisure, and that, somewhat surprisingly, the caregiving choice responds most like paid labor particularly in the response to higher wages. Therefore, time spent at home is not considered productive work.

In the literature it has been argued that if the time needed for domestic labor could be reduced, then there would be time available for income-generating activities (Ilahi and Grimard 2000; Morrison, Raju, and Sinha 2007; Ray 2007). This has led to calls for better tailoring of infrastructure investments to women's needs to reduce the time spent on domestic chores. However, increasing domestic labor productivity may well increase time spent on other activities – such as domestic work and leisure – rather than increase the supply of time to produce market goods, both labor and services. Koolwal and Van de Walle (2010) do not find any significant effects on women's paid labor due to improved access to water. While the household welfare effects are found through the improved enrolment rates of children of households with improved access to water, they find that the impact on self-employment is ambiguous.

A significant lacuna in the extant literature is providing a plausible link between political reservations, public provision of goods such as water, access to water, school choice and literacy and role of governance. If improved service provision reduces the time spent in accessing a public good – such as water – then, what is the economic impact on the household? Political agency can have significant intra-household outcomes caused by empowerment. Furthermore, the indirect effects through better management of public service delivery can alter not only the intra-household time allocation but also create avenues for economic outcomes. The current chapter enables us to understand the link between the choice of schools, growth in private expenditures on schooling and literacy rates.

4. Data and Methodology

Data

The data used for the research are based on the ARIS/REDS surveys of NCAER. They provide us with a combination of community, household and member level information based on a nationally representative sample of 241 villages from rural India across 17[5] states, collected over six rounds encompassing the period 1969 to 2006.[6] There is detailed demographic information on households, participation in welfare schemes, governance, evaluation of governance by households and members of households, composite pattern of cultivation, infrastructure, availability of public goods, etc., with community data. The data cover a period of considerable change in the rural economy of India, both in terms of structure as well as the policy regime. In addition, they allow the tracing of the impact of changes in policy onto the households and fix these households within a policy space.

Qualitative Approach

Qualitative evidence is provided in support of the ability of the panchayats to effectively provide, manage, and guarantee access to services. We use focus group discussions for this purpose. The rationale for choosing villages for such discussions is motivated by the postulate that variations in governance structure lead to varying outcomes. Four villages (two from the state of Maharashtra – Bhondawade and Dabewadi [from Satara district], and two from Orissa – Ambagada [from Ganjam district] and Bandhagan [from Bhadrak district]) were chosen for conducting focus group discussions. These four villages typically fall in the traditional water scarcity zone of the respective states. Over the years the problem of water scarcity has been handled differently in these villages. In two of these, an alternate system of service delivery (Paani Panchayat) has come into existence, while in the other two, a formal body (Gram Panchayat) looks after the provision of water.

There are parallel institutions such as Meena Manch and the Sarva Siksha Abhiyan. The Meena Manch is an institution specific to Maharashtra to promote the education of girl children. The Sarva Siksha Abhiyan has greatly energized the role of the panchayats in Maharashtra in matters related to the management of schools, while this is not the case in Orissa. Two of the villages (one each from Maharashtra and Orissa) are headed by a woman Pradhan. These states offer some variations in the extent of decentralization to the PRIs and in other parallel institutions which help examine how governance can affect outcomes in the areas of water and education.

The discussions were conducted in two to three groups with the participation of all the major stakeholders from the village involved in the process of service delivery (formal and informal bodies of governance viz. Gram Panchayats, VECs/SMCs, Paani Panchayats) and beneficiaries of that service from the village (community members/villagers).

The focus group discussions were centered around the following 10 issues: i) the history of water access and availability, and the prevailing attitudes to schooling; ii) structure of

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[5] The states include Tamil Nadu, Kerala, Karnataka, Maharashtra, Gujarat, Rajasthan, Punjab, Haryana, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Orissa, Chhattisgarh, Madhya Pradesh, and Andhra Pradesh. The state reorganization that influenced Bihar, Madhya Pradesh and Uttar Pradesh did not affect the selection of villages that have remained intact since 1969.

[6] The first three rounds included Assam and Jammu and Kashmir. However, the 1982 round did not include Assam, while the 1999 round excluded Jammu and Kashmir (both incidents affected by the local law and order situation prevailing in these states at that time). The current round excludes both these states.

access to drinking water and schooling; iii) quality of management of water and schools; iv) the role of the elected panchayat officials in the provision and management of water and education; v) role of the Pani Panchayat in the provision and management of water resources and of the VEC and the PTA in the management of schools; vi) interactions of Gram Panchayats with the Pani Panchayats and the VEC; vii) perception of the community regarding the respective roles of Pani Panchayats, VECs, PTA, and the panchayat in the management of water and schools; viii) school choice and the expectations of parents and community members with regard to the quality of education; ix) the impact of improved service provision on economic welfare; x) service provision in the panchayats headed by women.

Empirical Approach to the Problem

In order to analyze the causal links between the choices of individuals, households or local governments and the outcomes thereof, economists often build simplified optimizing or bargaining models that are used to gain insights into the structure of the problem being analyzed. They will then form the basis for inferring the expected signs and the magnitude of the impacts. The models are built to be theoretically consistent. The empirical estimation equations that emerge from this structure are the "reduced form equations" because the structure of the underlying problem has been reduced to an estimation equation. If the structure is well defined, then structural parameters can be recovered from the estimated equations, which will help in understanding the pathways of the impacts to be analyzed.

It has often been noted that different structures can lead to similar or identical reduced form equations. Nevertheless, the reduced form equations often produce coefficient estimates that are directly policy relevant. For example, change in panchayat expenditures arising out of untied funds can be estimated to have increased infrastructure investment, suggesting that the magnitude of untied grants should be increased to accelerate infrastructure investment. Therefore, even if the exact structural form is not known, the reduced form parameters are often very useful. What they do not reveal, however, is the exact pathway by which the policy-relevant impact occurs.

To illustrate this we present the methodology adopted to study village literacy that is estimated using a two-stage regression approach as follows:

$$L_{vit} = \alpha_k X_{kit} + \delta_m V_{mit} + \lambda_1 L_{vit-1} + \varepsilon_{it} \qquad \text{(Where, I = 1, 2, 3...)} \qquad (1)$$

$$X_{kit} = \beta_l Z_{lit} + \upsilon_{it} \qquad (2)$$

Here, L_{it} is a variable denoting village level literacy rate, X_{kit} is a vector of school choice (public private and panchayat schools) and school expenditure variables. V_{mit} is a vector of village level characteristics like the average distance of a village from a nearby town, proportion of the village electrified, and L_{vit-1} is the literacy rate in the previous period. $Z_{lit \, is}$ a vector of several village level characteristics like the existence of VEC, participation of

mothers in the VEC, reservation for women, and panchayat expenditure on school. The production function approach is used to understand the impact of improved service provision as well as choices on outcomes. The pathways of the impacts of improved governance are all contained within the first stage outcomes.

Like the two-stage regressions another common but powerful approach is Ordinary Least Squares (OLS) which is briefly described in the following paragraph. Here OLS is used to assess the impact of political reservations on the quality of public goods provision, the willingness of the concerned parties to contribute to public goods, and political participation. Since political reservations are random phenomena, using OLS gives us unbiased and consistent estimates of the impact of the reservations. Formally, with subscripts i,v,t denoting individuals, villages, and time periods and the superscript j standing for specific issue of relevance, we estimate

$$Y_{ivt}^j = \beta_v^j + \beta_1^j R_{vt} + \beta_2^j X_{ivt} + \beta_3^j D_t + \epsilon_{ivt}^j \qquad\qquad (3)$$

Where Y_{ivt}^j is the outcome variable of interest, β_v^j denotes a village or state fixed effect, R_{vt} is a dummy for reservation of the Pradhan's position that takes the value of one if the Pradhan's position in village v at t was reserved for women, and zero otherwise, X_{ivt} is a vector of household and individual characteristics, D_t is a vector of dummies for Gram Panchayat terms (current, previous and previous to previous) and $\beta_1^j, \beta_2^j, \beta_3^j$, are parameters to be estimated with main interest in β_1^j.

5. Descriptivist Explanations[7]

Table 2: Descriptive statistics

Variables	2006	1999	% change	t-ratios
Education				
Probability of 13 to 15 year olds being able to read and write	56	n.a.		
Probability of a household not sending at least one child to school	21.9	n.a		
Villages with private school (%)	33.69	26.06	29.28	5.74***
Villages with public schools (%)	81.72	72.12	13.31	4.73***
Villages with panchayat school (%)	5.01	n.a.		
Index of quality of education (qualified teacher, etc.)	84	81	3.70	**
Presence of religious instruction (%)	11.59	n.a		
Water and Sanitation				
Households with secure water source (%)	88 .88	76.14	16.73	18.84***
Average number of public taps in a village	3.44	3.1	10.97	6.72***
Average number of drinking wells in a village	2.51	2.55	-1.57	-9.64***
Households with toilets (%)	40.3	29.68	35.78	9.63***
Average number of public toilets in a village	0.67	0.39	71.79	3.43**

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[7] Unless mentioned otherwise, source for all tables is Binswanger et al. (2012)

Houses with electricity connections (%)	49	43	13.95	2.34**
Brick houses (%)	66	60	10	2.12*
Households reporting clean surroundings (%)	37.01	34.41	7.56	2.03*
Households reporting dirty surroundings (%)	3.82	5.22	-26.82	-4.82***

With regard to schooling, the chances of 13 to 15 year old children being able to read and write are distressingly low – at 56 percent. About 22 percent of the households still do not send all of their school-going age children to school; they keep at least one child at home. The type of schools that are more common in rural areas are public schools; they are to be found in almost 82 percent of the villages, with their presence having increased by nearly 20 percentage points. Private schools, on the other hand, are present in about a third of the villages and they too have increased by about 10 percent. Hence there has been a proportional increase in the number of private and public schools in the villages. Panchayat schools, which were usually established by the panchayats that did not have a public school, are present in about 5 percent of the villages. The index of the quality of education, based on infrastructure, teachers, etc., has risen slightly by 3.7 percent in the same period. Religious education is not very common in the villages and is available in less than 12 percent of schools.

All indicators associated with water and sanitation in the villages have improved, albeit to varying degrees. The proportion of the drinking-water wells in villages has gone down, with a corresponding decline in open wells that are not safe. On the other hand, there is improved access to water due to an increase in the number of public taps. In 2006, there were complaints from 60 percent of household members in connection with water problems and action was taken in about half the cases. For education the complaints to the Pradhan are only between 12 to 14 percent, but problem resolution in this area is much higher – at 87 percent. For all the services, the frequency of complaints has increased, either because there are more problems or because the villagers have become more active, and the resolution of school- and water-related problems has resulted in improved services. It is also seen that the proportion of Pradhan positions reserved for women has gone up by 16 percent.

Table 3: Governance, employment and wages

Governance	2006	1999	% change	t-ratios
Number of Gram Sabha meetings held	5.77	4.94	16.80	
Number of household members attended Gram Sabha meetings	87.28	75.69	16.63	
Panchayat reserved for women (%)	30.47	26.18	16.39	
Approached Pradhan to complain about water problems	60	48	25	6.32***
Action taken to solve water problems	29	25	16	3.76***
Approached Pradhan to complain about school problems	12	11	9.09	1.34
Action taken to solve school problems	87	84	3.57	1.95
Household size	5.16	6.02	-14.29	-18.26***

Household wealth	159521.1	110230	44.71	44.71
Employment and wages				
Number of days of wage employment and self-employment	161.05	126.38	27.43	3.12**
Agriculture wage (male)*	63.26	51.25	23.43	3.24**
Agriculture wage (female)*	59.51	39.41	51	2.79*
Non-agriculture wage (male)	93.45	67.17	39.12	1.23
Non-agriculture wage (female)	89.38	57.08	56.59	3.27**

*Agriculture wage paid by farmers for all operations.

Households' expenditures (private expenditures) on schooling have increased by 16 percent over the period and are at Rs 1,888 per year (calculated at 1991 prices).

Table 4: Household expenditure on schooling

Household expenditure	Current Rs	Previous Rs	% change	T-ratio
Household expenditure on schooling (annual)	1888.765	1626.191	16.14	3.48***

Panchayat expenditures on education have also increased sharply, more than doubling from the previous to previous panchayat period to the current period, to Rs 68,473. A slightly lower increase took place in water expenditures which reached Rs 60,907. Panchayat expenditures for health declined and now are at Rs 26,137.

Table 5: Panchayat expenditure on key services

panchayat expenditure	Current	previous	previous to previous	T-ratio (current & previous)	T-ratio (previous & previous to previous)
School (annual)	68437	42253	29175.5	7.28***	9.45***
Water (annual)	60906.95	42942.93	25798.06	6.70***	7.20***

Table 6 compares the preferences of household members in the allocation of public expenditures as against the actual allocation in the villages. All adults were asked the question as to how they would allocate an additional expenditure of Rs 100,000 to different categories of public expenditures if they had the power to do so (such planned allocations will mimic their own preferences). For unreserved panchayats, the baseline, the preferred share for education was the highest at 25 percent, followed closely by the share for water at 20 percent. For education the actual shares are lower, with actual share in schooling expenditure falling to only about a fourth of the preferred share. This indicates a serious mismatch between household preferences for expenditures and actual expenditures.

When the Pradhan's position is reserved for a woman, or if it has ever been reserved for a woman, both the preferred and actual shares for water and education go up. Not only are preferences adjusting, but the actual shares are also getting closer to the preferred shares, suggesting an improvement in the workings of democratic decision-making.

Table 6: Village expenditure shares preferred by households versus actual shares

	Water		School	
Status of reservation	Preferred	Actual	Preferred	Actual
No reservation	0.24(.19)	0.16(.07)	.25(.13)	.06(.09)
Reserved in current period	0.32(.15)	0.2(.030)	.27(.14)	.13(.16)
Ever reserved	0.34(.18)	0.22(.09)	.27(.14)	.12(.14)

Local governments put education on the agenda of Gram Sabha meetings in close to 10 percent of the meetings, with water and sanitation following at 8.8 percent (Table 7). Water and education are more frequently on the agenda when the position of the Pradhan is reserved for a woman. For education the frequency goes from 6.3 to 11.6 percent after the reservation of the Pradhan's position for a woman. These can be interpreted as causal impacts, because the reservations are random assignments.

Table 7: Topics of Gram Sabha meetings and reasons for attendance

Agenda	Entire sample	Reserved	Unreserved
	Percentage of meetings		
Water	8.83(0.284)	10.29(0.303)	8.192(0.274)
Sanitation	8.76(0.283)	8.69(0.281)	8.79(0.283
School	9.67(.022)	11.6(.161)	6.30(.108)
Reasons for attendance	**Percentage of individuals**		
Attended GS meeting because water was agenda	6.3(0.243)	8.49(0.278)	5.34(0.225)
Attended GS meeting because sanitation was agenda	5.61(0.23)	7.73(0.267)	4.68(0.211)
Attended GS meeting because school was agenda	9.23(.147)	10.46(.030)	6.77(.0321)

Between 4.8 to 9.3 percent of individuals attend Gram Sabha meetings because one of these services is on the agenda. The attendance increases significantly when the Pradhan's position is reserved for a woman, indicating the positive impact of such reservations on Gram Sabha attendance with respect to essential services.

Quality of public and private services

This section shows that facilities, accessibility, availability of staff, and service standards are better in private schools than in public ones. Where schools are concerned, the differences are especially stark between panchayat and private schools. Hence people's preference for private schools despite the latter's added costs is not surprising.

In Table 8 all the infrastructure characteristics of public, panchayat and private schools show that the private schools are best equipped in that they have separate rooms for each grade, blackboards, availability of playgrounds, clean drinking water and functional toilets. The panchayat schools fare by far the worst with regard to all these basic requirements, with the public schools coming fairly close to private schools. The same holds true for the two indicators of the availability of teachers, namely the student-teacher ratio and the rate of teacher absenteeism, which in private schools is less than 3 days, while in panchayat schools

it is more than four times as much. In terms of the characteristics of the students and teachers, there is no statistically significant difference in male-female enrolment ratios or in the average age of children (not shown). However, the schooling of a child's parents (both mother and father) is the highest in private schools, followed closely by government schools, but it is significantly low for panchayat schools, especially in the case of mothers.

Table 8: Quality of schools

VARIABLES	Public	T-test Pubilc vs Panchayat	Panchayat	T-test Panchayat vs Private	Private	T-test Private versus public
Separate rooms for each grade (% of schools)	0.784	***	0.194	**	0.927	***
Density of blackboards in schools	0.889	***	0.618	*	0.993	***
Availability of playgrounds (% of schools)	0.876	***	0.363	*	0.945	***
Availability of clean drinking water (% of schools)	0.977	***	0.672	***	0.99	***
Functional toilets (% of schools)	0.758	*	0.243	**	0.841	**
Student-teacher ratio	41.726	***	59.35	**	35.235	***
Teacher absenteeism (days/month)	6.292	***	12.177	***	2.892	***
Average years of schooling of mother of the child (years)	4.972	**	2.748	***	5.222	***
Average years of schooling of father of the child	6.815	***	5.06		7.251	***

Governance and service provision

As discussed earlier, Indian legislation includes reservation of the position of the village head (Pradhan or Sarpanch) for scheduled castes and tribes, and for women. While reservation of the Pradhan's position for the scheduled castes and tribes depends on their total share in the village population, and does not change over time, the reservation of this position for women is through random allocation. We can, therefore, see the impact of women's reservations on governance in the villages directly from a two-way table.[8]

Gram Sabhas had water on their agenda in nearly 9 percent of their meetings (Table 7). Water was more frequently on the agenda in panchayats where the Pradhan's position was reserved for a woman. More than 6 percent of individuals attended these meetings because either health or water was on the agenda, and more so if the Pradhan'a position was reserved. More than 75 percent of men and women reported problems related to drinking water (with a resolution rate of roughly two-thirds).

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[8] The two-way tables for caste reservations do not allow us to do so, as these impacts may be confounded by village fixed effects.

Table 6 reported the actual and the preferred shares of panchayat expenditures on the two sectors. The preferred expenditure shares for water and education in unreserved panchayats are 25 percent; they are higher in panchayats that are currently reserved or had been reserved in the past. The actual expenditure share for water (16 percent) is much lower in panchayats that are not reserved for women, while it is higher for health (at 20 percent). Once a panchayat has been reserved for women, the higher preferred and actual spending levels persist even after the reservation period has expired, indicating significant learning/legacy impact of reservations.

Women's active and vocal participation in Gram Sabha meetings is greater in reserved villages. The decline in the magnitude of passive participants in Gram Sabha meetings, from 38 to 12 percent, is significant. We also note that 21 percent of the female respondents – who participated in the Gram Sabha meetings in villages that had reservations at least once during the past 15 years – reported being able to protest against the current form of governance, as against 12 percent in villages that never had reservations.[9]

Both current and past reservations have helped reduce the time spent by both females and males in fetching water, although the effects are not statistically significant for females in currently reserved panchayats and for males in earlier reserved panchayats (Binswanger et al. (2012). In the currently reserved panchayats women have been able create more time to tend to their own crops, their livestock, time for other productive work, and non-farm activities in their self-employed capacity, while males were able to allocate more time to their own livestock, non-farm employment, non-farm self-employment and other productive activities. Both genders reduced their agricultural wage labor slightly. For past reservations, however, the time reallocations are not the same for both genders. This reallocation of time to include productive activities may, therefore, be primarily due to the impact of reservations on the availability of drinking water. The results, however, are also consistent with the impact of women's reservation in other areas vis a vis productive use of time.

In the case of education, in panchayats reserved either on caste or gender basis there are more meetings and discussions on issues related to schools. The panchayats also spend much more financial resources on both types of schools (more than 50 percent higher than in unreserved panchayats and slightly higher than 100 percent in panchayats reserved for women). It is not just the level of expenditures on schooling that go up but also the proportion of such expenditures in the overall panchayat level expenditures. The reserved panchayats are more likely to have a functioning village education committee, and the VEC meetings are more likely to be attended by the mothers of the currently enrolled children. All these differences are statistically significant (Binswanger et al. (2012). To sum up, reservations on the basis of gender have a very significant impact on school governance.

Village education committees too appear to have an impact on the quality of panchayat governance in the area of education, suggesting that the involvement of specialized education committees in panchayat governance is complementary. In villages where there are VECs, Gram Sabha meetings are held more often, with school quality and administration

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[9] See Binswanger et al. (2012).

both being on the agenda, compared to villages where there are no VECs (9.1 meetings compared to 7.5 such meetings); annual expenditure by the panchayats on schooling is more than 50 percent higher; the share of the panchayat expenditure going to schools is three times as high (at 12 percent) in villages with VECs. Even though all these differences are statistically significant, the fact that we are unable to control either the village or school fixed effects, ascribing causality between the presence of VECs and the quality of governance germane to schools at the panchayat level would not be prudent.

It is thus clear that many panchayats are active in these sectors, activity levels being the highest in the drinking water sector. The active participation of villagers in the Gram Sabha has increased in all dimensions. Reservations on the basis of caste, tribe or gender increase the people's participation; improve the level and quality of village governance; increase the availability of panchayat funds for education and water supply, as well as the willingness of women to contribute to these and other services; they increase the probability of having a VEC in the village, which in turn may lead to greater involvement of village government in education; finally reservations help increase the time allocated to productive activities, and to satisfactory healthcare.

5. Results

5.1 Qualitative explanations

The focus group discussions brought out a number of facts:

The existence of panchayats, while clearly necessary, has not resulted in improved service delivery by institutions. A number of enabling factors need to be put in place to make it possible for the PRIs to deliver on their mandated provisions. For other institutions like the Gram Sabha, VEC, the PTA, Pani Panchayat, and water user associations to work, they need to have an interactive relationship with the elected panchayat. Relationships between PRIs and the special bodies were generally complementary, rather than competitive. A number of examples of specific complementary investments and actions were cited. This may be partly because leaders rotate between these institutions over time.

Both Gram Panchayats and special bodies can be effective in leading the improvement of services, as is evident from the two villages that made progress in the availability and quality of water. Where the special bodies are present and strong (all VECs and two Paani Panchayats), they have an especially beneficial impact on the quality of services. However, such bodies can also become dysfunctional as a consequence of divisive village politics, as seen in the demise of the Pani Panchayat in Ambagada, Orissa. In cases where cost recovery is applied, service delivery is better. However, this is not easy to institute and maintain over time, with opposition often strong and vocal.

With improved access to drinking water less time is wasted fetching water and standing in line. Time thus saved is used for productive work, mostly in self-employed capacity in agricultural and non-agricultural activities, leading to improved income and welfare.

Attitudes on the education of girls have changed significantly in all villages, with special initiatives often sponsored by the Central government or the Maharashtra government in favor of the girl child, that are carried out by the VECs, school management committees and teachers. Social attitudes to boys and girls interacting in schools have also changed in Maharashtra, but not yet fully in Orissa, where girls still sit separately at the back of the class. Programs and special incentives that foster enrolment and retention of girls (especially from disadvantaged backgrounds) in school are quite successful, and so are such innovative schemes as the UNICEF supported *Meena Manch* in *Bhondawade* of Maharashtra. Institutions like the VECs too have altered the perception of the village households with regard to the quality of education in public and panchayat schools. Parents in villages with active VECs and PTAs are willing to send their children to panchayat and public schools.

Women panchayat presidents have brought about significant positive developments in service delivery in two out of three villages that have or had a woman Pradhan. Women Pradhans are in general viewed favorably by all segments of the village population.

The preceding results show that both village panchayats and specialized committees can improve service provision, but that they do not always succeed. These results are nuanced and in many ways anticipate and validate in advance the findings that follow from the empirical analysis of the data.

5.2 Empirical Results

5.2.1 Schooling

Impact of school type and village characteristics on village level literacy

Equation 1 is the second stage of the estimation strategy. We estimate equations 1 and 2 as two-stage instrumental variables regressions. The observations are the test scores of the children enrolled in school. We use village fixed effects for village-specific unobservable effects. Dummy variables are included for the private and panchayat schools so that the performance of the public school is the base. The results from the various tests viz. (a) excluded instruments, (b) the Anderson Canonical Correlation likelihood ratio test under the null hypothesis that equations are under-identified, (c) the Cragg–Donald F-statistic under the null of weak identification and (d) the Sargan test of over-identification are all rejected. This suggests that, one, there are no redundant instruments that have been used; two, the equations are not under-identified; three, there are no weak instruments; and four, the over-identification test is rejected. The Wu-Haussmann F test[10] suggests that the regressors are endogenous and the two-stage approach used here is the preferred method of estimation. Similarly, the Durbin-Wu-Haussmann chi square test shows that only the two-stage instrumental variable estimation is consistent (compared to GLM).[11]

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[10] This is the test of endogeneity and performed under the null that the regressors are exogenous.
[11] This test balances the consistency of instrumental variables estimation against the efficiency of the least squares estimation. It tests under the null that instrumental variables estimation and least squares estimation are both consistent.

We find that the predicted probability of students being able to read and write is 32 percent higher for private schools compared to public schools, whereas it is 12 percent lower for panchayat schools. This then suggests that private schools in the village are a significant contributor to village literacy rates and to managing the overall literacy rate. An increase in a household's predicted expenditure increases the probability of a child being literate; a 10 percent increase in the expenditure, for example, would raise this probability by 2 percent. This will raise the village level literacy by a corresponding percentage. A 10 percent increase in the past village literacy rate (used as a control variable) increases the predicted village literacy by 8.3 percent. A one kilometre increase in the distance to the nearest town, on the other hand, decreases the predicted village literacy by 2 percent. This suggests that being closer to an urban center has a positive impact on village literacy rates. An increase in the electrification rate of village homes by 10 percent increases the village literacy rates by 3.3 percent, which is also a highly significant impact. Village literacy, therefore, depends on the choice of school, private education expenditures, distance from urban centers and household electrification.

Table 9: Determinants of school choice and private education expenditure

VARIABLES	(1) Public School	(2) Panchayat School	(3) Private School	(4) Log of HH School Exp
Only public schools in the village	0.109***	-0.0625***	-0.0464***	0.268***
	(0.0172)	(0.00611)	(0.0163)	(0.0627)
Only panchayat schools in the village	-0.272***	0.363***	-0.0904***	0.0729
	(0.0255)	(0.00906)	(0.0242)	(0.0930)
Only private schools in the village	-0.198***	-0.0164***	0.214***	0.813***
	(0.0147)	(0.00522)	(0.0140)	(0.0536)
Quality of education (qualified teacher, etc.)	-0.0248*	-0.0104**	0.0351***	0.178***
	(0.0140)	(0.00497)	(0.0133)	(0.0511)
Presence of religious instruction	-0.0900***	0.0185***	0.0716***	0.215***
	(0.0187)	(0.00665)	(0.0178)	(0.0683)
Predicted wealth	-0.06170***	-0.0591***	0.761***	0.149***
	(0.00125)	(0.00444)	(0.0119)	(0.0456)
Predicted probability to read and write	0.0585*	0.0309***	0.0893***	0.601***
	(0.0309)	(0.0110)	(0.0294)	(0.113)
Predicted probability of one child not going to school	0.373***	0.0179	-0.391***	-0.760***
	(0.0596)	(0.0212)	(0.0567)	(0.218)
Panchayat expenditure on schools	0.0302	0.0530***	0.00832	-0.0653***
	(0.135)	(0.00481)	(0.0129)	(0.00494)
Women's reservations (for pradhan)	0.128***	0.0158***	0.0286**	0.1977***
	(0.0132)	(0.00470)	(0.0126)	(0.0483)
Regime change other jati to own jati	0.0411*	0.00426	-0.0453**	-0.245***
	(0.0242)	(0.00860)	(0.0230)	(0.0883)
Predicted issue discussed in the Gram Sabha (school)	-0.00348	0.00715***	-0.00367	-0.103***
	(0.00562)	(0.00200)	(0.00535)	(0.0205)
Does VEC exist in your village	0.0480	0.0449***	-0.00313	0.285**
	(0.0397)	(0.0141)	(0.0378)	(0.145)

Does mother participate in the VEC	0.0378*	0.0137**	0.0241	0.0192
	(0.0196)	(0.00697)	(0.0187)	(0.0716)
Constant	0.774***	0.0559***	0.170***	7.040***
	(0.0312)	(0.0111)	(0.0297)	(0.114)
Observations	5,877	5,877	5,877	5,877
R-squared	0.157	0.394	0.128	0.225

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Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
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Determinants of school enrolment and role of the labor market

Next, we explore the factors that influence the parents' decision in sending all their eligible children to school. We control for variables such as the availability of schools in the village, school type, non-agriculture wage rate, household type (caste), quality of schools, and a village-level development indicator. The results are shown in Table 2 in the appendix. We find that households headed by women (including those headed by widows or women separated from their husbands) are significantly less likely to take a child out of school, indicating a strong desire of single mothers to educate their children. If there is a higher proportion of girl children in a household then a child is more likely to be withdrawn from school. But better nourished children, as measured by their predicted z-scores, are less likely to be withdrawn. The higher the predicted wealth of households, the less likely they are to withdraw a child from school. The scheduled castes, scheduled tribes and other backward castes are more likely to take children out of school. The characteristics of the school are also a significant factor in this decision.

Other points worth noting include the negative impact on the probability of taking children out of school of the perceived quality of teachers, the proportion of female teachers, and the presence of private schools in the village (there is nearly a 40 percent reduction in the probability of even one child being taken out of school.), which also increase the chances of children being taken out of school, while a higher student-teacher ratio and a higher off-farm wage have the reverse effect (there is an 8 percent chance that one child will not be enrolled if non-farm wage rates go up).

These results are important for policy. Governments' incentives to households to ensure the enrolment of their children include a broad range of improvements in school quality and infrastructure, improved nutrition in the mid-day meal schemes, and reducing biases against the vulnerable groups like the scheduled castes and tribes. We also use the predicted probability of withdrawing one child from school as a general control for predicting which school type such parents will prefer. This is important for identifying policy instruments to minimise such withdrawals.

Determinants of school choice and private expenditures on schooling by households

The estimates produced by equation 2 provide us with insight into the school choice decision and triggers on private expenditures on schooling. The equation also represents the first stage in the estimation strategy for examining the impact of school choice and the change in private expenditures on schools by households on village level literacy. The results are shown in Table 9.

We find that the availability of schools matters, as noted by the fact that the attendance in each of the three school types increases at the expense of the other two types when it is the only school in the village. The availability of only one school type in a village increases the private expenditures on schooling, which suggests that restricting the choice means that those who want to send their children to another type of school have to pay more to do so, or they have to compensate by increasing their private expenditures on the only school available. The increase in expenditure is maximum – 81 percent – if only private schools are available. We have seen in Table 10 that if the only school available is private school as opposed to either public or panchayat school, then the probability of withdrawing children declines sharply. The results also show that parents are more likely to send their children to private schools when the quality of education, as measured by qualified teachers, etc., is a factor, or if the inclusion of religious instruction is important. They also send children to private school if they have higher predicted wealth. In each case the private household expenditure on schooling goes up.

We also find that if the observed outcomes in terms of the students' ability to read and write go up then the parents are marginally more inclined to send their children to private schools. Also, the private expenditures on schooling go up when the child has a higher predicted ability to read and write, which suggests that parental spending on children will go up irrespective of the school type provided that the expectations in terms of education outcomes go up. Even in cases where parents are likely to withdraw at least one child from school the private expenditures on schooling rise. This suggests that parents are spending more on the remaining school-going children. However, such parents prefer sending their children to public schools. If at least one child is predictably not likely to go to school, the remaining children are more likely to be sent to public schools, and private expenditures of the household decline.

Governance plays a critical role in school choice and on the level of private expenditures on schooling by households. Increased expenditures by the panchayats on schools seem to be a signal of school quality and parents increasingly prefer to send their children to panchayat schools. Public financial allocations of this type crowd out private expenditures. Political reservations, regime change, discussions in Gram Sabha meetings, participation in VECs, all have significant impact on school choice and on private school expenditures. Political reservations for women increase school attendance in all types of schools, but more so in public schools. Reservations also lead to higher expenditure by household on school. The election of a female Pradhan, therefore, appears to increase awareness with regard to the value of education all around. Regime change (based on the electoral process) leading to a congruence between the Jati of the household and that of the Pradhan increases attendance in public schools at the expense of private schools and reduces the households' education expenses. This decline might indicate private benefits accruing to such households (in the form of being chosen for scholarships, etc)

Discussions about schools in the Gram Sabha meetings signal the commitment of the community and the elected officials to improving efficiency, and increases attendance in panchayat schools, leaving the other school types unaffected. The Gram Sabha thus appears to be especially influential in schools that it controls directly. This also suggests that the

community is able to hold the elected officials to account with respect to the schools directly controlled by the panchayat. More important is the role of the VEC. The very presence of a VEC increases private school expenditures by 28 percent and enrolment in panchayat schools by 4.3 percent. Predicted participation of the mother of the child in the VEC increases the choice of public schools and panchayat schools by a roughly equal percentage, but has no impact on household spending on schooling.

Table 10: Impact of school choice and village characteristics on literacy

VARIABLES	(1) Village literacy
Predicted probability of attending panchayat school	-0.1435***
	(0.0319)
Predicted probability of attending private school	0.316***
	(0.0529)
Predicted Log of HH school expenditure	0.198***
	(0.0381)
Village literacy rate in 1999	0.831***
	(0.0195)
Average distance from this village to nearest town	-0.0189***
	(0.00166)
Proportion of village electrified	0.326***
	(0.0608)
Constant	1.539***
	(0.589)
Observations	5,877
R-squared	0.557
Anderson Canonical Correlations LM statistic	101.034***
Cragg-Donald Wald F statistic	29.984***
Tests of endogeneity	
Wu-Hausman F test:	97.089***
Durbin-Wu-Hausman chi-sq test:	290.988***

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

Explaining the gaps in performance

We have thus far explained the determinants of enrolment, school choice, private household expenditures on schools and literacy. Of significant concern are the persistent gaps in education outcomes across school types. Policy must address these, as such gaps skew the schooling outcomes and affect welfare. We have seen that increased preference for private schooling will be accompanied by increased private household education expenditures which will especially affect the welfare of the poorer and vulnerable households. There is, therefore, a need to better understand the gaps in performance across school types.

Persistent gaps in the performance of children belonging to the same grade across different types of schools could be attributed to differences in: (i) individual and family characteristics, (ii) the infrastructure and financial resources available with the schools and, (iii) quality of governance of schools. The results (Table 11), show that after controlling for the included observable variables, i.e. the entire individual, household, village, governance, and infrastructure characteristics, unobservable school characteristics still lead to 30 percent performance gap between private and public schools, and an 11 percent gap between public and panchayat schools. In order to bridge the gap with private schools, measurable characteristics of public schools would have to be brought to higher levels than in the private schools. The same could be done to bridge the gap between public and panchayat schools. When interaction effects are included in the regressions, the gap associated with unobservable private school characteristics increases substantially, while the gap for panchayat schools gets narrower.

The regression coefficients for the observable variables are all significant, except for the availability of separate classrooms, where only the interaction effect with private schools suggests that they have a larger impact in such schools than in other school types. It is clear that school performance is affected by a large number of factors from all classes of observable variables. The tests for the interaction terms are statistically significant in both types of regressions, suggesting that the productivity of school resources is not the same across school types. What emerges is, therefore, not a simple picture.

Does governance matter?

The Government of India, through the 73rd Amendment and the SSA has created institutional instruments for monitoring school performance. The VECs, for example, are meant to monitor absenteeism, teacher selection, quality of classrooms, sanitation, mid-day meals, among others. In addition the Gram Sabhas are expected to discuss and address issues relevant to schools. Do any these endeavors have any effect?

We find that discussions on school related issues in Gram Sabha meetings do enhance school performance of all school types almost equally. The VECs are specifically empowered to deal with such issues. Much of the VEC is comprised of the community members and they have a sole representative from the panchayat. The participation of the child's mother in the VEC improves the child's performance to a greater extent than do discussions on school related issues in the Gram Sabhas.

Do individual and household characteristics matter?

We first focus on individual and then on household characteristics. We find that girls across all specifications are better by 3 to 4 percent than boys in terms of literacy. An increase in the child's age by one year, on an average, increases the child's probability of being literate by 6 percent across all school types and specifications.

Of particular interest is the impact of z-scores on the performance of the children. The z-

score measures the impact of past and long-term nutritional deficiencies.[12] These can be improved by introducing better nutrition programs in the Anganwadis during early childhood. While we have seen that mid-day meal schemes act as an incentive for parents to send their children to school, we have not included this variable here and are not able to say whether this too improves school performance. Mothers' years of schooling improve literacy by a little over one percent per year of her schooling, more so in private schools. A 10 percent increase in inherited wealth increases school performance by around one-tenth of a percent across all specifications, irrespective of the school type.

Does Infrastructure matter?

Much of public debate and literature suggest that a way of improving performance and bridging the learning gaps between school types can be attained through providing improved infrastructure. These include teacher attendance, student-teacher ratio, availability of separate classrooms and quality of seating arrangements, density of blackboards, sanitation, drinking water availability and playgrounds. The results show that reducing absenteeism, improving the student-teacher ratio, improving the seating arrangements, and increasing the density of the blackboards will improve student performance across all school types (good seating arrangements and blackboards have an impact on performance, of around 15 percent and between 20 to 40 percent respectively). One can conclude from this that a policy that focuses on increased spending on infrastructure matters.

Table 11: Determinants of student performance across school types

VARIABLES	Private and Public School		Panchayat and Public School	
	(1) Model-(1)	(2) Model-(2)	(3) Model-(3)	(4) Model-(4)
Gender	0.032*	0.031*	0.039**	0.040**
	(0.016)	(0.016)	(0.018)	(0.018)
Age	0.061***	0.062***	0.063***	0.063***
	(0.003)	(0.003)	(0.003)	(0.003)
z-score for height for age	0.014***	0.015***	0.014***	0.017***
	(0.0011)	(0.0012)	(0.0012)	(0.0012)
z-score for height for age*School Type		-0.003		-0.216*
		(0.024)		(0.125)
Mother's years of schooling	0.013***	0.011***	0.012***	0.011***
	(0.002)	(0.002)	(0.002)	(0.002)
Mother's years of schooling*School Type		0.010*		0.023
		(0.005)		(0.020)
Predicted inherited wealth	0.009**	0.012**	0.012**	0.012**
	(0.004)	(0.005)	(0.005)	(0.005)
Predicted inherited wealth*School Type		-0.014		0.001
		(0.012)		(0.058)
Teacher absenteeism	-0.006**	-0.005*	-0.005*	-0.005*

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[12] An argument that is often put forward is that the children of malnourished mothers or of mothers who have inherited certain nutrition based deficiencies from their parents will be learning disabled. This will then render programs such as the noon meal schemes in schools less than effective. We control for this by predicting the long -terms z-scores using the parental characteristics of the mother of the child.

	(0.003)	(0.003)	(0.003)	(0.003)
Teacher absenteeism*School Type		-0.006		0.085
		(0.009)		(0.075)
Student teacher ratio	-0.008***	-0.008***	-0.009***	-0.008***
	(0.001)	(0.001)	(0.001)	(0.001)
Student teacher ratio *School Type		0.004		-0.036*
		(0.003)		(0.022)
Availability of separate classrooms	-0.005	-0.030	-0.029	-0.031
	(0.027)	(0.029)	(0.029)	(0.029)
Separate classrooms*School Types		0.191***		0.091
		(0.074)		(0.329)
Seating arrangement (Bad=1, Good=0)	-0.151***	-0.157***	-0.154***	-0.157***
	(0.019)	(0.020)	(0.020)	(0.020)
Seating arrangement*School Type		0.042		0.285
		(0.053)		(0.283)
Availability of blackboard	0.297***	0.406***	0.403***	0.400***
	(0.082)	(0.076)	(0.073)	(0.073)
Blackboard*School Types		-0.687***		-0.618***
		(0.103)		(0.018)
Functional toilets in schools	0.133***	0.113***	0.112***	0.113***
	(0.022)	(0.024)	(0.023)	(0.024)
Functional toilets in schools *School Types		0.101*		0.321*
		(0.061)		(0.190)
Playground	0.026	0.049*	0.054*	0.049*
	(0.027)	(0.029)	(0.029)	(0.029)
Playground*School Types		-0.183*		0.574***
		(0.102)		(0.009)
Drinking water facility	0.204***	0.213***	0.184***	0.212***
	(0.060)	(0.063)	(0.061)	(0.062)
Drinking water facility*School Types		-0.114		-0.634***
		(0.229)		(0.009)
Predicted issue discussed in Gram Sabha (school)	0.047***	0.048***	0.048***	0.049***
	(0.008)	(0.008)	(0.008)	(0.008)
Predicted issue discussed in Gram Sabha (school)*School Types		-0.004		0.009
		(0.024)		(0.083)
Predicted Mother's Participation in VEC	0.064***	0.082***	0.081***	0.083***
	(0.010)	(0.011)	(0.011)	(0.011)
Predicted mother's participation in VEC*School Types		0.087***		0.015
		(0.029)		(0.113)
Predicted probability of attending Private school in first two regressions, Panchayat school in second two regressions	0.30***	0.519***	-0.110*	-0.070***
	(0.022)	(0.125)	(0.059)	(0.001)
Test for interaction (Joint)				
F (Chi2)		36.51		83.76
LR chi2	1644.95	1684.26	1484.70	1512.36
Pseudo R2	0.2510	0.2570	0.2622	0.2671
Observations	4,773	4,773	4,109	4,109

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

5.2.2 Panchayats and Water Management

In this section we examine the ability of the panchayats to enhance the economic welfare of vulnerable groups like women through improved service provision and quality of governance. For example, if the time spent in fetching water by women is reduced, then what are the outcomes? In particular we wish to see if political reservation will enable women to bargain for higher wages? Are problems related to service provision – in particular for water – effectively resolved? Can women translate the gains from improved service provision into productive outcomes? That is, are women able to use the time saved in fetching water for productive activities?

Do the poor have inadequate access to water?

Table 12 illustrates the socio-economic divergence by income classes in accessing water by rural households. Economically weaker sections, in general, have poorer access in terms of average time spent per day in fetching water, spending on an average 78 minutes per day while it is only 47 minutes per day for the affluent households. In the poor households, men spend as much time fetching water as do women, but in more affluent households, women spend more than twice as much time as men.

Table 12: Access to water by income class

	Average Time Spent (Minutes)		
Poverty Status	Whole Sample	Male	Female
Ultra poor	78	76	85
Poor	72	70	77
Non-poor	61	40	58
Affluent	47	22	49

Does location matter?

It has been suggested (Kochar et al. 2007) that if societies are segregated, then the provision of public goods can also reflect such segregation. Along these lines Munshi and Rosenzweig (2008) argue that parochial considerations could drive the provision of public goods and services. Therefore, can location explain the variations in outcomes in terms of access to water? In Indian villages, the choice of residence is not really endogenous to households, but residential location is historically determined by factors related to occupation and *Jati*. Following Munshi and Rosenzweig, streets where certain *Jati*s reside could be discriminated against (or favored) in terms of locating a public good such as water. Therefore, street location of residence should explain much of the variance in access. Table 13 shows that the share of the variance in access to water as explained by location is significant.[13] For example, streets explain 16 percent of the variation in the number of trips made by members of the households to fetch water and 10 percent of the variance in time spent in fetching water. However, when the number of trips or the time spent increases, up to 96 percent of the variance is explained by location. These results suggest that the distribution of water resources within villages is significantly discriminatory.

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[13] We regress the time spent (number of trips made) on location dummies.

Table 13: The proportion of variation in variables reflecting access to water explained by the street of residence

Variables	Number of Daily Trips	Time Spent in Fetching Water	Time Spent in Fetching Water (>60 minutes)	Number of Trips (10-15)	Number of Trips (>15)
R Square	0.16	0.1	0.47	0.65	0.96

Panchayats and participatory governance

Can effective governance produce favorable outcomes related to water? With improved governance, members of households are able to participate in the decision-making process on budgeting and allocations relevant to the provision of public goods and services. The ARIS/REDS surveys show that political reservation empowers women and enables them to participate effectively, for example, in Gram Sabha meetings. The quality of such participation is better in villages that are reserved to either caste or women. The incidence of women protesting and raising questions during Gram Sabha meetings is higher in reserved villages. The decline in the number of passive participants and silent observers of the proceedings in the Gram Sabha meetings is significant. It has come down from 38 percent to 12 percent. We also note (Table 14) that 21 percent of the female respondents who participated in the Gram Sabha meetings in villages that had reservations at least once during the past 15 years, reported being able to protest against the current form of governance. This figure is up from 12 percent in villages that never had reservations.

If women participate in the process of governance, will they then be willing to contribute to village development? The survey asked both male and female respondents of households about their willingness to contribute to local developmental efforts. Each respondent was asked whether they will be willing to contribute Rs 100 per month towards the development of any specific issue; water, roads, health, electricity, sanitation, law and order, and education being the choices. We found that both men and women were willing to contribute towards all public goods but in all cases women were slightly more willing than men. Among amenities, willingness to contribute towards improved provision of water is the highest for both men and women (Table 16). When reservations are broader, i.e. for either scheduled castes or scheduled tribes, both men and women are more willing to contribute to most of the services. When the reservations are specifically for women, the willingness of men to contribute is lower (except in the case of water), while that of the women is generally higher. We note that 33 percent of all women respondents are willing to contribute towards the development of water resources in villages that are reserved for women, while the percentage for men is 29, up by two percent from when the village is unreserved.

Table 14: Political participation and willingness to contribute towards local development

Gram Sabha Meetings	Reserved (SC/ST/Women)				Reserved (Women Only)			
	Male		Female		Male		Female	
	R	*U*	*R*	*U*	*R*	*U*	*R*	*U*

Number of meetings attended		6.18	5.73	7.01	6.89	5.52	6.25	7.76	3.26
Nature of participation									
Presented issues		0.23	0.21	0.24	0.16	0.18	0.22	0.27	0.22
Raised questions		0.15	0.14	0.18	0.13	0.14	0.16	0.17	0.12
	Discussed	0.15	0.14	0.23	0.2	0.12	0.18	0.25	0.16
	Protested	0.20	0.19	0.24	0.17	0.18	0.23	0.21	0.12
	Observed Only	0.32	0.31	0.15	0.34	0.36	0.21	0.12	0.38
Households' Willingness to Contribute to									
Health		0.15	0.19	0.23	0.2	0.14	0.19	0.25	0.2
Education		0.18	0.12	0.17	0.18	0.15	0.19	0.22	0.21
Roads and transport		0.20	0.19	0.22	0.21	0.18	0.2	0.26	0.18
Drinking water		0.31	0.29	0.32	0.25	0.29	0.27	0.33	0.24
Electrification		0.23	0.17	0.22	0.23	0.21	0.2	0.25	0.22

R-Reserved, U-Unreserved

Supply demand dichotomy in the provision of water

Table 15 illustrates the dichotomy between the households' preferred pattern of expenditures and the actual expenditures. As part of the 73rd Amendment, expenditures incurred must be based on a village plan that will take into account the households' preferences. We find that there is a significant difference between the expected shares of expenditures for water and the actual share, indicating difficulties in the disbursement of the allocated resources as well as a mismatch between the allocations and preferences, which undoubtedly leads to inefficiencies in resource use. This is not surprising, since in India the fund flow follows a silo structure where much of the decisions regarding allocations (both magnitudes and the choice of public goods and programs) as well as contracting and disbursements are made outside the village at higher levels of the bureaucracy. Table 15 illustrates two outcomes. First, the dichotomy is persistent across panchayat types (i.e. whether the panchayat is currently reserved or has never been reserved or has been reserved at least once in the past 15 years). The differences in allocations for water between panchayats currently reserved and those reserved at least once (ever reserved) are small. Second, and consistent with Deininger et al. (2011), we also find that political reservations have a legacy effect: if there is improved government allocations during the period in which reservations were in place, then, even after the reservations lapsed, such improved allocations remain in force. The allocations in villages that have been reserved at least once are the highest (22 percent). Since these villages are not reserved now and the allocations remain high it is evidence of supporting legacy (long run) effects of reservations.

Table 15: Expected versus actual expenditure shares for water by reservation status (for women)

Status of Reservation	Expected Expenditure Shares		Actual Expenditure Shares	
	Mean	Standard Deviation	Mean	Standard Deviations

Reserved in current period	0.32	0.18	0.2	0.12
Ever reserved	0.34	0.15	0.22	0.1
No reservations	0.25	0.14	0.16	0.08

Do panchayats help in mobilizing women?

The survey also finds that both women and men prefer increased commitment in terms of monetary resources to improving water, relative to all other public services and goods. Each respondent was asked separately: "The government will give Rs 100,000 (approximately $ 2000) towards the development of one public good but only if the majority vote in favor. If you had the tie-breaking vote, which public good will you choose?" The findings in Table 16 show that in currently reserved panchayats 33 percent of female and 32 percent of male respondents reported that they would cast their tie-breaking vote in favor of water, while for all other public goods combined these percentages are only 67 and 68, respectively. These percentages are only slightly different in villages that were reserved at least once.

Table 16: Tie-breaking vote on water and other public goods

Status of Reservation	Male/Female	Drinking Water		Other Public Goods	
		Mean	Standard Deviation	Mean	Standard Deviation
Currently reserved	Male	0.32	0.46	0.68	0.46
	Female	0.33	0.47	0.67	0.47
At least once reserved	Male	0.3	0.46	0.7	0.46
	Female	0.32	0.47	0.68	0.47
Not reserved	Male	0.24	0.43	0.76	0.43
	Female	0.23	0.43	0.77	0.43

Improved availability of water and time allocations

The findings reported in Table 17 show that both current as well as past reservations reduce the time spent by both females and males in fetching water, although the effects are not statistically significant for females in currently reserved panchayats and for males in earlier reserved panchayats. In currently reserved panchayats women have been able to increase their time spent in their own crops, own livestock, other productive work, and non-farm self-employment activities, while males were able to increase their time allocated to own livestock, non-farm employment, non-farm self-employment and other productive works. Both genders reduced their agricultural wage labor slightly. However, for past reservations the reallocations are not the same for both genders.

Table 17: Impact of current and past reservations on current time allocations

	Female Respondents	Male Respondents
Items of Work	Currently Reserved	Currently Reserved

	No	Yes		No	Yes	
Number of days spent						
Housework	61.05	60.61		15.1	14.82	*
Fetching water	48.11	45.47	**	21.52	20.37	
Other productive work	19.31	20.67	***	49.49	52.14	***
Agricultural wage labor	4.582	4.189	**	9.64	9.155	**
Non-agricultural wage labor	0.78	0.694		10.26	12.091	***
Own crops	4.032	4.336	**	12.37	12.09	
Own livestock	8.672	9.796	***	8.959	9.897	***
Self-employment	0.761	1.213	***	7.35	7.578	
No. of Observations	29,212	13,105		29,301	13,665	

Items of Work	Female Respondents Reserved in Past			Male Respondents Reserved in Past		
	No	Yes		No	Yes	
Number of days spent						
Housework	61.43	60.32	***	15.1	14.91	
Fetching water	51.18	51.02	*	22.51	21.64	
Other productive work	20.1	19.29	***	49.81	50.96	**
Agricultural wage labor	4.805	4.056	***	9.761	9.16	**
Non-agricultural wage labor	0.532	1.013	***	10.37	11.4	***
Own crops	4.442	3.755	***	12.76	11.71	***
Own livestock	9.053	8.981		9.001	9.56	***
Self-employment	0.752	1.075	***	6.666	8.318	***
No. of Observations	22,844	19,473		23,285	19,681	

*, **, and *** denote significances at 10%, 5% and 1% levels respectively

Political reservations, labor market outcomes and quality of governance

Do political reservations lead to improved quality of governance and empowerment of women? The literature identified three channels through which reservations could affect long-term outcomes beyond the immediately reserved period. First, they might prompt those who previously had not participated in the political process to change their behavior permanently. Evidence for persistent effects through greater participation along these lines is available from rural West Bengal (Beaman et al. 2010), South India (Besley et al. 2005) as well as urban Mumbai (Bhavnani 2009). This is plausible as previously ignorant voters might require time to learn how to access and use information most effectively to hold leaders accountable. Second, reservations may trigger a process of learning and revision of prejudices as in cases where exposure to female leaders led to the revision of stereotypes with regard to women's leadership qualities (Beaman et al. 2009). A third option less documented in the literature is that, if it increases voice or shifts the composition of public goods in a way that benefits certain groups, reservation may lead to increased contributions to public goods.

The regression results shown in Table 18 suggest that political reservations reduce the time spent by women in fetching water. The impact is greater if the reservation is for women than for a scheduled caste or scheduled tribe and is persistent regardless of the basis of reservation. We also find that both the initial level of public expenditures on water, as well as its growth over time, reduces the time spent by women in fetching water. In reserved panchayats, the magnitude of water-related problems faced by women is greater than in unreserved panchayats. However, the interaction terms with females suggest that when the reservations are specifically for women, water problems are reduced. Besides, all forms of reservations increase the complaints raised about water. Clearly, reservations improve governance in general, especially the political agency of women.

Table 18: OLS specification of time spent in collecting water, problems related to water access, complaints to elected representatives, and non-agricultural wage rates

Variables	Ln(Time to Collect Water)	Problems[a]	Complaints raised[b]	Ln(Nonagricultural female wage rate)
Reserved (γ)	−0.179***	0.329***	0.395***	0.232***
	(0.017)	(0.028)	(0.02)	(0.072)
Reserved*female(λ)	−0.398***	−0.141***	0.323***	0.240**
	(0.02)	(0.024)	(0.023)	(0.103)
ReservedLag1($\gamma 1$)	−0.228***	0.138***	0.229***	0.107***
	(0.017)	(0.02)	(0.019)	(0.026)
ReservedLag1*female($\lambda 1$)	−0.361***	−0.0239	0.100***	0.066***
	(0.022)	(0.026)	(0.025)	(0.015)
Growth in water exp †	−0.0209***	−0.0123***	0.011***	
	(0.001)	(0.001)	(0.001)	
Initial distict water exp ††	−0.0475***	0.0106***	0.0151***	
	(0.008)	(0.001)	(0.001)	
Constant	2.607***	1.544***	1.749***	13.20***
	(0.021)	(0.031)	(0.031)	(0.106)
$\gamma + \lambda = 0$	336.71***	83.29***	13.15***	24.98***
$\gamma 1 + \lambda 1 = 0$	60.65***	31.82***	43.51***	21.65***
F-test	172.02***	250.80***	199.27***	81.28***
Observations	44718	44718	44718	44718

Notes:
*, **, and *** denote significances at 10%, 5% and 1% levels respectively. District fixed effects, household and individual characteristics (age, sex, education, marital status, caste, and household size) included in the regression.
† Logged growth in the district-level water expenditure between 2002–03 and 2005–06.
†† Log of water expenditures in the initial (1999) panchayat period
a, b binary variables

Empowerment of women through political agency could also lead to better bargaining power in the labor markets and/or to less discrimination against women. Both would result in increases in their wage rates. We find that off-farm wage rates for women in panchayats currently reserved are 24 percent more than in panchayats where there is no such reservation. However, this difference is much smaller for women in previously reserved panchayats. We have already seen that women in these villages have reduced their time

spent in fetching water, making more time for productive work that could increase household welfare. How much of this is due to empowerment through reservation versus other forms of empowerment is shown in Table 19.

Table 19: Household Work and labor participation (First Stage Results)

Variables	Ln (Household labor days)	Ln(Other days)	Ln(Self-employment and own cult days)	Ln(Non-agricultural labor days
Reserved	−0.405***	−0.238***	0.302**	0.223***
	(0.114)	(0.0499)	(0.05)	(0.0736)
Reserved*female	−0.773***	−0.204***	0.153**	−0.175
	(0.066)	(0.0725)	(0.0726)	(0.107)
ReservedLag1	−0.161***	−0.181***	0.222***	−0.1979***
	(0.033)	(0.0449)	(0.045)	(0.0463)
ReservedLag1*female	−0.541***	−0.131***	(0.0527**	0.1494**
	(0.149)	(0.045)	(0.0251)	(0.0359)
Predicted time to collect water*female	0.207***	−0.0497***	−0.833***	−0.0808***
	(0.0229)	(0.0062)	(0.0262)	(0.0133)
Predicted non-agricultural wage*female	−0.154***	0.0730***	0.298***	0.151***
	(0.0172)	(0.00751)	(0.00752)	(0.0111)
Inherited land by women	−0.1419***	−0.0591*	0.382***	−0.552***
	(0.03)	(0.0349)	(0.035)	(0.0515)
Inherited wealth*female	−0.189***	−0.0721***	0.0740***	0.0535**
	(0.016)	(0.0207)	(0.0207)	(0.0247)
Village shocks	0.0734***	−0.0397***	−0.0609***	−0.101***
	(0.0191)	(0.00835)	(0.00837)	(0.0123)
Constant	−5.469***	−14.79***	2.654***	−12.85***
	(0.121)	(0.053)	(0.0531)	(0.0781)
Test for excluded instruments	1073.33***	67.65***	603.57***	331.77***
Anderson Canonical LM Test			102.43***	
Cragg–Donald Wald F-Test			21.54***	
Observations	44718	44718	44718	44718

Notes:
Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Political reservations lead to reductions in household work for both genders but more so for women. This can be attributed to improved productivity in household work for all members due to reduction in the time spent in accessing water. This enhances the ability of all members in general and women members in particular to participate in activities outside their household. For women, every hour spent on fetching water increases the time spent in household work by 0.2 hours, which means that there is a concomitant decrease in the

hours for other housework. Therefore, getting better water supply frees up time for the other productive activities, with most of the gains going into self-employment activities. An increase in the non-farm wage also reduces women's time in household work with an elasticity of 0.15 and increases other labor employment by only 7.3 percent while non-agricultural employment goes up by 15.1 percent and self-employment by 29.8 percent compared to males.

A woman's own land inheritance sharply reduces non-farm labor days and to a lesser extent, the days spent in doing household work. At the same time it increases time for self-employment activities. Inheritance of wealth by the family as a whole reduces household work and leads to a reallocation of the hours to non-farm and farm work. Inheritance provides avenues for households in general and, women in particular to save on household labor time. Hiring of household help is one such mechanism.

Our data shows that there is a small but significant correlation between wealth, inheritance and hiring of household help in the form of servants. While we find a significant correlation between land inheritance by women and hired labor for household work, the magnitudes are small.[14]

If participation in labor markets is still discriminatory then an important avenue for employment for women is their own lands or self-employment. Elsewhere, Deininger et al. (2012) have shown that access to land and micro credit are important determinants of reducing the barriers to participation in labor markets and wage gaps among genders. We know that improved governance and participation in the political process by women affects the provision of drinking water, which could significantly influence intra-household time allocations.

Economic impacts

Given the elasticities with respect to time allocations reported in the second stage results (Table 20), a 20.7 percent increase in household labor days due to increase in time spent in fetching water by women will lead to 19.68 percent decline in real incomes for women (other things remaining constant). Political agency also affects the off-farm wage rates for women. If off-farm wage rates go up by 1 percent the decline in the time spent in household work for women is 15.4 percent. The impact of increase in off-farm wage rates on real income for women is 16.14 percent. The elasticity of self-employment time on the farm or in the non-farm sector on a family is the highest at 0.37. However, returns from off-farm employment or other labor are not far behind; their elasticities are 0.29 and 0.26, respectively. Household work marginally reduces real incomes and has an elasticity of 0.03.

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[14] Correlation between inherited land, wealth and hiring of servants/permanent laborers

Wealth (Rs)	Correlations between servants hired and wealth
<60K	0.0206
60K–100K	0.0220
100K–500K	0.0298*
>500K	0.2557***
Land inheritance by women	**0.162*****

Table 20: Impact of participation in gainful employment on income (Second Stage)

Variables	Ln(Real income-member level)
Ln(Other labour days)	0.260***
	(0.031)
Ln(Self-employment and own cultivation)	0.371***
	(0.006)
Ln(non-agricultural wage labor)	0.292***
	(0.017)
Ln(household work)	−0.0284***
	(0.004)
Constant	14.03***
	(0.894)
Sargan Test	32.514***
Wu-Hausman Test	329.47***
Durbin-Wu-Hausman Test	1086.54***
Observations	44718

6. Conclusions

Status of decentralization in India

Decentralization of governance in India has been poorly implemented with wide variations across states. A significant stumbling block is the insufficient devolution of Functions, Funds and Functionaries (the three Fs). Additional weaknesses come from the proliferation and fragmented implementation of central and state-government sponsored programmes, the related funding streams, continued decision-making authority at the level of the state government and sometimes even at the national level, limited progress in bottom-up planning, and poor accountability of sectoral officers and local government functionaries to their populations.

Nevertheless, some of the existing literature suggests that since the passage of the 73rd Amendment of the Constitution empowering the panchayats, there has been a slow but steady improvement in the empowerment of citizens in general, as well marginalized groups such as scheduled castes and scheduled tribes (SC/ST) and women. Progress has, of course, varied across the state governments and even across these groups. Some of this progress can be attributed to political agency of women due to political reservations.

Finding that the progress has been below expectations, a number of recommendations have been made by various commissions set up by the government of India. The

recommendations include amendments to the constitution, strengthening of the existing laws, promoting fiscal independence, setting up of and strengthening the administrative regulations and procedures, implementing planning and accountability systems, and fine-tuning the central government and state level programs. The Central Government has accepted 95 percent of these recommendations, but only about 10 percent have been implemented.

There seems to be a lack of political will to move forward on decentralization. Even though there are recommendations that induce or force the states to decentralize more, these lack credibility in the face of the central government continuing to create parallel bodies and not devolving funds and powers. The other possible reason for lack of political will is that, other than the commissions and the Ministries of PRI, many policymakers and scholars are not convinced that further empowerment of local governments would improve services. They also believe that decision-making in panchayats may not truly reflect the will of the people, and benefits of decisions taken by local governments may not accrue to all segments of the population. It may instead lead to more, rather than less program capture.

Broad Findings

We are able to show that the impact of panchayats on services is quite complex. We try to understand their effects on the provision of water and management of schools through specific outcomes. What has changed in the villages is that populations have barely grown, but household and farm sizes have gone down. Nevertheless, per capita incomes have increased, especially incomes from non-farm sector employment and self-employment. In addition, the villages have gotten access to more infrastructures and services, and more government programs and subsidies. Wages have increased, more so for women than for men, and the prices of agricultural land have skyrocketed. In terms of governance, Gram Sabhas meet more frequently, more people attend Gram Sabha meetings, and they participate more actively, especially in panchayats that are reserved for women.

One of the main findings of this report is that, despite operating in a very poor system and being poorly staffed and funded, local governments have been able to make significant contributions to the quantity and quality of basic services such as water and education, and are playing a significant role in the identification and resolution of related problems.

Impacts on Service Provision

1. Expenditures by panchayats on water and education, even though generally small, have positive and significant impacts on the quantity and quality of these services. Most importantly they improve the welfare outcomes of families, as measured by higher literacy of their children, and higher earnings resulting from better health or from saving of time spent on fetching water. The mechanisms by which these improvements are achieved include political reservations, Gram Sabha meetings

with specific agenda related to these services, the participation of households in such meetings and the impact of specific institutions such as VECs, VWUSCs, and the Pani Panchayats. We are also able to show a broad range of specific attributes of services on service outcomes, such as school infrastructure, teacher absenteeism, and behavior of the staff, suggesting that improvements are needed on a broad range of service attributes.

2. Private schools provide more accessible and better services than public facilities. They also lead to significantly better outcomes in terms of literacy of children and health and earnings of household members. The gap in student achievements in private schools compared to all other school types can be reduced by upgrading the facilities, teacher quality and through improved governance. But these gaps cannot be eliminated, suggesting that unobservable attributes of private schools add to their performance.

3. Results show that among the services analyzed, both genders

    a. care most about the provision of drinking water, and are most willing to contribute financially to improve water services

    b. women spend more time fetching water compared to men, and for poor men and women the difference is less than in better-off households

    c. both genders, therefore, save time fetching water if its provision is improved

    d. there are no longer any big differences in school enrolment rates of boys and girls

    e. in terms of governance, both genders show a decline over time in passive participation in Gram Sabha meetings.

4. Significant differences by gender include the following:

    a. Reservation of the position of the Pradhan differentially leads to women protesting more about services and raising more questions in Gram Sabha meetings compared to men.

    b. Women are more willing to contribute financially to public services than men.

    c. When accessibility of water is improved, time reductions in fetching water are larger for women than for men. Women reallocate most of the time thus

gained to self-employment on and off the farm, while men reallocate more time to wage employment.

   d. Women are less likely to withdraw children from school, but households with a higher proportion of girls are more likely to withdraw children.

   e. Increases in panchayat expenditures have a much greater impact on women accessing public healthcare than men. Village health expenditures reduce the incidence of illness of women three times more than for men.

Impacts of general governance mechanisms

5. Influencing the distribution of income by way of public expenditures, and the use of Jatis to hold elected leaders accountable are both viewed as second best solutions in imperfect systems that are not able to redistribute income through lumpsum transfer or to hold elected officials accountable through operational political parties[15].

6. We show that there are benefits of reservations of the position of the elected head of the panchayat – the Pradhan – by gender. On average, women Pradhans observe the rules of local governments better than male Pradhans. The reservations are shown to have positive impacts on services generally. There are significant long-term benefits of reservations, as these benefits persist even after the period of reservation has ended. While we cannot, on account of their non-random nature, be as sure about the causal impacts of reservations in favor of SC/ST, these too appear to have similar positive impacts and long-term effects.

7. Reservations of the Pradhan's position for women lead to more complaints about the services, but reservations alone are not able to lead to significant reductions in problems encountered in services, or to the resolution of such problems. However, if women in reserved panchayats also vote based on their Jati identity, the impacts are much greater, leading to statistically significant improvements in problem solving, access to welfare programs and higher income. Thus reservations and identity-based voting may be complementary in empowering women.

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[15] Foster and Rosenzweig (2004) have shown that democratic decision-making in the PRIs improves the allocation of local government resources to expenditures that benefit the poor differentially. Munshi and Rosenzweig (2008) show that sub-castes or *Jatis* are able to help elect their most able members to positions of ward councillors, while at the same time using their Jati networks to hold them accountable for implementing the preferences of the median group member, rather than their own.

8. Other formal and informal mechanisms that are effective in reducing the service gaps across gender and economic classes are: participation in Gram Sabha meetings, discussions on service delivery issues in GS meetings, and the establishment of, and participation in Village Education and Water Users' Committees. The frequency of the use of all these mechanisms in the villages has significantly increased during the study period.

9. Individual empowerment of women through inheritance of land, and their political empowerment through the reservation of the seat of the Pradhan also complement each other, leading to increased use of public and private health facilities, and to the reduction of the incidence of illnesses among women. Empowering women through changes in electoral rules and in inheritance laws, therefore, has also been complementary.

Weaknesses of the rural governance system

On the negative side we have already commented on the very low raising of own revenues by the panchayats. However, when the proportion of these revenues in the overall expenditures goes up, we find greater availability of public services, and greater impact of Gram Sabha meetings on the quantity and quality of public services.

Other problems

10. Large wage gaps remain between the earnings of men and women, and women face important barriers in participating in employment in the non-farm sector (Binswanger et al., 2012). Discrimination, rather than productivity gaps, is a significant factor in explaining the wage gaps between men and women. But in the case of wage differences by caste, the main explanatory factors are differences in endowments of land and, to a lesser extent, of human capital. We show, in different papers, that women's wages go up as a consequence of political and individual empowerment, thereby helping reduce wage discrimination.

11. Even though revenue collection in the form of taxes by panchayats is limited, we show that people's willingness to contribute is positively related to the quality of services. We also show that where panchayats have engaged in revenue collection, the availability (and quality) of public goods has improved.

Appendix

Table 1: Status of devolution across states (figures represent % devolved)

Sr. No	States	Framework	Functions	Finances	Functionaries	PDI
1	Kerala	85.50	62.43	63.01	53.94	63.07
2	Karnataka	92.50	65.65	59.38	47.24	62.15
3	Maharashtra	75.63	65.43	59.89	42.96	59.74
4	Madhya Pradesh	80.63	64.50	57.73	44.65	59.43
5	Rajasthan	89.50	62.36	54.65	41.89	57.90
6	Tamil Nadu	82.50	58.58	55.59	44.18	56.90
7	West Bengal	85.50	53.93	54.96	42.75	55.27
8	Chhattisgarh	73.13	49.51	51.15	35.33	49.69
9	Gujarat	46.88	55.52	47.09	42.31	48.64
10	Haryana	88.13	53.04	38.63	35.74	47.32
11	Himachal Pradesh	73.63	41.11	36.53	35.44	41.39
12	Odisha	80.63	39.85	29.03	28.26	37.28
13	Uttarakhand	53.63	49.35	24.90	33.25	36.78
14	Uttar Pradesh	71.13	47.29	28.15	16.39	35.84
15	Goa	68.63	35.15	31.36	18.05	33.56
16	Bihar	82.50	43.00	23.79	10.21	32.71
17	Punjab	73.63	46.42	6.16	17.34	27.22
18	Jharkhand	51.25	15.20	5.39	18.53	15.55
North-Eastern States						
19	Sikkim	85.00	54.60	52.26	31.00	51.98
20	Arunachal Pradesh	68.63	24.22	10.94	14.01	21.31
Union Territories						
21	Andaman and Nicobar Islands	95.00	32.32	18.23	13.30	29.15

22	Daman and Diu	77.50	31.35	16.55	13.08	26.39
23	Chandigarh	30.00	24.38	7.93	7.13	14.91
	National Average	74.39	46.75	36.23	29.83	41.92

Table 2: Determinants of at least one child per household not attending school

VARIABLES	At least one child not enrolled
Female headed household	-0.0791***
	(0.0222)
Father's age (Years)	0.0133**
	(0.00641)
Father's schooling and college	-0.0717***
	(0.0201)
Share of girl children in household	0.526***
	(0.0547)
Predicted inherited wealth	-0.342***
	(0.0855)
Z-score for height for age	-0.348*
	(0.182)
Provision of mid-day meals in schools	-0.0790***
	(0.0190)
SC	0.0615***
	(0.00661)
ST	0.185***
	(0.0299)
OBC	0.0517**
	(0.0241)
Whether private school is the only school available	-0.401***
	(0.0404)
Total number of schools with electricity	-0.0719
	(0.0705)
Total number of class room in the schools	-0.0160
	(0.00975)
Number of blackboards in schools	-0.00185
	(0.00943)
Share of adequately trained teachers	-0.0363***
	(0.00232)
Student-teacher ratio	0.186***
	(0.00184)
Share of female teachers in schools	-0.219***
	(0.0242)
Non-farm wage rate	0.0811***
	(0.0202)
Village fixed effect	Yes
Wald Chi2	438.34***
Observations	5,858

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

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