Bribery, Democracy and their impact on Governance and Welfare: The Case of Rural India

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Abstract

Participation in welfare programs, administered by local government (Panchayats) is a significant source of consumption expenditure for households in rural India. In the context of imperfect local governance, we hypothesize that access to such programs may be limited, thus creating incentives for households to bribe in order to gain access. Using a 10-year panel dataset, we jointly estimate determinants of bribes, participation in welfare programs, and consequent change in economic welfare of households. We show that bribing does improve program participation and thence private consumption. Factors such as deepening democracy and increased fiscal buoyancy improve the quality of governance and increase the rate of participation in welfare programs and reduce the incidence of bribes.

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1. Introduction

Apart from their own private consumption, households derive utility from public goods and public services. Indeed, the disutility resulting from paucity of public goods and services, such as roads, education, health centers and the like, could be very significant and, in some cases, even overwhelm the utility from private consumption.

By their very nature, public goods and services are collectively provided and, in the particular context of rural India, are quite scarce. Furthermore the governance structure of public goods provision is quite poor, especially in the rural sector. This has contributed to less than satisfactory human development outcomes and prompted the Indian Parliament to pass the 73rd and 74th amendments to the Constitution of India in 1992 requiring local self-governance and decentralization. The implicit assumption behind this policy reform was that increased decentralization and self-governance would lead to improved decision making, augment and make more equitable the provision of public goods.

Access to several public services is crowdable whence households compete to avail of them. Since price does not act as a rationing mechanism, households, when faced with inadequate governance structures for public good provision, have an incentive to bribe officials with control over the supply of these public goods in order to get preferential access.

Nagarajan et al. (2014) show that over the past two decades, rural households in India paid more in bribes per capita than in local taxes. Bribes were paid for a variety of reasons including to gain access to welfare programs, contracts and jobs, circumvent red tape, avoid expected malpractices, and resolve grievances relating to provision of services such as water, education, and health care. They show that while a few bribes are paid directly to the elected officials; most

are paid to village and panchayat level functionaries with perceived links to elected

representatives-suggesting the existence of a bribe network.

The payment of bribes, apart from being an indicator of the inefficiency of the allocative

mechanism for public goods, is also highly regressive since the poor typically pay a higher

proportion of their incomes as bribes as compared to the non-poor. We also show that while

bribery facilitates program participation the payoff to households in terms of increased

consumption is small, though significant. Thus, it becomes necessary to inquire what can be

done to reduce the incidence of bribes while still maintaining consumption levels. This is the

core policy question we address in this paper.

Using a stylized model of household utility maximization we show that not bribing can lead to

low household consumption. From this we conclude that bribing, program participation and

consumption are interdependent decisions and need to be modeled as such. Using these

estimates the paper identifies the following policy levers that can ameliorate the need to bribe: (i)

deepening democracy through increased participation in Gram Sabha (GS) meetings,[1] (ii)

improving the quality of the leadership to reduce agency costs, (iii) devolving of financial

administrative powers to augment autonomy of local governments over expenditures, selection

of beneficiaries and execution of projects, (iv) making local officials more accountable by

empowering them to raise revenue, (v) enhancing female empowerment by reserving the position

of village Pradhan for women, and (vi) according greater autonomy to Panchayats over the use

of grants for welfare programs.

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[1] Democratization in rural India manifests itself in the form of participation in the process of governance via village councils, or GS, where decisions taken by the Panchayats are debated, discussed, and reviewed by all citizens. Grievance redressal and providing information about services (and welfare programs) are some of the key benefits from attending GS meetings. It is a testable hypothesis, therefore, whether attendance in such GS meetings reduces the incidence of bribes.

The plan of the paper is as follows. We first discuss literature germane to this problem. We then provide a descriptive analysis of the data. Subsequently we outline the stylized model used in this paper and the empirical strategy, followed by the results. The final section concludes and discusses policy implications.

2. Literature

While there is extensive literature studying corruption in the context of decentralization, there is less understanding of the implications of bribing for households. This is mainly because of the absence of data on corruption and related variables at the household level. [2]

There is, however, a vast literature on bribes in the context of decentralized democracy. A brief overview of this literature follows. Rose-Ackerman, (1975; 1978) showed that such corruption is related to the size and structure of government with bribes primarily paid to gain access to government benefits. Aidt (2003) and Huther and Shah (2000) utilize indices such as those of Transparency International to understand corruption's impact on development. Fisman and Gatti (2002) report that increased sub national share of public expenditure and revenue is associated with lower levels of perceived corruption and bribery which indicates support for the argument that local governments that raise revenues are more accountable towards citizens, a hypothesis we test. Treisman (2000) found that decentralization was associated with greater levels of perceived corruption although Treisman (2007) concluded that neither the positive federalism effect nor the negative decentralization effect was robust. Dollar *et al.* (2001) conclude that having a female elected representative lowers the incidence of bribery. Beaman (2010) found

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[2]. In the Indian context over the last few decades several studies have promoted empowerment of local governments, improved accountability and reforms to the fiscal systems and Centrally Sponsored Schemes, improvements in bottom-up planning, and, accountability systems of the Panchayati Raj institutions (PRIs) and sector staff. Combating corruption is a central theme of this literature.

evidence showing lower incidence of bribes[3] in Panchayats with political reservations for women.

Mookherjee and Png (1995) show that bribing is an effective, albeit inefficient, method of mentoring whence bribing could curtail evasion of designated work by corruptible officials or facilitate access to welfare programs and public services. Niehaus and Sukhtankar (2013) report two effects of bribe payment: a static price effect which states that agents tend to over-report participation if they get more money for every day of wage work they report; and a 'golden goose effect' which incentivizes agents to extract less rents today in order to preserve future illicit rents. Honest behavior could be encouraged by raising public sector wages and increasing accountability. Some have argued that bribing increases welfare by greasing the wheels of commerce and overcoming government induced rigidities. Others have hypothesized that bribe payments and corruption can supplement low wages and keep taxation low when public sector wages are low (Tullock, 1996). Elliot (1997), Mankiw (2000) and Brunetti and Weder (1994), argue that bribes accelerate development and increase market efficiency. However, Mauro (1995) and Tanzi and Davoodi (1997) advanced counter-arguments stating large economic costs like GDP loss and reduced growth rates as outcomes of corruption.

Reforms to reduce bribes have involved increasing transparency and accountability.[4] These have been found to be most effective as have been efforts to reduce information asymmetry regarding governmental procedures if aided by transparent technology (Banerjee *et al.*, 2010). Bribery needs to be kept hidden (Olken, 2007) whence increased monitoring and punishments could

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[3] Our paper is not restricted to whether bribes were paid or not, but also how much was paid as bribe. The impact of political reservations for women on magnitude of bribe payment has not yet been studied in the literature. See also Tanzi (1998).

[4] Various committees set up to examine and review Panchayati Raj in India have recommended several measures including the advice of the 2nd Administrative Reforms Committee to set up a local ombudsman for a group of districts to address complaints of corruption/maladministration.

lower bribery and corruption. Market forces have proven to play a significant role in bribes; competition among bureaucrats and other rent-seekers reduces bribery. Alternatively, more corrupt bureaucrats lead to several transactions involving bribes instead of one (Olken and Barron, 2009; Bruhn, 2008). We assess this argument using a bribe concentration index that measures the incidence of corruption across bureaucratic layers.[5]

Thus any one strand of this literature does not cover all issues considered in this paper. We provide a comprehensive explanation of the effects of reforming the quality of local institutions through decentralization and follow-on impacts on household consumption. Decentralization includes deepening democracy, providing autonomy, empowerment and capacity building of elected Pradhans through political agency and fiscal autonomy.

3. Data and Descriptive Analysis

A key strength of this paper that it uses data on bribes at the level of the household. To the best of our knowledge this is the only paper to do so for India. Our data comes from the Rural Economic and Demography Surveys (REDS) from NCAER. These surveys began in 1969 and represent a panel of 241 villages representing 17 major states of India. REDS is in three parts. The listing questionnaire is a census of all villages covered and provides detailed information of the primary and secondary occupation of the household head, net income, migration, social and economic networks, whether social discrimination was experienced, voting in elections, and Jati.[6] The village questionnaire provides details on aspects of governance including elections,

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[5] Waller *et al.* (2002) theoretically show that alternative measures of bribery can produce varying implications when examining the links between the various bribe takers in a given governmental set-up.

[6] A Jati is a regional endogamous grouping of families with historically evolved identities. These identities primarily define social relations.

GS[7] meetings, government programs, taxation, expenditures, number of village level shocks,

amongst other variables. Household and member level information related to voting and program

participation is derived from the household survey. The size of the sample in the 1999 and 2006

surveys was 7474 and 8659 households respectively, of which 5885 households were

interviewed in both rounds. We refer to 1999 as period 1 and 2006 as period 2.

REDS contains two types of data on bribes. At the household level, the data includes the

functionary approached (elected or otherwise) by the household for solving a range of problems

germane to both community and the household, number of such functionaries approached,

frequency of these visits, bribes paid and their frequency. We also have data on bribes associated

with specific services e.g. health, receipt of welfare benefits, and beneficiary selection.

Table 1 provides details on the sample size, village, and household characteristics. The average

number of households in these villages was 700 in period 2, up by 12.46% from period 1. Foster

and Rosenzweig (2004), citing the 2001 census, suggest that REDS villages are larger and (in

most cases older) in terms of household population and settlements compared to an average

Indian village.[8]

Table 1 about here.

Household size shrank by nearly 16%. Household heads were marginally better educated in

period 2 and their average age was higher by 3.5 years. The proportion of girl children attending

schools in 2006 was higher by 30%. Poverty decreased by 18.3% the magnitude of the ultra-

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[7] A GS is a meeting, typically of all members of the village and their elected representatives, sanctioned by law to advise the elected Panchayat. Judicial rulings have given the decisions of the GS legal status.

[8] We are not concerned with whether the age and size of the villages could affect outcomes for these relative to other villages not in the sample. Also we work with a random sample drawn in 1969 and repeatedly followed. Hence the sample represents the rural population with all of its diversities.

poor increased significantly over the two survey periods (the ultra-poor represent 3% of all households). The proportion of poor declined by 25.8% while that of the affluent increased by 22%.

There was approximately one adverse village wide shock per year in each Panchayat period and the number of idiosyncratic shocks experienced by households was about the same. Inherited wealth (including land) went up by 26.71%.[9]

Since 2004, the central government has expanded funds available to welfare programs. Consequently, between periods 1 and 2 per capita welfare expenditures (tied resources) grew by 77.5%. During period 2 Panchayat, the average number of centrally sponsored schemes per village stood at 14 (a growth of nearly 15%). Untied funds transferred to the Panchayats and spent grew by 30.36%. However, expenditure on public goods increased by a mere 0.48% and expenditures on agricultural programs declined by 48.6%.

This implies that households had access to significantly larger financial resources but these were not necessarily related to or derived from productive activity. However, such anomalies can have repercussions e.g., if selection and participation in welfare programs are administered in a silo based manner then the local bureaucracy can discriminate. Hence, households could resort to second best strategies such as bribing in order to access these resources.

Elections led to gender based regime changes in Panchayats.[10] In 2006 26% of all villages elected a female Pradhan in place of a male and, 22% of unreserved villages chose a male Pradhan to replace a female. Deininger *et al.* (2012; 2014) have shown that the quality of governance in general, and matters such as beneficiary selection in particular, are better in

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[9] This can be attributed to the strengthening of inheritance laws during the reference period (Deininger *et al.,* 2013).
[10] This applies to only those Panchayats that are not reserved for women under the 73rd Amendment-33% reservations are mandated and the Panchayats are randomly selected for implementing this reform.

villages with women Pradhans. The consequent improvement in governance should ideally

minimize the tendency of households to bribe to participate in welfare programs.

There are other features indicating adverse consequences in terms of program capture and

accountability including significant political interference, and dynastic rule. In Period 2

Panchayat, 19% of all Pradhans belonged to the same family (significantly up from the Period 1).

86% of all Panchayats had Pradhans and ward members received support from political parties or

were sponsored by these parties. Dynastic politics could have an adverse impact on the targeting

of welfare programs. Increased political interference could lead to gerrymandering of

developmental efforts. Dynastic politics and increased political interference could lead to

increased bribing.

Two indicators of quality of governance registered substantial improvement. Number of and

attendance in GS meetings increased sharply, the latter by 16.6%. 88.2% of all members in the

village attended at least 1 meeting during Period 2. We test the hypothesis that deepening

democracy as represented by these measures reduces the need to bribe. Further, if GS meetings

are held along parochial lines then attendance in such meetings will also be parochial whence

those who are not able to form associations along such lines may need to bribe, while those who

are part of a parochial clique gain by merely attending more GS meetings.

On average, households paid Rs. 120 in bribes in Period 1 which increased to Rs 167 in Period 2

(an increase of 39 %). In real terms the 2006 bribe figure was Rs. 123.4– still higher than in

1999). Households[11]bribe to a) resolve problems that might affect public services in the

community; b) improve services to their own household and derive private benefits in terms of

program access; and c) offset expected malpractices. When beneficiary selection and program

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[11] Table 2 reports statistic from the Panel of households. Persistence of bribes can be examined by comparing tables 2 and 4.

management are devolved to Panchayats, these activities would typically be carried out by elected officials, the Panchayat secretary, or, sometimes, the GS. When these functions are not devolved, this would be personnel from sectors that administer the program. Table 2 summarizes reasons for bribing.

Table 2 about here.

The top panel of Table 2 reveals that bribes are being paid to ameliorate almost all problems associated with village level public services. 77.7% of all households in these villages were adversely affected by poor quality of provision of drinking water and irrigation. Out of these, 82% have bribed elected officials of the Panchayats and others connected with water to redress this problem at the village level. Moreover, even though the proportion of households adversely affected declined marginally, the number bribing increased as did the number of functionaries a household had to approach to have problems redressed before paying any bribes. In Period 1 Panchayat this number ranged (for water) between 0 and 12 for an average household; the maximum number of functionaries approached during Period 2 rose to 18. This reveals that a disturbingly significant sections of the village community are adversely affected by poor quality of services and thus have to bribe to resolve problems. Bribes are paid to a range of individuals, e.g., an electrician is bribed to solve a problem related to school, indicating the presence of a bribe network.

The middle and third panels of Table 2 report the incidence of bribing associated with solving private problems and village wide issues. The number of households adversely affected by the quality of public works (such as flood prevention, piling of garbage, sewerage, roads etc.) within the vicinity of their residence was high and growing and 79.5% of all affected households bribed to improve their conditions. The average number of functionaries that a household approached

in Period 2 Panchayat was greater than 2.[12] Households are increasingly approaching multiple

functionaries for solving any problem.

Tables 3 and 4 about here.

Tables 3 and 4 describe specific circumstances surrounding payment of bribes. Across

consumption classes, the number of functionaries to be approached for problem solving by

households rose. Households approached multiple functionaries for various reasons, possibly due

to fragmentation of powers or information asymmetry in the system wherein the household was

not aware of the correct functionary. Whatever the reason, Panchayats as institutions do not

come off well in Table 3. More households bribe for accessing programs, problem resolution,

improving the quality of services, and avoiding malpractices than before. Of particular concern is

the fact that while 29.8% of poor households bribed in Period 1 Panchayat this figure rose to

33.7% in 2006.[13]

Three conclusions stand out from Table 4. First, as indicated above, the average value of bribes

paid per household rose between Period 1 and 2.   Second, 97% of all bribes were paid to those

with perceived links to elected members of Panchayats. Finally, a growing proportion of

households participated in welfare programs in both Panchayat periods but had to bribe

repeatedly to continue participation.

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[12]Munshi and Rosenzweig (2008) show that households which live in the same streets in which the elected representatives of the Panchayats reside are on an average better off than others in the village with respect to access to public services and services related to the public distribution system. Thus both the adversely affected and bribe paying households reported in Table 2 may not live in such streets. But an answer to this question is outside the scope of this paper.

[13]Thus bribes are a regressive tax being collected, not by the government, but by the recipients.

The average number of bribe episodes per year was 8 during Period 2 and the amount paid was nearly 6% of per capita consumption. If bribing facilitates participation but has a low payoff then such behavior could increase household vulnerability.

The fact that most bribes were paid to functionaries with perceived links to elected officials could reflect the following. a) Certain households were unable to approach elected officials or were being discriminated against by such officials. Therefore, they would rather make use of the network to which these officials belong and attempt to get access to the services. b) There is lack of information about the mechanisms of service provision and process of governance on the part of the households. Either way this statistic portrays a system with widespread and growing incidence of bribing.

Tables 2, 3, and 4 help answer three questions. If the beneficiary selection for or administration of various programs is done by elected or appointed officials of Panchayats, would it help to shift the selection process to sector staff instead? (Or, shift the selection to a non- elected but a representative body, e.g., GS? If selections are done by sector staff, would it help to elevate this process to higher levels of Panchayats which could help in enforcing rigorous criteria, and make participation more predictable? If the answer to either of these questions is yes, bribes should decrease otherwise bribes will continue unabated or even increase; only the identity of the recipient will change. The third question is whether, for a given level of participation, it will help to make payments directly to the beneficiary. In this case bribing to ensure participation would continue, but the need to bribe to actually receive the benefits will reduce, even disappear.[14]

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[14]By its design Panchayats are involved in the administration of the Mahatma Gandhi National Rural Employment Scheme (MGNREGS). The MGNREGS now transfers benefits directly to the beneficiaries' bank accounts. Panchayat officials are required to provide the beneficiary household with a job card and employment whenever asked (and the fact that MGNREGS funds have been released will be known during GS meetings and the households participating in such meetings can therefore hold the Panchayat officials to account). However, this design may not reduce bribe payment. Evidence from a survey done by one of the authors in all of the REDS

4. Methodology

4.1 Theoretical model

Consider a two period model in which a household has known income of y_1 and y_2 in the two periods. Consumption in both periods can be augmented by participating in public programs. However, in the absence of transparent governance, program participation can only be assured by paying bribes to panchayat officials. Hence, there is an incentive to pay bribes, particularly if consumption levels without bribing are low.

To capture the possibility that consumption levels can be inadequate in the absence of bribe payment we postulate that the household has a Stone-Geary utility function. As is well known, this utility function incorporates a minimum consumption level below which utility is zero. We also posit that consumption from program participation facilitated by the payment of bribes is a simple exponential function. $\phi_1 = B_1^{\theta_1}$ and $\phi_2 = B_2^{\theta_2}$ where ϕ_i is consumption from bribes paid to participate in public programs in period i (i=1,2) and, for the sake of simplicity both are assumed to be greater than 1, B_i is bribe paid in period i and θ_i (>0) is the exponent in the consumption function from bribes in period i. The utility function is:

$$U = a_1 \log [c_1^0 + B_1^{\theta_1} - \gamma_1] + \beta \{a_2 \log [c_2^0 + B_2^{\theta_2} - \gamma_2]\} \qquad (1)$$

Where,

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villages of Uttar Pradesh, Maharashtra and Orissa shows that at the time of delivery of the job card, the Panchayat official comes to an "agreement" with the beneficiary wherein the beneficiary agrees to part with a portion of the transfers. Following this the Job Card is released to the applicant and 100 days' work is granted at the rate of Rs 150 per day. Of the Rs 15000 transferred to the beneficiary, the aforementioned beneficiary "agrees" to "give" Rs 5000 to the official against 0 days of actual work. Therefore direct transfers and Panchayat administration may not reduce the payments of bribes and payments for no work provided.

$B_1^{\theta_1}$ = Consumption from bribes in period 1

$B_2^{\theta_2}$ = Consumption from bribes in period 2

β = Discount factor

γ_i = Minimum required consumption in period i

The Lagrangean is:

$$\mathcal{L} = a_1 \log \left[c_1^0 + B_1^{\theta_1} - \gamma_1 \right] + \beta \left\{ a_2 \log \left[c_2^0 + B_2^{\theta_2} - \gamma_2 \right] \right\} + \lambda \left[\left\{ y_1 - c_1^0 - B_1 + (\frac{1}{1+r})(y_2 - c_2^0 - B_{2)} \right\} \right]$$

(2)

Where, r is the discount rate. Differentiating, we have:

$$\frac{\partial \mathcal{L}}{\partial c_1^0} = \frac{a_1}{c_1^0 - \gamma_1} - \lambda = 0 \tag{3}$$

$$\frac{\partial \mathcal{L}}{\partial B_1} = \frac{a_1 \theta_1 B_1^{\theta_1 - 1}}{B_1^{\theta_1} - \gamma_1} - \lambda = 0 \tag{4}$$

$$\frac{\partial \mathcal{L}}{\partial c_2^0} = \beta \frac{a_2}{c_2^0 - \gamma_2} - \frac{\lambda}{1+r} = 0 \tag{5}$$

$$\frac{\partial \mathcal{L}}{\partial B_2} = \frac{a_2 \theta_2 B_2^{\theta_2 - 1}}{B_2^{\theta_2} - \gamma_2} - \frac{\lambda}{1+r} = 0 \tag{6}$$

So, the following Euler equations can be defined:

$$\beta \frac{\partial U / \partial c_1^0}{\partial U / \partial c_2^0} = \frac{1}{(1+r)} \tag{7}$$

$$\beta \frac{\partial U / \partial \phi_2 \phi_2'}{\partial U / \partial_1 \phi_1'} = \frac{1}{(1+r)} \tag{8}$$

From (3) and (4), we have:

$$\frac{a_1}{c_1^0 - \gamma_1} = \frac{a_1 \theta_1 B_1^{\theta_1 - 1}}{B_1^{\theta_1} - \gamma_1}$$

Cancelling and re-arranging we get:

$$(c_1^0 - \gamma_1)\theta_1 B_1^{\theta_1 - 1} = B_1^{\theta_1} - \gamma_1$$

So,

$$c_1^0 = \frac{B_1^{\theta_1} - \gamma_1}{\theta_1 B_1^{\theta_1 - 1}}$$

$$= \frac{B_1}{\theta_1} + \gamma_1 \left[1 - \frac{1}{\theta_1 B_1^{\theta_1 - 1}} \right]$$

So, if $B_1 = 0$, c_1^0 can be very low, indeed it can be less than γ_1, the minimum required for subsistence in period 1.

From (5) and (6), we have:

$$\beta \frac{a_2}{c_2^0 - \gamma_2} = \frac{\beta a_2 \theta_2 B_2^{\theta_2 - 1}}{B_2^{\theta_2} - \gamma_2}$$

Cancelling terms, we obtain:

$$(c_2^0 - \gamma_2) \theta_2 B_2^{\theta_2 - 1} = B_2^{\theta_2} - \gamma_2$$

So that:

$$c_2^0 = \frac{(B_2^{\theta_2} - \gamma_2)}{\theta_2 B_2^{\theta_2 - 1}} + \gamma_2$$

Whence,

$$c_2^0 = \frac{B_2^{\theta_2}}{\theta_2 B_2^{\theta_2 - 1}} - \frac{\gamma_2}{\theta_2 B_2^{\theta_2 - 1}} + \gamma_2$$

$$= \frac{B_2}{\theta_2} + \gamma_2 \left[1 - \frac{1}{\theta_2 B_2^{\theta_2 - 1}} \right]$$

Again, if $B_2 = 0$, c_2^0 can be very low, indeed it can be less than γ_2, the minimum required for subsistence in period 2.

Our parsimonious theoretical model has made it clear that consumption levels in the absence of bribe payment can be too low. Further, it has also made clear that changes in bribes, consumption growth and program participation are jointly determined and mutually endogenous. Therefore, a three stage estimation strategy is adopted presuming the existence of a linear system of M equations with jointly dependent and predetermined variables.

$$y_k = Y_k \gamma_k + X_k \beta_k + u_k \qquad k = 1, 2 \ldots M \tag{9}$$

$$y_k = Z_k \delta_k + u_k \qquad Z_k = (Y_k X_k); \; \delta_k = \begin{pmatrix} \gamma_k \\ \beta_k \end{pmatrix} \tag{10}$$

Where, the T-vector y_k contains the observations on the kth dependent variable to be explained by the kth structural equation; $Y_k (T \times m_k, \; m_k < M)$ contains observations on jointly dependent variables included as explanatory variables in the kth equation, $X_k (T \times l_k, \; l_k < A)$ is the matrix of predetermined variables included in the ith equation, γ_k and β_k are corresponding vectors of unknown parameters, u_k is a T-vector of disturbances satisfying

$$E(u_k) = 0,$$

$$E(u_k u_k^{'}) = \sigma_{kj} I_T, \qquad k, j = 1, 2 \ldots M. \tag{11}$$

The error terms are supposed to be independent of the predetermined variables in the system, the reduced form is assumed to exist and the equations are either just identified or over identified (Kapteyn and Fiebig, 1981).

4.2 Estimating Payment of Bribes

In view of the results in Tables 2 to 4 we need to construct a bribe index to measure the diversity of bribes.

The bribe index (at the village level) is defined as:

$$BI = \sum_i \left(\frac{AB_i}{TB_i} \right)$$

(12)

Where, BI is the bribe index for the village and, for the ith household AB_i is the amount of bribe paid to the Pradhan or Ward members and TB_i is the total amount of bribe paid to functionaries who are perceived by the households to have links to the elected members of the Panchayats. The village bribes index ranges from 0 to 1. If the value is 1 then all bribes are being paid to elected representatives. A low bribe concentration index points to the existence of a bribe network. This is possible if the likelihood of the elected representatives being caught is large and if such an event is likely to negatively affect their careers (Persson and Tabellini, 2000, Ch. 9). A bribe network can disguise the ultimate beneficiary of the bribes. On the other hand, a low bribe concentration index in a village could reflect the relative inability of households to directly approach elected representatives for access to benefits and problem solving. We find that the average bribe index was low and rose only marginally between the two Panchayat periods, suggesting that most bribes are still paid to network members rather than the principals. The marginal growth in the index suggests that in Period 2, more bribes were being paid directly to the elected representatives - but the rupee magnitude of such bribe payments was still small. We interpret the impact of this index by examining whether increased incidence of bribery to the elected members by all other households of the village increases the magnitudes of bribe payment by any given household. If increased autonomy over expenditures or beneficiary selection residing with the elected representative is a pathology, then any increase in this index conditioned on such autonomy should also lead to increased bribing. This, essentially, is the "capture" of total bribes by elected representatives.

The bribe index (12) uniquely identifies the changes in payment of bribes which is estimated as follows:

$$\Delta B_{it} = \tau_0 + \tau_1 \Delta BI_{-it} + \omega_l F_{lt} + \phi_l \sum_l C_{lit} + \varepsilon_{it} \tag{13}$$

where, ΔB_{it} is change in bribes paid, ΔBI_{-it} is the change in bribe index (net of own) in the village, F_{lt} are exogenous identifiers detailed below; $\sum_l C_{lit}$ is the vector of other household (i^{th}) and village (l^{th}) level controls such as participation in GS meetings, presence of a re-elected Pradhan, and political support for the candidates during election and after, and share of local revenue raised in all Panchayat revenues.

We include four identifiers that are exogenous to the Panchayats: devolution powers by the respective State Governments to the Panchayats with respect to expenditures, beneficiary selection, execution; and whether the Panchayat was ever reserved for women. If bribes are associated with inefficiencies of the system then it is important to know whether the Panchayats had autonomy over expenditures, execution of projects and, whether the responsibility of beneficiary selection was adequately devolved. Political reservations for women may significantly reduce agency costs associated with governance, and consequently reduce corruption at the level of local government. If one argues that bribes are a result of both information asymmetry within the village between the elected representatives and the households, and such information asymmetries are the result of inadequate devolution then bribes should diminish with increased devolution.

4.3 Estimating Participation in Welfare Programs

Change in number of welfare programs participated in by the household is estimated as follows:

$$\Delta WP_{it} = \pi_0 + \varpi_1 \Delta \widehat{BI}_{it} + \varpi_2 \Delta PG_{lt} + \gamma_l \sum_l M_{lit} + \epsilon_{it} \qquad (14)$$

Where, ΔWP_{it} is change in the number of welfare programs participated by household i, $\Delta \hat{B}_{it}$ is

change of bribe payment by the household, ΔPG_{it} is the change in the number of welfare

programs in the lth village, $\sum_l M_{lit}$ is vector of variables including women's reservation in the

Panchayat, growth in agricultural programs, growth in public goods, and growth in general

welfare programs. The unique identifier for this equation is change in number of welfare

programs in the village.

4.4 Estimating Changes in Per Capita Consumption

Change in a household's welfare is measured by change in its per capita consumption

estimated as follows.

$$\Delta PC_{it} = \alpha_0 + \alpha_1 \widehat{W}_{it} + \alpha_2 \widehat{WP}_{it} + \lambda_l \sum_l X_{lit} + \mu_{it} \qquad (15)$$

Where, ΔPC_{it} is the change of per capita consumption expenditure, $\widehat{W}$ is the predicted

wealth, WP_{it} is the predicted participation in programs, X_{lit} is a vector of exogenous variables

that includes the public expenditures on agricultural programs, public expenditures on welfare

programs, village untied grants (for the lth village), village level shocks, household level shocks,

age of the head of the household, household size, average education in household, and, μ_{it} is the

random error.

The unique identifiers for the consumption function are predicted changes in household

wealth. Change in wealth is a consequence of household splits and will adequately explain

changes in per capita consumption at the household level.[15]

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[15]Here we estimate predicted change in household's wealth. Changes in household wealth are often a consequence of household splits. Predicted household splits adequately predict changes in wealth (Foster and Rosenzweig, 2001). We predict the change in wealth as follows.

$$\Delta W_{it} = \kappa_0 + \phi_j S_{jit} + \nu_{it}$$

5. Results

Table 5 reports results of estimating equations (13), (14) and (15). The Chi^2 values for all three equations are statistically significant, and the Hansen-Sargan test indicates that the system is over-identified. Panel 5 a) shows the determinants of bribes; 5 b) the determinants of program participation; and 5 c) the factors affecting household consumption. Panel 5d) shows the derived estimates.

Table 5 about here.

5.1 Determinants of Bribe Payment

It was earlier suggested that deepening democracy could reduce bribes, and that bribery can largely be thought of as a result of an imperfect system of local governance. Since GS have been put in place to improve the quality of governance in Panchayats; participation in GS should allow households to access information and hold elected officials to account. We find that a 10 % increase in participation in the GS meetings leads to decline in bribe incidence by 0.42%. There are two reasons for this inelasticity of response. First, participation in GS meetings is intended to ward off capture and hence may not yield private benefits. Second, if GS meetings do not lead to any discussions on either public goods provision or targeting, attending them will not reduce bribes.

Where, i indexes households, j the variables and t is time, ΔW_{it} is the change in household's wealth, S_{jit} is the vector of variables that predict whether a household will split. It includes age of head of the household, change in variance and mean of education of members of household, number of children whose age is less than 15 years, inherited wealth at the beginning of period 1, dummies for whether father is co-resident at beginning and at end of the periods (1 and 2), dummies for whether both brothers and sisters are co-resident at the beginning and end of the period (1 and 2) and, V_{it} is the error term.

We observe no statistically significant impact on amount of bribes paid by the household if the position of Pradhan was ever reserved for women. However, there is separate evidence of the impact of political reservations on corruption: improved governance brought about by a female elected representative substantially reduces incidence of bribery[16], but does not significantly reduce the magnitudes of bribes paid by those who continue to bribes. Thus, agency costs associated with local governance may fall under female leadership.

An increase in the village bribe concentration index increases payments of bribes. If this index rose by 10 %, e.g. from 7 % to 17 %, per capita bribes would go up by 2.2%. In villages in which there is a broad bribe network rather than bribe collection by a clique of elected officials, less bribes are paid. Since the bribe concentration index can go up because the Pradhan is more powerful, or because he/she is more directly approachable by the villagers for problem resolution, more bribes appear to be associated with either of these changes.

We have already noted that per capita bribes paid are significantly higher than the per capita tax revenue. Citizens can hold elected representatives to account when taxes are paid, but such formal contracts are absent in the case of bribes. We find that an increase in the share of local tax collected in all revenues of Panchayats reduces payment of bribes sharply. A 10% increase in the share of local taxes reduces bribes paid by 7.7%, which provides a strong argument for empowering local governments to raise taxes.

The indices of autonomy over expenditures come from state level schedules that provide information on whether the specific function is performed by the Panchayat or for different programs implemented at the village level[17]. Each Autonomy Index measures the proportion of

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[16] We test this by replacing magnitude of bribes paid by an indicator variable for whether or not bribes were paid and estimated a probit model. Consistent with Beaman et al (2010) we find that political reservations significantly reduce the probability of paying bribes by 8.5%.

[17] For a definition of these indices, see table A2.

programs for which the specific function was devolved. If more powers over allocation of funds

in programs and over the execution of programs are devolved to Panchayats, bribe payment falls,

perhaps because such devolution leads to intensified participation and scrutiny of the programs

by the villagers. Increasing autonomy over execution by 10 % will decrease bribe payment by

6.2%. However, increasing the power of selecting beneficiaries by 10% will increase bribe

payments by 4.5%. This may be because a rent-seeking government when given a free hand to

decide program targeting, potentially facilitates program capture by the highest briber. If all three

measures of autonomy were to rise by 10%, bribe amounts would fall by 3.7%. Hence, it matters

how autonomy is increased.[18]

In order to reduce bribe payments it would be important to make transparent the receipt of

resources for the programs and selection of beneficiaries. A first measure could be to widely

publicize all resources received in the village. Once an electronic payment system is in place, the

system could also be used to disseminate such information, or an audit committee of the GS

could be set up with responsibility for disseminating such information. Second, the power to

select beneficiaries could be transferred to the GS, or a subcommittee of the GS.

5.2 Change in Participation in Welfare Programs

A 10% increase in bribes leads to a 13% increase in the probability of program participation; i.e.

the impact of bribes on change in participation is elastic. Panel (d) of Table 5 depicts the

resulting predicted program participation for households bribing and those not bribing. The

former are expected to participate almost thrice as much as the latter. Crucially, not bribing is

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[18]To illustrate this we use the MGNREGS example. We discovered that the information about the receipt of financial allocations for this program was usually available only with the elected representatives of Panchayats. This created information asymmetry within the village because Pradhan and ward members could have used this private information about the magnitude of this transfer to grant benefits (in the form of work allocations) to members of their own Jati. Work allocations to other villagers could then have been "rationed out" against bribes.

found to reduce likelihood of participation in welfare programs by 55%. This indicates that there are substantial benefits of bribery but significant costs of not bribing in terms of reduced access to programs.

5.3 Growth in Panchayat Expenditures and Bribes

If bribes are required to access welfare programs, then an increase in such programs in a village increases participation by households as indicated by the positive elasticity of program participation with respect to total village programs available. We include interaction terms between three types of program expenditures and the payments of bribes that measure the advantage gained by those paying bribes. The advantage gained by the bribe givers over others in the context of welfare programs and public goods programs is 88.1% and 82.8%, respectively. However, bribing provides no advantage in the context of the growth of agricultural programs. Autonomy over expenditures and beneficiary selection in these programs strongly increase uptake in all programs, with those paying bribes benefitting the most from such autonomy.

5.4 Change in Per Capita Consumption

The direct impacts of participating in programs on real per capita consumption are relatively inelastic but highly significant. A 10% increase in program participation leads to a 1.14% increase in consumption. A 10% increase in per capita bribes leads to a 13% increase in program participation, which leads to an approximately 1.38% increase in per capita consumption. This is a rather startling result. Bribery does facilitate program participation, however this bribe is so high that the resultant increase in consumption is small, though significant.

Per capita bribes are slightly more than Rs. 30 per year while per capita consumption is about Rs 6500. Therefore a Rs. 3 increase in bribes is estimated to lead to an increase in per capita consumption of approximately Rs. 90. A 10% increase in predicted household wealth tends to

slightly depress per capita consumption by 0.3%, possibly due to reallocation to savings. The

extremely high payoffs for program participation and consequently per capita consumption to

paying bribes explain why they are increasing steadily. However, participation in GS meetings

yields much lower consumption benefits to households. If the average number of GS meetings

attended is 2, increasing it to 3 (a rise of 50%) would increase private consumption by only about

1 Rupee.

Further, the poor have by far the highest predicted consumption change (at 15%) if they bribe.[19]

The poor may experience only a small increase in consumption if they do not bribe, with the

average change at almost 7%. Bribing also increases predicted growth for all consumption

classes, with the largest proportional gain of 9.8% for the poor, followed by 6.2% for the non-

poor. It is clear that the poor need to bribe if they want their consumption to increase.

The coefficients of Panchayat expenditures on agriculture, untied resources, and public goods on

consumption are statistically significant but small (on average 7%). Average per capita

consumption expenditure was Rs. 6500 in 2006, while per capita public expenditures on

agriculture and public goods were Rs. 75 and 77 respectively. Combining these numbers with the

impact of these expenditures on per capita consumption we calculate that 10 % increases in

Panchayat per capita expenditures on agriculture and public goods lead to average per capita

consumption increases of Rs 5 and 6 respectively. For both types of expenditures only 43% and

45% of current expenditures are recovered in terms of an increase in per capita village

consumption. But that may not be the whole story if, for example, they generated savings and

private investment, public investments, or spillovers into subsequent years; or some of the

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[19] Derived estimates computed using $(\Delta\widehat{PC}_{it} \mid Poor = 1, 0)$

expenditures could leak out of the village economy. Further analysis will be needed to assess the full benefits of Panchayat public expenditures.[20]

6. Conclusions and Policy Implications

Average bribes paid increased between 1999 and 2006 with bribes being used to address a broad range of problems. Repeated bribing, even by those who participated in programs, has nearly doubled. Most of the bribes were paid not directly to elected officials but to persons understood to be connected to them or to others with influence over programs. The number of people who have to be approached to resolve problems of any kind increased. Of particular concern is that even the poorest households paid more bribes. We show that people bribe in order to have problems resolved, reduce malpractice and get access to welfare programs, and ultimately increase their consumption. Bribery seems to be essential for increasing program participation but, because of the bribes, the consequent increase in consumption is small.

Nagarajan *et al.* (2014) have shown that deepening democracy at the local government level has powerful positive impacts on health and healthcare via four accountability mechanisms.[21] However the data also show that many of the issues concerning people are not resolved in a manner that is transparent, efficient, and equitable. This generates an incentive to bribe. Further, these problems worsen over time.

Political reservations for women have no impact on the quantum of bribes being paid, but consistent with the literature, reduce the likelihood of bribery, highlighting that there may be

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[20]We also included the revenues from welfare programs in the regression, but these revealed no impact on consumption, probably because any impact is already captured in by other expenditures on programs.

[21] These are reservation of the position of the Pradhan for women, the attendance of citizens in the village assembly when health is on the agenda, voting on health care when it is on the agenda and Panchayat level expenditures on health.

limits to the improvements in governance brought about by reducing agency cost related to

governance. Providing greater autonomy to Panchayats over the use of grants reduced the

magnitude of bribes. This provides an additional reason for increasing such autonomy to the

increase in local taxation that the impact of increasing autonomy provides.[22]

However, increasing the autonomy of Panchayats over the selection of beneficiaries increased

bribes, consistent with beneficiary selection being opaque and inequitable. Nagarajan *et al.*

(2014) confirm that information about receipt of resources for programs instead of being

disseminated is closely held by elected and appointed village officials who also keep control over

the beneficiary selection process and problem resolution. Policy should focus on increasing

transparency of beneficiary selection, or ensure that beneficiary selection involve administrators

from higher levels of government. This would require the transparency increases concurrently.

Bribing could be reduced by improvements in governance to enhance transparency, efficiency in

program administration and accountability to citizens, e.g. through increased household GS

participation. Outside support by political parties in the elections tends to increase bribery. This

may happen because households not affiliated to the party of the winner may have to bribe more

to have their problems resolved. Higher concentration of bribe networks, with more bribes paid

directly to the elected officials rather than an intermediary also increases total bribe payments.

The impact of bribing on consumption per capita via increases in program participation is

significant. If they do not bribe, the poor have a predicted decline in consumption, with the

average decline being the sharpest for the ultra-poor. Bribes increase expected consumption for

all income groups but provide the poor with a higher proportionate consumption increase than

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[22] Local taxes are very low and higher tax revenues would provide opportunities for improving services.

the non-poor. Bribery also affects non-poor classes significantly, suggesting that they cannot avoid bribery. The largest proportional gain was for the ultra-poor, followed by the poor. Given the imperfections in the local governance system, bribery is a second-best option for the citizen to augment consumption.

Whether bribes also lead to social benefits depends on the purpose of the bribe. If it was paid to resolve a problem with the provision of a public good that benefits the entire or parts of a community, there could be positive spillovers to other households. However, if the bribe is paid to get access to a rationed welfare benefit, and leads to the exclusion of another household that does not pay a bribe, there is no net social benefit.

In essence, bribes are playing a pivotal role in the governance of villages and have profound redistributive effects. Despite the improvements that local governments achieve in the provision of services, the payment of bribes is an admission of the weakness of local governance and of the urgent need for local political and administrative reforms.

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TABLE 1: SAMPLE, VILLAGE AND HOUSEHOLD CHARACTERISTICS: 1999-2006[#]

Variables	2006 (Period 2 Panchayat)	1999 (Period 1 Panchayat)	% change
Sample Characteristics			
Number of states	17	17	0
Number of Districts	104	104	0
Number of Blocks	163	163	0
Number of villages	241	241	0
Number of households in the panel	5,885	5,885	0
Average number households in all villages	700.50	622.9	12.46
Household Characteristics			
Household Size	5.24	6.23	-15.89
Age of head	51.16	49.42	3.52
Years of Schooling of HH Head	5.11	4.46	14.57
% of male children (<15 years)	0.81	0.61	32.48
% of female children (<15 years)	0.70	0.53	30.70
Per capita consumption (Rs)	6568.28	5857.37	12.14
Per capita wealth	159521.1	110230.3	44.72
Poverty (Head Count)	24.98	30.60	-18.37
Ultra-Poor	3.41	1.5	127.33
Poor	21.57	29.1	-25.88
Non-Poor	52.45	50.9	3.05
Affluent	22.57	18.5	22.00
Inherited wealth	708874.5	559465.3	26.71
Number of village shocks	1.19	1.23	-3.25
Number of household shocks	1.14	1.02	11.76
Average Value of bribes (Rs.) per household	167.33	120.33	39.06
Bribe concentration index	0.07	0.04	75.00
Village Characteristics			
Panchayat agriculture Expenditure (Per capita)	74.64	145.22	-48.60
Panchayat expenditures on welfare programs (Per capita)	132.88	74.86	77.50
Panchayat public goods expenditure (Per capita)	77.11	76.74	0.48

Panchayat untied resources (Per capita)	122.03	93.61	30.36
Regime change (Female to male)	22.75	17.17	32.50
Regime change (Male to female)	26.18	22.32	17.29
Re-election of Pradhan	19.74	13.73	43.77
Outside support from political party	83.26	77.68	7.18
% villages reserved for women	30.47	26.18	16.39
Average number of centrally sponsored schemes active in villages	14.13	12.31	14.78
Proportion of adults that attend at least one GS meeting	88.28	75.69	16.63
Number of GS meetings held	13.33	7.10	87.75
Fiscal systems characteristics			
Index of Autonomy over expenditures	0.56	-	-
Index of Autonomy in selecting beneficiaries	0.78	-	-
Index of Autonomy in execution	0.77	-	-

TABLE 2: FACTORS AFFECTING PAYMENT OF BRIBES[23]

Variables	Period 2 Panchayat (2006)			Period 1 Panchayat (1999)		
	Proportion of households affected	Proportion of households that paid bribe	Average number of functionaries approached	Proportion of households affected	Proportion of households that paid bribe	Average number of functionaries approached
Pertaining to the community						
Water[24]	0.777	0.82	2.32 (0, 18)	0.780	0.80	1.56 (0, 12)
Health	0.539	0.609	3 (0,16)	0.533	0.586	1.64 (0,11)
Road	0.758	0.807	2.23 (0,14)	0.741	0.766	1.41 (0,11)
Education	0.376	0.441	2.15 (0,18)	0.363	0.420	1.47 (0,9)
Street Light	0.672	0.667	2.12 (0, 12)	0.638	0.638	1.42 (0,10)
Sanitation	0.653	0.680	2.15 (0,17)	0.632	0.634	1.32 (0,11)
Others	0.489	0.518	2.14 (0,10)	0.475	0.488	1.37 (0,10)
Household Specific						
Public Work Program	0.721	0.795	2.242 (0,19)	0.685	0.781	1.54 (0,11)
Education	0.182	0.213	2.261 (0,15)	0.163	0.190	1.42 (0,10)
Health	0.145	0.154	3 (0,12)	0.143	0.155	1.55 (0,10)
Other	0.200	0.234	2.15 (0,15)	0.223	0.234	1.348 (0,9)
Reduce expected malpractices (household level)						
Beneficiary selection	0.480	0.524	2.09 (0,14)	0.462	0.495	1.43 (0,11)
Mid day meal scheme	0.214	0.250	3 (0,11)	0.175	0.188	1.81 (0,10)
Functioning of ration shop	0.279	0.298	2.17 (0,16)	0.280	0.289	1.28 (0,9)
Ration card distribution	0.440	0.497	2.22 (0,17)	0.425	0.487	1.47 (0,10)
Observations	5885	3501	-	5885	3005	-

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[23] The numbers in parenthesis refer to minimum and maximum number of functionaries approached by the household for that specific problem.

[24] Public taps and irrigation.

TABLE 3: PAYMENT OF BRIBES AND ACCESS TO FUNCTIONARIES

Variables	Period 2 Panchayat		Period 1 Panchayat	
Consumption classes	Proportion of households that paid bribes	Average number of functionaries approached	Proportion of households that paid bribes	Average number of functionaries approached
Poorest (Bottom one-third)	0.337	2 (0,13)	0.298	1.558 (0,15)
Medium (Middle one-third)	0.332	2.317 (0,18)	0.261	1.465 (0,11)
High (Upper one-third)	0.329	2.174 (0,17)	0.275	1.315 (0,11)
Observations	3501	-	3005	-

TABLE 4: PARTICIPATION IN WELFARE PROGRAM AND BRIBE

Participation in welfare program and bribe		
Variables	**Period 2 Panchayat**	**Period 1 Panchayat**
Total Households	5885	5885
Number of villages in the sample	241	241
Bribe		
Not paid bribe	48.11	58.47
Paid bribe	51.89	41.53
Paid bribes to persons with perceived links to functionaries[*]	97.91	97.73
Paid Bribes directly to the Functionary[†]	2.29	2.07
Bribe & Participation		
Participated in welfare program and paid Bribe[‡]	49.38	38.32
Average number of programs participated in	1.92	1.49
Participated in welfare program and not paid bribe	46.17	55.77
Not Participated in welfare program and paid Bribe	2.28	3.01
Not Participated in welfare program and not paid Bribe	2.17	2.90
First time participants and paid bribe	4.34	7.27
Repeat participants and paid bribe	32.03	16.92

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[*] If the household paid bribe to someone other than the responsible functionary due to perceived links of the recipient of the bribe to the functionary then it is counted as 1 else 0.

[†] If the household paid bribe to the functionary responsible for the administrator of the program then it is counted as 1 else 0.

[‡] If household participated in any one of the welfare programs and also paid bribe it is counted as 1 else 0.

TABLE 5: CHANGE IN PARTICIPATION IN WELFARE PROGRAM WITH PAYMENTS OF BRIBES

Variables	Coefficient	Std. Err.
a) Change in payment of bribes		
Participated in GS meeting (change in log of number)	-0.042**	0.019
Bribe concentration index	0.222*	0.127
Share of local taxes in revenue	-0.77***	0.203
Ever reserved	-0.01	0.068
Index of Autonomy over expenditures	-0.202	0.155
Index of Autonomy in selecting beneficiaries	0.456*	0.247
Index of Autonomy in execution	-0.624***	0.184
Constant	0.904***	0.12
Chi2	44.6***	
Jati fixed effects	Yes	
b) Change in participation in welfare programs		
Predicted change in payment of bribes (log)	1.264***	0.189
Ever reserved	0.004	0.097
Growth in number of village programs (log)	0.0008	0.001
Panchayat expenditure on agricultural program* Payment of bribes	-0.1	0.341
Panchayat expenditures on public goods* Payment of bribes	0.828**	0.335
Panchayat expenditures on welfare program* Payment of bribes	0.882***	0.314
Constant	-0.654**	0.274
Chi2	554.3***	
c) Change in per capita consumption		
Predicted change in program participation (log)	0.114***	0.030
Predicted change in log of wealth	-0.03***	0.011
Change in log of number of GS meeting attended	0.0005***	0.0001
Change in log of public expenditures on agricultural program	0.006***	0.002
Change in log of Panchayat expenditures on welfare programs	-0.0046	0.004
Change in log of Panchayat expenditures on public goods	0.008***	0.002
Change in log of Panchayat untied resources	0.0062***	0.002
Number of village level shocks between 1999 and 2006	-0.0006*	0.0004
Change in log of number of household level shocks	-0.21***	0.073

Change in log of average household age	0.0026***	0.0007
Change in log of highest years of education	-0.024***	0.009
Change in log of mean years of education of households	0.004**	0.001
Constant	-4.606***	1.373
Chi2	88.32***	
Hansen-Sargan over identification statistic	1967.44***	

d) Derived estimates#	t-test	
Predicted growth in program participation if bribes are paid ($\Delta\widehat{WP}_{it}\|B = 1$)	1.38	***
Predicted growth in program participation if bribes are not paid ($\Delta\widehat{WP}_{it}\|B = 0$)	-0.55	
Predicted consumption growth via program participation		
Predicted consumption growth if bribes paid ($\Delta\widehat{PC}_{it} \| B = 1$)	0.08	**
Predicted consumption growth if bribes are not paid ($\Delta\widehat{PC}_{it} \| B = 0$)	0.06	
Number of observations	**5363**	

#As predicted by the systems of equations. *, **, *** = significant at 10%, 5 %, and 1 % respectively.

TABLE A1
ESTIMATION OF CHANGE IN REAL WEALTH

Variables	Coefficient	S.E
Change in wealth		
Age of household head in 1999	-0.007***	0.002
Change in mean of households' education	0.073	0.049
Change in variance of households' education	0.045**	0.023
Change in maximum of households' education	0.082	0.059
Number of male child in 1999 (<15 years)	0.033	0.047
Number of female child in 1999 (<15 years)	-0.114***	0.045
Number of male child in 2006 (<15 years)	0.062***	0.023
Number of female child in 2006 (<15 years)	0.033	0.023
Inherited wealth in 1999	-0.283***	0.008
Dummy for non-co-resident father of household head in 2006	0.410***	0.152
Dummy for non-co-resident brother of household head in 2006	0.351***	0.109
Dummy for non-co-resident sister of household head in 2006	-0.376***	0.194
Dummy for non-co-resident father of household head in 1999	-0.222	0.143
Dummy for non-co-resident brother of household head in 1999	-0.532***	0.100
Dummy for non-co-resident sister of household head in 1999	-0.304**	0.154
Constant	-0.007***	0.002
Chi2	1564.63***	
Number of Observations	5885	

*, **, *** = significant at 10%, 5 %, and 1 % respectively.

TABLE A2
DEFINITION OF VARIABLES

Variables	Definition
Public expenditures on Agricultural programs	All agricultural programs that comes to the village. These include expenditures on irrigation, electrification, credit & input subsidies, and watershed development programs under DRAP and DDP etc.
Public expenditures on Public goods	All public good financing that comes to village. These include expenditures on drinking water, sanitation & sewage, roads & transportation, schools & education, health facilities, PradhanMantriGrameenSadakYojana (PMGY) etc.
Public expenses on welfare programs	All public goods ton welfare programs. These include expenses on access to local government schemes, employment schemes of food for work, social issues & ceremonies, Below Poverty Line (BPL) programs, Indira AwasYojana (IAY), SamagraAwasYojana, Annapurna, Mid day meal etc
Village untied resources	All revenue from grants and own taxes. These include revenue from state finance commission, land tax, water usage tax, stamp papers and other local taxes
Index of Autonomy over expenditures	Of 16 major functions, whether the Panchayati Raj Institution is in charge of allocating funds towards programs. This index is across nearly 40 different heads of expenditure and revenue
Index of Autonomy in selecting beneficiaries	Of 16 major functions, whether the Panchayati Raj Institution is in charge of selection of beneficiaries and program targeting. This index is across all targeted programs.
Index of Autonomy in execution	Of 16 major functions, whether the Panchayati Raj Institution is in charge of overall execution of the programs. This index is across all types of programs at the local, state, and national level.
Ultra-Poor	Per capita exp. is less than ½ of poverty line
Poor	Per capita exp. is greater than ½ of poverty line and less than poverty line
Non-Poor	Per capita exp. is greater than poverty line and less than 2 times of poverty line
Affluent	Per capita exp. is greater than 2 times of poverty line