

**JATI, LOCAL PUBLIC GOODS AND VILLAGE GOVERNANCE: PRIVATE  
ACTIONS AND PUBLIC OUTCOMES**

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**Abstract**

This paper purports to understand whether voting along narrow parochial lines in socially and ethnically fragmented societies has measurable gains. Using data from rural India, we establish that identity based voting, driven by membership in social and informal networks, will lead to enhanced participation in welfare programs, which in turn leads to increased consumption growth. We also show that reducing agency costs does not necessarily remove the need for identity-based voting, and that such voting behavior is a means for engaging in capture of public and private benefits by these groups. Some policy recommendations are also advanced.

*Keywords:* Economic development; voting behavior; decentralization; parochial politics

JEL Classification: **D71, D72, H41, O12**

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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, conceivably, 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, quite scarce. This has led to less than satisfactory human development outcomes and prompted the Indian Parliament to pass the 73<sup>rd</sup> and 74<sup>th</sup> amendments to the Constitution of India in 1992 requiring local self-governance and decentralization. The implicit assumption behind such changes was that such decentralization and self-governance would lead to improved decision making, and augment and make more equitable the provision of public goods. The local self-governance institutions entrusted with this task are called *Panchayats*.

Access to several public services is crowdable whence households compete to avail of them. Since price does not act as a rationing mechanism, households have an incentive to use the political process to improve access, a theme we explore in this paper. Ideally, democracy should guarantee equitable access to public goods and services. However, the Panchayats that were created to enable equal access to public services and goods in Indian villages have been fraught with implementation anomalies issues and pathologies e.g. lack of responsibility in service provision; poor accountability; and high agency costs. Since such problem-ridden agencies are the only channels through which public goods can be provided, households and individuals may be driven to engage in specific types of behavior to overcome systemic pathologies.

Indian Panchayats are beset with significant agency costs. Reservations for women are a means to reduce such costs and achieve efficiency in governance (Nagarajan et al., 2015). However, Munshi and Rosenzweig (2008) show that women leaders are efficient only in the presence of caste equilibrium. A caste equilibrium is purported to occur when the numerically-dominant caste in a constituency selects its most competent member as leader, while at the same time ensuring that their choices reflect the preferences of the median individual in the group, but not the entire constituency and, women leaders (despite having significantly lower education and labor market participation) appear to be more competent in acquiring resources for their constituencies than men. The leader in the caste-equilibrium aligns with the preferences and choices of the median voter of the caste and not the median voter of the constituency.

In the context of Indian parochial politics, castes (henceforth Jatis)<sup>1</sup> play a significant role both during and after elections, whence it becomes important to understand the drivers of participation in elections<sup>2</sup>, and relate these to specific outcomes in the context of local governance. If social networks (organized along Jati lines) are playing a significant role in providing information, and mutual insurance, then, such networks could also play a critical role in voting decisions. These voting decisions, in turn, pose implications for service delivery, grievance redressal, and economic outcomes.

Identity based voting (IBV) is a strategy for voting wherein the Jati of the candidate up for election is a key determinant of voting choice. IBV is therefore a collective decision of both households and the network and influences the outcome of public decisions, especially in the

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<sup>1</sup>The term caste is an aggregation. An appropriate reference to the social position of a member (and household) is Jati. In this paper we will refer to the social position by Jati. The official aggregation will be referred to as caste (such as SC/ST, or OBC).

<sup>2</sup>There may indeed be several other factors that also determine electoral participation: religion, social status, knowledge of issues faced by voters, technical qualifications, and ability to effectively represent voters. We treat Jati as the most important factor determining voting behavior in this paper.

implementation of welfare programs (WP), and therefore improvements in welfare for both individual members, households as well as for the network as a whole.

This paper argues that IBV is a mechanism by which voters can ensure commitment by elected representatives in delivering public goods as well as obtaining program benefits. We posit that such mechanisms of governance interact with self-interest and create both public and private benefits. Private benefits can be considered as improvements in household consumption or income, or access to services, whereas public benefits include improvements in quality of governance and grievance redressal. In the absence of well-laid out (and impersonal) criteria and framework for provision of public services and grievance redressal mechanisms, second-best strategies are likely to emerge and may even prove optimal for households. IBV is one such expression of self-interest, but such strategies cannot be substitutes for impartial and transparent criteria for governance.

In this paper, we broadly set out to examine (a) issues relating to local governance and decentralization, (b) IBV by households, and (c) the implications of such voting behavior when it interacts with the existing governance framework to gain public and private benefits. There is a substantial literature on the voting behavior in India e.g. (Banerjee, 2014, Khemani, 2001, Aidt and Dutta, 2004). However, the issues addressed in this paper

This paper draws on the theoretical analysis of Munshi and Rosenzweig (2008) and Banerjee and Pande (2007) who show with data from North India that numerical dominance of a particular caste on average leads to lower quality of leaders elected (thereby also linking IBV to corruption). Similarly, Reinikka and Svensson (2004) find that leaders in rural Africa from wealthier communities are more likely to engage in capture of school grants, apportioning a greater share of tied vertical transfers. Bhalotra et al. (2014) analyze the impact of district-level

voting driven by the religion of the candidate on development outcomes. They find improved health and education outcomes in the district without any evidence of religious favoritism – Muslim children, relative to children from other religions, did not benefit any more from having an elected representative of their own religion. Similar findings are reported using evidence from African countries (Kudamatsu, 2009; Franck and Rainer, 2012).

The novelty of this paper is that it analyzes development outcomes from IBV and place these in the context of decentralized local governance, and map development outcomes via private and public benefits (program participation leading to consumption growth). Pandey (2003) suggests incomplete policy commitment when studying the impact of political reservations for scheduled castes and tribes (SCs/STs) in India. De Paola et al. (2014) conclude that such reservations may provide previously-denied opportunity to disadvantaged groups to take part in policy-making decisions while channeling transfers towards groups that benefit from the mandate. While this is critical evidence of private benefits from IBV (albeit under a specific type of political regime), it is worth studying whether such outcomes persist without these conditions, and even under improved quality of governance (such as under reservations for women).

Although Caillaud and Tirole (2002), Snyder and Ting (2002), and Alesina and Spear (1988) argue that a decentralized political apparatus is adequate to ensure commitment by elected representatives this may not carry over to fragmented societies.<sup>3</sup> <sup>4</sup>Barenboim and Burstyn (2008), and Khemani (2001) suggest that if decentralization is an outcome of political

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<sup>3</sup>Much of social policy in India has been designed to afford primacy to welfare of specific groups (defined either by their ethnicity or socio-economic well-being). Nagarajan et al (2014) show that programs designed to affect group welfare are better targeted compared to those meant for enhancing individual welfare (such as the PDS) The Indian Constitution also recognizes and provides impetus to policy for enhancing welfare of groups based on their socio economic status in the society. The Panchayati Raj Amendment (73rd) has enabling provisions for gender, and disadvantaged groups. Households, therefore, will derive positive externalities from membership in groups as well as social networks.

<sup>4</sup> See also GOI (2001).

compulsions, rather than being motivated by concerns of welfare of all households, then the electoral process will reflect such pathology.<sup>5</sup>

Finally, Besley et al. (2005) suggest that both the identity of and changes to the identity of the dominant group alter allocation of public goods. It has also been shown that electoral outcomes and performance of the local governments broadly reflect the composition of villages (Foster and Rosenzweig, 2004; Banerjee and Iyer, 2007). Hence, for example, expenditures on irrigation are more likely to take place if the elected system is represented by agricultural households. Though the literature has addressed motivations for strategic voting in the context of gaining public and private benefits, there is no study thus far dealing with this issue in the context of decentralization and local governance<sup>6</sup>.

Using a unique data set we first test if growth in financial resources available at the village level without optimal devolution of powers encourages parochial politics. We show that this is indeed the case implying that greater devolution of finances may be being used along narrow parochial lines. For household-level outcomes, we test whether improved quality of governance provides an incentive to any specific group or individual to engage in parochial voting. The results suggest that the interaction between local governance and IBV ensures both, public as well as private benefits to households. We test whether there are only private benefits associated with second best strategies such as IBV. IBV for women in reserved Panchayats (particularly in the case of problems solved by officials relating to entitlements under government schemes) point towards such voting being particularly effective in obtaining private benefits from government schemes. Finally, we establish that IBV will lead to enhanced

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<sup>5</sup> In this connection see also Bardhan et al. (2009).

<sup>6</sup> Jha *et al.* (2009) suggest that the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) in Andhra Pradesh was more prone to capture by local elite, relative to the case in Rajasthan. Using landholding patterns, MGNREGS implementation efficiency, and geographic remoteness indicators, the authors are able to show that the likelihood of program capture is increasing in isolated villages and for individuals having larger landholdings.

participation in WP, which in turn leads to increased consumption growth. We also show that consumption growth is retarded if households do not engage in IBV. Thus there are significant private benefits from IBV. Since voting behavior is not revealed to the elected candidate, the likelihood that a “deviant household” will be punished, or a deviant household member will not have access to a welfare program (WP) is zero.

The plan of this paper is as follows. Section 2 describes the data and provides a context for the issues germane to IBV that we wish to examine. Section 3 explains the methodology that we use to address the questions outlined here. Section 4 presents the results whereas section 5 concludes and provides implications for policy.

## **2. Data and Qualitative Conjectures**

We use data from the Rural Economic and Demographic Surveys (REDS) conducted by the National Council for Applied Economic Research (NCAER). These surveys were started in 1969 and represent a panel of 241 villages representing 17 major states of India. In addition to information included in standard multi-purpose household surveys, the REDS contain data on member level voting patterns, social networks on which households and members of households base their decisions on as well as seek information from, Jati of the households, importance given by households and members of these households to Jati at the time of voting, and participation in welfare. Also available is detailed information on the characteristics of elected representatives, their literacy, and, the nature of support that they receive from both within and outside the village.

The survey is in three parts. The listing questionnaire is a census of all the 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. The village questionnaire provides details on, among other variables, local governance including elections, Gram Sabha (GS) meetings, government programs, taxation, expenditures, number of village level shocks. The household and member level information relating to voting and program participation is derived from the household survey. The size of the sample in 1999 and 2006 surveys is 7474 and 8659 households respectively, of which 5885 households were interviewed in both rounds. We use surveys for these two Panchayat periods.<sup>7</sup> We will refer to the 2006 survey as the “present” Panchayat and the 1999 survey as the “previous” Panchayat.

Table 1 provides information on sample size, village, and household characteristics. The average number of households in these villages is currently 700 having grown by 12.46% since 1999. Foster and Rosenzweig (2004) citing the 2001 census point out that REDS villages are on an average larger in terms of household population compared to an average village in India.

### **Table 1 about here**

Average household size shrunk by nearly 16% and the average age of household head increased by 3.5 years. Household heads are (marginally) better educated than previously and the proportion of girl children that attending schools has gone up by 30%. While overall poverty declined by 18.3%, the magnitude of the ultra-poor increased significantly (though representing only 3% of all households). The proportion of poor declined by 25.8% while that of the affluent increased by 22% (the magnitude of non-poor rose by 3%). Village welfare as represented by the poverty head count is rising. There is approximately 1 adverse village-wide shock per year

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<sup>7</sup> One Panchayat period is approximately 5 years and starts with the election of the Pradhan. Since both the village and listing were completed by the end of 2008 we are able to cover two Panchayat periods in 230 out the 241 villages. A Panchayat is an administrative unit and encompasses two or more villages. These villages act as wards-a lesser administrative unit-for the Panchayat.



in each Panchayat period and the number of household level shocks experienced by households is about the same. Inherited wealth (including land) has gone up by 26.71%. This could be attributed to the strengthening of inheritance laws during this period (Deininger et al 2013).

Per capita Panchayat expenditures on various schemes and public goods have changed. Consistent with the policies of the central government growth in per capita welfare expenditures (tied resources) has been the highest (77.5%) and the average number of centrally sponsored schemes per village now stand at 14 – a growth of nearly 15% over the two Panchayat periods. Untied funds transferred to Panchayats and spent grew by 30.36%. public goods expenditures have grown by a mere 0.48% it is concerning that expenditures on agricultural programs has declined by 48.6%. Thus households now have access to significantly larger financial resources that were previously unavailable – and not necessarily related to or derived from productive activity. If selection and participation in WP is constrained by Jati, then households could resort to second best strategies such as IBV wherein voting particularly in local elections is determined by the Jati of the candidate.

There has been gender based regime changes in Panchayats (those not reserved for women) as a result of elections.<sup>8</sup> 26% of all villages have now elected a female Pradhan in place of a male and, 22% of unreserved villages have a male Pradhan in place of a female. We conjecture that this is a result of political reservations for women. Deininger et al (2014) have shown that the quality of governance, particularly in matters such as beneficiary selection, is better in such villages. We hypothesize that reduction in agency costs brought about by reserving the post of Panchayat president for women should minimize the tendency of households to undertake IBV in order to be able to participate in WP.

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<sup>8</sup> Under the 73<sup>rd</sup> Amendment to the Indian Constitution 33% reservation for women is mandated and the Panchayats are randomly selected

To a lesser extent, there were changes in the political regime leading to Jati congruence (where the Jati of the candidate was the same as that of the majority Jati). There has been a significant degree of political interference, and dynasties are important. 19% of all Pradhans belong to the same family. 86% of all Panchayats have Pradhans and ward members who have received support from political parties or were sponsored by these parties.

We find two significant improvements in indicators of quality of governance. The number of GS meetings increased by 46% and attendance in such meetings is quite high (88.2% of all members in the village having attended at least 1 meeting-a growth of 16.6% from the previous Panchayat). It is worth exploring whether such increased rates of participation or increases in number of meetings are indicative of improved quality of governance or, an outcome of IBV. If GS participation leads to capture of benefits then IBV in a subsequent Panchayat period will result in a continuation of capture of benefits through GS participation which then cease to be tools of engendering good governance.

The profile of elected representatives for two Panchayat periods in different types of Panchayats is shown in table 2. Two features about elected women representatives stand out. First, up to 12% of all Panchayats that have never been reserved are now held by women (though there is a non-significant decline in this magnitude during the current Panchayat). Second, the percentage of Panchayats (reserved for women) with illiterate female representatives (Pradhans) is currently 38%, representing a 9% increase from the previous Panchayat. During the same period, the percentage of similar type of Panchayats in which female elected representatives had at least a primary school education has shown an increase of 10% (nearly 42% of all current Panchayats reserved for women have such elected

representatives).

**Table 2 about here**

Both the candidates and the elected members of the Panchayats received support from the broader caste (SC/ST/OBC among others) and narrower Jati-based groups from both within and outside the villages and Panchayat. Political influence in the local elections is pervasive and rising. A majority of elected representatives own land with more than 20% of all Pradhans owning more than 2 acres of land.

Such statistics suggest that WP, although administered through the Panchayats, may apportion benefits along the lines of Jati, political affiliations or wealth. Therefore, if households need to benefit from WP by being selected into these programs, they need to become associated with one of these groups.

Table 3 shows summary statistics on the determinants of voting decisions. The growth in IBV for the position of the Pradhan is 43.9%, i.e., the number of household members who stated that the Jati of the candidate (for the position of Pradhan) was the primary determinant for voting has grown by 43.9%. The corresponding figure for the ward members is 27.8%. These figures declined for elections to state legislatures and central Parliament. Based on the growth in both, the number and monetary magnitude of the WP, and the responsibility devolved to the Panchayats to administer them, one can conjecture that (given the status of devolution of powers to Panchayats), households trying to access these programs are likely to adopt second best strategies.

**Table 3 about here**

Table 4 indicates that 64.05% of households all members voted based on identity. This not only increases the chances of a candidate of their choice (and preferred identity) getting elected, but also maximizes a household's chances of participation in welfare programs. Thus, much intra household strategizing takes place before voting and voting decisions (for the most part) may not be an expression of an individual's right and rather be an expression of a collective preference of households.

**Table 4 about here**

Since IBV could have significant economic outcomes (and other positive externalities) for households belonging to specific groups, such voting may become a village wide strategy adopted by all households and in all types of Panchayats. We are not able to find evidence of this although Table 5 shows that households belonging to Jatis whose population within the village is marginal are increasingly voting based on identity.

**Table 5 about here**

**3. Empirical strategy**

***3.1 IBV and Capture of Program Benefits***

Reservations to the position of Pradhan and ward members have been implemented to empower marginalized groups and have led to an improvement in the quality of governance, purportedly through a reduction in agency costs. The literature on the effects of reservations – in particular for women – on governance is extensive and shows that specific dimensions of governance have improved<sup>9</sup>.

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<sup>9</sup> See, for example, Beaman et al (2009, 2012), Chattopadhyay and Duflo (2004), Besley et al (2005), Iyer et al (2010), Krishnan (2007), Ban and Rao (2008) and Deininger et al. (2014).

However, the extant literature does not test whether improved quality of governance reduces the possibility of seeking private benefits concurrent to any impact of second-best strategies such as IBV. If the benefits of improved quality of governance are perceived to not accrue to all segments of the population, then certain members and groups could engage in strategies such as IBV to capture private benefits.

Reservations in favor of women are randomly assigned to villages while reservations based on caste or tribe depends on population shares of the respective groups. Random assignment implies that OLS regressions of the outcome variables against a reservation dummy for women and controls will yield unbiased and consistent estimates of the impact of 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

$$Y_{ivt}^j = \beta_v^j + \beta_1^j R_{vt} + \alpha_2^j R_{vt-1} + \delta^j \sum_{t=1}^2 R_{vt} * D^F + \gamma^j \sum_{t=1}^2 R_{vt} * D^F * IBV_{it} + \beta_2^j X_{ivt} + \beta_3^j D_t + \varepsilon_{ivt}^j \quad (1)$$

Where  $Y_{ivt}^j$  is the outcome variable of interest,  $\beta_v$  denotes a village or state fixed effect,<sup>10</sup>  $R_{vt}$  is a dummy for reservation (for women) of the Pradhan position,  $X_{ivt}$  is a vector of household and individual characteristics,  $D_t$  is a vector of dummies for GP terms,  $D^F$  is a dummy for females and  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$  are parameters to be estimated. Interaction dummies are introduced to explore the outcomes for a specific group (women), and explore the impact of IBV adopted by such groups.

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<sup>10</sup>For the regressions where data from multiple Panchayat periods are available, we use village fixed effects.

We use two outcome variables associated with program implementation: problems faced and resolved by households relating to: (a) beneficiary selection, and (b) seeking government benefits. Deininger *et al* (2014) show that political reservation for women leads to empowerment of women and other groups enabling members of such groups to raise complaints with elected representatives in GS meetings etc. However, the ability of getting problems resolved when raising complaints is insignificant. We also need to know whether disadvantaged groups were able to approach these elected representatives on account of revealed IBV. Are only those women who voted based on the Jati of the elected representatives approaching these representatives? Do such groups face fewer problems? Even though there are improvements in governance, do vulnerable groups need to resort to such ethnic capture? If the effects of reservations are persistent, then are the effects of IBV in reserved Panchayats diminishing? There are no answers to such crucial questions in the extant literature. We provide these by using both political reservations and the interaction of IBV with political reservations as explanatory variables across time periods.

### ***3.2 Private Benefits: IBV and Economic Outcomes***

We posit that changes in IBV, consumption growth and program participation are jointly determined and endogenous to each other. Therefore, a three stage estimation strategy is adopted presuming the existence of a linear system of  $M$  equations with jointly dependent and predetermined variables. The distribution of the disturbances is assumed 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 (Fiebig and Kapteyn, 1981).

#### *3.2.1 Estimating the Determinants of IBV*

Village level factors influencing IBV include the nature of devolution of powers that could affect the nature of access to WP; household specific factors include the nature of social

networks that exist in the village, association of the given household with this social network, Jati of the household and of the candidate for elections, and the extent of “pooling” of voting behavior within a household.

The strength of social networks for a household in the village is:<sup>11</sup>

$$CI_{1i} = SI_i / 9 \quad (2)$$

Where  $CI_{1i}$  is a social network index of household  $i$  and  $SI_i$  is the number of households of the village identified by household  $i$  as belonging to the same Jati, who can be relied upon for mutual insurance and social support.  $CI_{1i}$  measures the cost (e.g. reduced access to WP, private benefits) of breaking the network. When  $CI_{1i}=1$  household  $i$  will rely on households that belong to its own Jati for mutual insurance. The index rises with an increase in the cost of leaving the network.

If the impact of governance is uneven, then information asymmetries are created. Different groups of households or even different households have various levels of information of WP, access, grievance redressal etc. This prompts the creation of an information network, often based on Jati, for households. We compute the information index as follows<sup>12</sup>.

$$CI_{2i} = SJ_i / 34 \quad (3)$$

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<sup>11</sup>Each respondent at the time of listing was asked three sets of questions. “identify 3 households in descending order of preference from this village from whom you can borrow money during times of a family medical emergency”, identify 3 households from whom you can borrow vegetables in case you need them for cooking” and, identify 3 households whom you wish to be your immediate neighbor”. The index is constructed using 9 possible responses from each household.

<sup>12</sup>A total of 34 items (including information on health, education, employment, WP, credit, marketing channels, prices, extension, social issues, and local and national politics) were identified on which a household member will seek information. Such information can come from members of own Jati within the village or any other household at random.

Where  $CI_{2i}$  is the information network index and  $SJ_i$  is the number of households of the same Jati that can be relied upon to provide information on a range of issues such as healthcare, education, conflicts, access to WP etc. The maximum number of items that households in these villages seek information on is 34. If  $CI_{2i}=1$ , then the source of information for household  $i$  is originating entirely from a network based on its own Jati and, consequently, the cost of leaving such a network will be larger.

Both  $CI_{1i}$  and  $CI_{2i}$  are measures of costs which would arise if a person were to lose the network and uniquely identify changes in IBV. Preferences for membership in such networks are inherited by the households and therefore are exogenous.

Two other identifiers are used to estimate changes in IBV. IBV could be the result of uneven governance<sup>13</sup>. Devolution of powers is exogenous to the village and the Panchayat hence these indices can uniquely identify IBV. The village and the Panchayat receive three types of grants; viz., labor generating, social welfare, and untied (Block) grants. A simple averaged index that measures the extent of autonomy for each of these three grants is constructed. One index measures the extent of autonomy over the use of untied grants, and the other two indices measure the degree of autonomy the Pradhan has over beneficiary selection with regard to employment-generating grants and non-employment generating social welfare grants. *A priori* if the Pradhan has powers over say, beneficiary selection, this could lead to discrimination in selection and, consequently, the households could engage in IBV to elect a Pradhan from their own Jati (tested using the impact of regime change leading to Jati congruence) which would

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<sup>13</sup> We define uneven governance as an outcome where, the impact of good governance is not felt equally on all households. For example, beneficiary selection could be along parochial lines if there is information asymmetry.



minimize discrimination. We can thus measure the elasticity of IBV with respect to increased autonomy.

We estimate change in IBV as:

$$\Delta IBV_{it} = a_0 + b_1 CI_{1it} + b_2 CI_{2it} + c_1 \Delta RC_3 + d_1 S_{it} + \alpha_i A_i + \varepsilon_{it} \quad (4)$$

$$\Delta NOIBV_{it} = a_0 + b_1 CI_{1it} + b_2 CI_{2it} + c_1 \Delta RC_1 + c_2 \Delta RC_2 + c_3 \Delta RC_3 + d_1 S_{it} + \alpha_i A_i + \varepsilon_{it} \quad (5)$$

Where,  $\Delta IBV_{it}$  is change (across two Panchayat periods) in the number of households who engage in IBV during local elections, and  $\Delta NOIBV_{it}$  is the change in the number of households who do not engage in IBV during local elections,  $CI_{1it}$  is the social network and  $CI_{2it}$  is the information network,  $\Delta RC_1$  and  $\Delta RC_2$  are the regime change indicators associated with gender of the Pradhan (the former indicates male to female, and the latter female to male),  $\Delta RC_3$  is the regime change associated with the Jati of the Pradhan (this is the measure of Jati congruence),  $A_i$  refers to the autonomy indices for degree of autonomy over beneficiary selection for employment-generating grants and non-employment generating grants, and degree of autonomy over use of untied (Block) grants.  $S_{it}$  is the vector of all the other explanatory variables such as predicted participation in GS meetings<sup>14</sup>, support from political parties, whether candidate was standing for re-election etc.

### 3.2.2 Change in Participation in Welfare Programs

Change in number of WP participated in is estimated as follows.

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<sup>14</sup>If participation in GS meetings removes information asymmetries then the coefficient should either be negative or at worst be insignificant. A positive coefficient implies that such meetings are avenues of capture of information and formation of cliques.

$$\Delta WP_{it} = \pi_0 + \varpi_1 \widehat{I}_{it} + \tau_1 P_{it} + \gamma_m D_{mit} + \mathcal{G}_{it} \quad (6)$$

Where,  $\Delta WP_{it}$  is the change in the number of WP participated in by the households,  $I_{it}$  change in the proportion of households members of a household voted based on identity during local elections (predicted from (4)),  $P_{it}$  is a dummy for households where all members voted based on identity, i.e. complete pooling,  $D_{mit}$  is a vector of variables that includes, IBV interacted with political reservations for women, political reservations for women, poverty status, growth in untied resources and growth in the number of WP. The unique identifier for this equation is the change in the number of WP in the village.

To fully test for the impact of IBV on program participation, we use a 3-stage least squares seemingly-unrelated regression for estimating equations 4, 5, and 6 jointly. This enables us to compare the change in program participation for households that voted based on identity and those that did not. Additionally, testing the impact of a regime change leading to Jati congruence is carried out by comparing IBV and non-IBV households.<sup>15</sup>

With poor targeting, households need to evolve strategies to gain benefits of enhanced financial devolution. If there are gains from IBV then a significant source of household economic welfare will be its Jati identity/membership in groups defined by Jati. Households may pool their voting strategies to maximize such gains.  $PI_t$  captures the effect of vote pooling by households.

### 3.2.3 *Estimating Change in Per Capita Consumption*

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<sup>15</sup> We make extensive use of derived estimates (predicted values, linear combinations of coefficients etc.) to disentangle specific effects of IBV.

Change in household's economic welfare is measured by changes in its per capita consumption (PCC) estimated as:

$$\Delta PC_{it} = \alpha_0 + \alpha_1 \Delta \widehat{W}_{it} + \sigma \Delta \widehat{W} P_{it} + \beta \Delta I_{it-1} + \lambda_k X_{kit} + \mu_{it} \quad (7)$$

Where,  $\Delta PC_{it}$  is the change of PCC expenditure,  $\widehat{W}_{it}$  is predicted wealth,  $\Delta \widehat{W} P_{it}$  is the predicted change in program participation (from (6)),  $\Delta IBV_{it-1}$  is change in IBV from two periods ago to the previous period,  $X_{kit}$  is a vector of exogenous variables including public expenditures on agricultural programs, village untied grants, village level shocks, household level shocks, education of head of the household and, change in household size, and other household characteristics.  $\mu_{it}$  is the random error.

The unique identifier for this equation is the predicted changes in household wealth. Change in wealth is predicted using the method for predicting household splits as in Foster and Rosenzweig (2004)<sup>16</sup>.

## 4. Results

### 4.1 IBV and program capture

The first two columns in table 6 describes the impact of IBV by women on whether they were adversely affected by the non-receipt of all benefits due under the WP and adverse beneficiary

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<sup>16</sup>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.

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

Where,  $i$  indexes households,  $j$  the variables and  $t$  is time,  $\Delta W_{it}$  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 the period (1999), dummies for whether father is co-resident at beginning and at end of the periods (1999 and 2006), dummies for whether both brothers and sisters are co-resident at the beginning and end of the period (1999 and 2006) and,  $v_{it}$  is the error term.

selection. In currently reserved Panchayats, problems in seeking benefits are 10.6 % lower, with no clear impact on problems related to beneficiary selection. For both types of problems, females in currently reserved Panchayats reported significantly lower levels than men by 20.8 and 11.8 %, respectively. If women practiced IBV in the previous elections, reporting of all types of problems are even lower, as indicated by the marginal impacts of IBV for women reporting these problems.

**Table 6 here**

For resolution of problems related to benefits under government schemes and adverse beneficiary selection, outcomes for both men and women are significantly better in Panchayats currently reserved for women (by 21 and 14.2 % respectively), and more so for women than men. Across problem types, the coefficients of the three way interaction of reservation, being a female, and IBV are highly positive and significant, suggesting that IBV has its strongest impact for women when the Panchayat is also reserved for women.<sup>17</sup>The highly significant marginal effects of IBV for women in reserved Panchayats (particularly in the case of problems solved by officials relating to entitlements under government schemes) point towards IBV being effective in capturing benefits due under government schemes. Groups that engage in IBV can then ensure that elections go a specific way and that their problems are consistently better resolved. Since IBV has significantly impacts outcomes germane to income generation at the household level viz., problems associated with seeking benefits and targeting, it appears to be a mechanism by which households can capture the implementation of the program as well.

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<sup>17</sup>Deininger et al (2014) find that the impact of such reservations on problem solving by elected representatives is still insignificant.

Political reservations have impacted vulnerable groups such as women disproportionately. Thus, in Panchayats that are currently reserved, women were affected 20.8% less compared to all others in these and other villages when it comes to receiving all the benefits under WP. This is not the case for beneficiary selections where women have significantly benefitted over time compared to other groups.

Are there long-term benefits of political reservations for women as in Deininger et al. (2014)? Tests for the long term effects of political reservations on such problems ( $\beta_1 + \beta_2 = 0$ ) show that over time there will be improvements accruing to households with respect to receiving all benefits due to them from WP. However, despite reduction in agency costs relating to governance<sup>18</sup> brought about by reservations, women stand to gain significantly from IBV. In view of the long term impact of reservations, it becomes critical to understand whether the impact of IBV also persists over time. If reservation effects are indeed persistent, then IBV as a short-term strategy should imply that its effects are diminishing over time.

Table 6 shows that women stand to gain substantially when they do IBV in the context of reservations, and that this impact persists over time. In the case of beneficiary selection, IBV by women in currently reserved Panchayats reduces problems by 9% and in the case of receiving all the benefits under the WP are reduced by 6%. However, the impacts of IBV that persist over time are those related to efficient problem resolution: staying with WP benefits (beneficiary selection). This indicates that IBV across Panchayat reservation periods improves problem resolution from 9% (8.4%) to 16% (10%). Further, generally the benefits of IBV

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<sup>18</sup>We find that a significant number of households who are participants in WP do not receive all benefits due to them. Table 6.1 shows that in villages that are currently reserved such problems are 10.6% less compared to the situation in unreserved villages.

persist (e.g. both  $\alpha_1 + \alpha_2 = 0$  and  $\alpha_1 + \alpha_2 = \beta_1 + \beta_2$  are rejected). Households doing IBV in the previous period therefore repeat their strategy to sustain their capture over program implementation. Such households can thus ensure a continuous stream of private benefits after the lapse of reservations and benefits of such repetitions become magnified.

While political reservations could improve the quality of governance on average, the evidence that the benefits of such improvements could accrue to all, is weak. With political reservations certain, vulnerable groups are better off than others and better off than before. These vulnerable groups may use IBV to augment benefits made available to them under political reservations (Pande, 2003). Hence, if IBV helps in overcoming some of the problems of governance related to the administration of WP, then it is expected that such a strategy will help achieve greater participation (albeit at the risk of program capture at the institutional level). Since participation in WP leads to consumption growth and, consequently, improves the economic welfare of households, IBV is likely to become the norm in the context of problems related to governance in general and specifically germane to beneficiary selection, and transfer of welfare entitlements.

#### ***4.2 Private benefits of IBV***

Results of our 3-stage estimation are shown in Table 7. The  $\chi^2$  statistics are significant suggesting that the variables in each equation are jointly significant. The Hansen-Sargan statistic indicates that the equations are over identified and jointly determined. We see that the change in participation in WP for those who practiced IBV is 22% while it is only 1% for those that did not. Increased participation due to IBV also contributes to growth in consumption by 6%.

**Table 7 here**

*4.2.1. Determinants of IBV*

Higher costs of leaving networks as measured by both cost indices trigger IBV. These coefficients are small, but strongly significant. The impact of social network is slightly larger compared to information network. If households derive benefits from membership in Jati-based social networks then it is quite likely that they will want to elect Pradhans who will maximize the benefit of such networks.

Two other findings deserve emphasis. The incidence of IBV drops by 1.7 % with increased participation in GS meetings (a sign of better functioning democracy). Deininger et al (2014) show that increased participation in GS meetings is a means to access critical information regarding programs and reduce reliance on informal sources of information. The negative coefficient of attendance in GS meeting could therefore mean that voters who participate in such meetings are more empowered and therefore have less need for resorting to IBV. Table 8 reflects this finding, where a seemingly-unrelated regression (SUR) analysis shows that participation in GS meetings in fact raises the incidence of non-IBV significantly.

**Table 8 here**

One could also conjecture that GS meetings are a means for the Pradhan to improve the power of their own coalition.<sup>19</sup> Such participants could be less likely to vote in local elections. Our data shows that 6% of households who attended GS meetings and whose Jatis were similar to that of the Pradhan opted out of local elections (but did not do so for elections to the state and

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<sup>19</sup>This conjecture is not borne out. It can be inferred from the results that the distribution of benefits are not necessarily equal. They tend to get more equalized if households engage in strategies such as IBV. However as we will see later the impact of participation in Gram Sabha meetings seem to provide negligible private benefits to households in the form of increases in consumption.

central governments). This finding suggests that such meetings themselves might be accessories to parochial provision of benefits. However, the finding that participation in GS meetings reduces the need for IBV is not necessarily an indicator of poor quality of governance. We have already seen that even under conditions of improved governance (political reservations for women) IBV puts groups engaging in such strategies at an advantage. This is further evidence that such strategies are aimed at capturing institutional mechanisms related to grievance redressal to augment private benefits.

The other finding that reflects conditions inimical to the mandates of the 73<sup>rd</sup> amendment is the presence of significant outside support from political parties. If there is political interference in the election of the Pradhan or in allocation of resources then transfers that Panchayats receive could be entirely driven by political motives rather than any local developmental considerations.

An indicator of this is the finding of greater autonomy over use of grants having mixed impacts on the incidence of IBV. While providing greater autonomy (or reducing political interference) may spur greater IBV, other impacts are not statistically significant. Voting choices may reflect a leader who may use local funds along narrow parochial lines, but we are not able to find clear evidence of such behavior.

#### *The effect of regime change leading to Jati congruence*

In view of reflecting greater local preferences, regime changes can be both “positive” and “negative” i.e., elections that lead to the election of a Pradhan of the same Jatis the voter bring about a positive change. A regime change leading to Jati congruence (in the previous period) appears to raise incidence of IBV by 5%; results from table 8 reveal that regime change leading



to Jati congruence increases incidence of IBV by 14% compared to non-IBV choices. This is particularly significant for any reforms aimed at the Panchayati Raj Institutions (PRI) or electoral processes at Panchayat level. If most of the WP are to be targeted at households using elected representatives then, these findings suggest the likelihood of specific groups (often defined by Jati vote) getting increased and continued access to the benefits.

#### *4.2.2. Determinants of Change in Participation in Welfare Programs*

We find that political reservations do not necessarily lead to large increases in program participation. We know that IBV impacts interact significantly with political reservations. In view of the positive impacts of IBV in Panchayats reserved for women, it is possible that the environment under political reservations encourage IBV. Thus, reservations aimed at improving the quality of governance and of the political process have not necessarily yielded all expected<sup>20</sup> results.

A second key result is that growth in the number of village level programs increases the change in participation in WP by 2.4%. While by themselves increases in specific programs have no impact on the change in participation (results not reported) in WP, households that practice IBV are able to take advantage of these increases. Growth in village level programs under untied funds and WP (conditioned on IBV) lead to a 2.3% increase in the change in program participation, compared to those that did not do IBV. To the extent that this can be interpreted as an attempt to capture private benefits through a democratic process, it is a cause for concern

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<sup>20</sup> If the intent of policy is to improve participation of women, and resolution of problems, then the IBV is a successful second best strategy of the women to achieve this policy intent.

since these programs are designed for all classes<sup>21</sup> of households and the benefits should not be derived through strategies like IBV.

#### *IBV vs. non-IBV impacts on program participation*

By using SUR analysis, we are able to compare the impact of IBV on change in program participation through derived estimates. Households that voted based on identity participate 18% more in programs when compared with households that did not vote based on identity. This is in line with the idea of funneling program benefits towards parochial groups. The significant difference in program participation (growth) between these two strategies adopted by households shows that households resorting to IBV take part 21% more (derived estimates from table 7) in WP than those households that did not.

A third result (though not directly related to policy) is that households are increasingly voting as a unit (pooling). While pooling strategies for IBV by themselves appear to have no direct impact, we find that households where all members did IBV had 16% more predicted program participation than those that did not (derived estimates from table 7).

#### *4.2.3. Determinants of Change in PCC*

If households continue to engage in IBV even after reservations lapse then benefits are perpetuated.<sup>22</sup> Nagarajan *et al.* (2014) have shown that IBV is a significant predictor of households escaping chronic poverty. Households engaging in IBV are less vulnerable and are therefore increasingly likely to transit out of poverty since IBV increases expected

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<sup>21</sup> We also find that poor households improve their access to WP by engaging in IBV, though the (statistically significant) effect is not large.

<sup>22</sup> We posit that if there are changes to the quality of governance after the period of reservations lapse then IBV can help households to overcome such adverse changes.

consumption. In order to understand the pathway of these impacts, we posit that IBV leading to increased participation in welfare programs raises expected consumption.

We find that participation in WP significantly raises PCC by 11.5%. This completes the link between change in IBV and changes in PCC via program participation: a household engaging in IBV participates in 21% more programs than those who did not do IBV, which in turn leads to approximately 6% growth in predicted consumption (see bottom panel of table 7). To show that there are indirect effects of IBV driving changes in consumption, we see that a change in IBV lagged by two periods into the past leads to a 3.7% increase in PCC. This suggests that persistent IBV is beneficial to households, and that IBV has strong impacts on PCC via program participation.

Under pooling IBV significant raises predicted consumption growth. Households that voted strategically as a unit had 5% higher predicted consumption growth than those that did not. Taken together with the strong impact of pooling IBV on WP participation, it is evident that pooling of votes is an important strategy that offers strong private and public benefits to households. These findings reflect a number of feedback effects between IBV, increases in PCC and increases in participation in WP.

Further, increases in expenditure on government programs will spur growth in PCC. Thus, if agricultural programs contribute to an increase in agricultural productivity, increased expenditure affects income leading to growth in consumption by 1.3 %. Since income drives consumption, increases in expenditure over government programs as well as untied grants to the Panchayat will help for all of these and lead to increased incomes (consequently consumption) either directly or indirectly through mechanisms like growth in agricultural and labor productivity.

The impact of increased participation in GS meetings on PCC growth is small but significant. This may be on account of greater GS participation leading to collective (rather than private) benefits that accrue to all members<sup>23</sup>. As mentioned previously, exit from poverty via GS participation is only possible if such participation leads to increases in expected consumption through improved access to information on and access to WP.

## **5. Conclusions**

We have seen that households and citizens use IBV as a second best solution to overcome the pathologies associated with decentralized system of governance and align themselves with leaders who grant them preferential access to WP, and therefore obtain private benefits. The results show that IBV enables greater household participation in welfare programs and ultimately higher consumption. There are thus significant benefits in terms of program participation for households that indulge in IBV compared with those households that do not. In many ways, this extends the findings of Munshi and Rosenzweig (2008) to show that households engage in IBV to bring about caste equilibrium and gain private and public benefits from doing so.

We also find several factors affecting the adoption of household voting strategies based on identity: a regime change leading to Jati congruence, a candidate supported by a political party, and information gathered from existing Jati networks raised incidence of IBV among households. Even more nuanced strategies are in the form of ‘pooling’ of household votes, which raises predicted program participation and consumption growth.

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<sup>23</sup>The positive impact of GS meetings on incidence of non-identity-based voting (in table 8) suggests that GS meetings are not being used to capture private benefits.

This underscores the idea that the current system of decentralization interacts with ethnicity-driven voting to enable households to capture public and private benefits. Growth in autonomy over use of unrestricted grants has a positive impact on the incidence of IBV among households, implying that greater devolution of finances may be being used along narrow parochial lines. Even in reserved Panchayats (where quality of governance improves) there is greater likelihood of obtaining private benefits via IBV (particularly in the case of beneficiary selection and availing entitlements under government schemes).

Such behavior points to the significant shortcomings of devolution of powers as mandated by the Constitutional Amendment. It also suggests that the propensity to capture programs and gerrymander the mandates by the local governments is quite high. Enhanced access to WP need not be obtained via such second-best strategies, since there are several policies that can efficiently guarantee equitable access. The need to engage in parochial politics can be reduced by making Panchayats more accountable to its citizens via a transparent process of governance (and provision of public goods). One example of raising accountability is creating a citizen's charter (or manual) that describes in detail the services offered by the Panchayat and their responsibilities in providing access to public services such as healthcare and schooling. As long as policy does not identify households as beneficiaries and instead focuses on economic, social, or ethnic groups, such behavior will persist.

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## References

- Aidt, T. S., Dutta, J. 2004. Strategic consensus. *Journal of Mathematical Economics*, 40(3), 227-245
- Alesina, A., Spear, S.E. 1988. An overlapping generation model of electoral competition. *Journal of Public Economics*, 37, 359–79
- Ban, R., Rao, V. 2008. Tokenism or agency? The impact of women's reservations on village democracies in south India. *Economic Development and Cultural Change* 56(3), 501–530.
- Banerjee, A., Iyer, L. 2007. Public action for public goods. National Bureau of Economic Research, Inc, NBER Working Papers: 12911
- Banerjee, A., Pande, R. 2007. Parochial politics: ethnic preferences and politician corruption. BREAD Working Paper No. 152. July 2007.
- Banerjee, M. 2014. *Why India Votes*, New Delhi: Routledge.
- Bardhan, P., Mitra, S., Mookherjee, D., and A. Sarkar. 2009. Local democracy and clientelism: implications for political stability in rural West Bengal. *Economic and Political Weekly* 44(9), 46-58.
- Barenboim, I., Burstyn, L. 2008. Does education win elections? *mimeo* Harvard University, 1–50.
- Beaman, L., Chattopadhyay, R., Duflo, E., Pande, R. and P. Topalova. 2009. Powerful women: does exposure reduce bias? *Quarterly Journal of Economics* 124(4), 1497-540.
- Beaman, L., Duflo, E., Pande, R. and P. Topalova. 2012. Political reservation and substantive representation: Evidence from Indian village councils. *Paper presented at the 2010 India Policy Forum*. New Delhi: National Council of Applied Economic Research.

Besley, T., Pande, R., and V. Rao. 2005. Political selection and the quality of government: evidence from South India. Center Discussion Paper No. 921, Economic Growth Center, Yale University

Bhalotra, S., Clots-Figueras, I., Cassan, G., and L. Iyer. 2014. Religion, politician identity and development outcomes: Evidence from India. *Journal of Economic Behavior & Organization*, 104, 4-17.

Caillaud, B., Tirole, J. 2002. Parties as political intermediaries. *Quarterly Journal of Economics* 117(4), 1453–89.

Chattopadhyay, R., Duflo, E. 2004. Women as policy makers: evidence from a randomized policy experiment in India. *Econometrica* 72(5), 1409-43.

De Paola, M., Scoppa, V. and De Benedetto, M.A., 2014. The impact of gender quotas on electoral participation: Evidence from Italian municipalities. *European Journal of Political Economy*, 35, pp.141-157.

Deininger, K., Jin, S., Nagarajan, H., and F. Xia. 2014. Does female reservation affect long-term political outcomes? Evidence from rural India. *The Journal of Development Studies* 18(1), 22-38. doi: 10.1080/00220388.2014.947279

Deininger, K., Goyal, A., and H. Nagarajan. 2013. Women's inheritance rights and intergenerational transmission of resources in India. *Journal of Human Resources* 48(1), 114-141.

Kapteyn, A. and Fiebig, D.G., 1981. When are two-stage and three-stage least squares estimators identical?. *Economics Letters*, 8(1), pp.53-57.

Foster, A., Rosenzweig, M. 2004. Agricultural productivity, growth, rural economic diversity and economic reforms: India, 1970-2000. *Economic Development and Cultural Change* 52(3), 509–42



Franck, R., & Rainer, I. (2012). Does the leader's ethnicity matter? Ethnic favoritism, education, and health in sub-Saharan Africa. *American Political Science Review*, 106(02), 294-325.

Government of India. 2001. *Report of the Task Force on Panchayati Raj Institutions (PRIs)* (2001). Planning Commission, New Delhi: Government of India.

Iyer, L., Mani, A., Mishra, P., and P. Topalova. 2010. *Political representation and crime: Evidence from India*. Draft paper. Washington DC: International Monetary Fund.

Jha, R., Bhattacharyya, S., Gaiha, R., & Shankar, S. (2009). "Capture" of anti-poverty programs: An analysis of the National Rural Employment Guarantee Program in India. *Journal of Asian Economics*, 20(4), 456-464.

Keefer, P. 2005. Democratization and clientelism: why are young democracies badly governed? *World Bank Policy Research Working Paper 3594*, May 2005.

Khemani, S. 2001. Decentralization and Accountability: Are voters more vigilant in local than in national elections? *World Bank Policy Research Working Paper 2557*.

Krishnan, N. 2007. Political reservation and rural public good provision in India. *Discussion Paper Series No.175*. Department of Economics, Boston University

Kudamatsu, M. (2009). Ethnic favoritism: Micro evidence from Guinea. *Available at SSRN 1440303*.

Munshi, K. and M. R. Rosenzweig. 2008. The efficacy of parochial politics: caste, commitment, and competence in Indian local governments, NBER Working Papers 14335, National Bureau of Economic Research. Available at <http://www.nber.org/papers/w14335.pdf>

Nagarajan, H., Binswanger-Mkhize, H.P., and S. S. Meenakshisundaram. 2014. *Decentralization and Empowerment for Rural Development*. New Delhi: Cambridge University Press India.

Pande, R. 2003. Can mandated political representation increase policy influence for disadvantaged minorities? Theory and evidence from India. *The American Economic Review*, 93(4), 1132-1151.

Reinikka, R., & Svensson, J. (2004). Local Capture: Evidence From a Central Government Transfer Program in Uganda. *The Quarterly Journal of Economics*, 119(2), 678-704.

Snyder, Jr., J. M., Ting, M. M. 2002. An informational rationale for political parties. *American Journal of Political Science* 46(1), 90–110.

**Table 1: Sample, village and household characteristics: 1999-2006**

Variables	2006(Approximately the Panchayat)	1999(Approximately the Previous Panchayat)	% change
<b>Sample Characteristics</b>			
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
<b>Household Characteristics</b>			
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
Poverty (Head Count)	24.98	30.60	-18.37
Ultra-Poor: $pce < \frac{1}{2}(pl)$	3.41	1.5	127.33
Poor: $\frac{1}{2}(pl) < pce < pl$	21.57	29.1	-25.88
Non-Poor: $pl < pce < 2(pl)$	52.45	50.9	3.05
Affluent: $pce > 2(pl)$	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
%Members Voted in local election	72.60	67.80	7.08
% Members Voted in higher election	90.47	83.14	8.82
<b>Village Characteristics</b>			
Panchayat agriculture Expenditure (Per capita)	74.64	145.22	-48.60
Panchayat public goods expenditure (Per capita)	77.11	76.74	0.48
Panchayat untied resources (Per capita)	122.03	93.61	30.36
Panchayat expenditures on welfare programs (Per capita)	132.88	74.86	77.50
Regime change (Female to male)	22.75	17.17	32.50
Regime change (Male to female)	26.18	22.32	17.29
Regime change (other Jati to own Jati, previous period)	5.08	-	-
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
Average number of members that attend a GS meeting	88.28	75.69	16.63
Number of GS meetings held	13.33	7.10	46.74

**Table 2: Profile of elected representatives in current and previous Panchayats<sup>24</sup>**

Elected representative's Characteristics	local	Unreserved		Reserved for Women		Caste reservation based	
		Current Panchayat	Previous Panchayat	Current Panchayat	Previous Panchayat	Current Panchayat	Previous Panchayat
<b>Sex</b>							
Male		88.34	87.67	-	-	81.82	88.05
Female		11.66	12.33	-	-	18.18	11.95
<b>Education</b>							
Illiterate		9.68	7.37	38.41	35.00	17.22	20.63
Primary School		33.58	39.17	41.59	37.78	45.85	42.50
Secondary School		37.83	41.01	16.81	20.00	29.25	25.63
Higher		18.91	12.44	3.19	7.22	7.68	10.63
<b>Religion</b>							
Hindu		81.82	80.18	98.34	89.56	93.45	95.00
Muslim		7.33	7.37	0.41	5.49	5.66	1.25
Other(Sikh + Christian + Jain)		10.85	12.45	1.25	4.95	0.89	3.75
<b>Caste</b>							
SC/ST		11.66	11.11	33.03	32.60	-	-
OBC		37.07	43.06	46.68	46.41	-	-
OC		51.27	45.83	20.29	20.99	-	-
<b>Within the village support received from</b>							
Caste groups		84.02	82.92	88.57	85.16	86.25	82.24
Religion based groups		33.33	25.23	16.38	20.88	30.04	28.13
Wealthy person		52.05	43.69	38.86	42.31	39.04	43.75
Identity based groups (either Jati or religion)		89.23	84.93	92.57	87.36	88.75	87.06
<b>Outside support was received from</b>							
Caste groups		31.05	28.00	35.16	30.48	33.13	32.02
Religion based groups		10.50	9.38	5.49	6.67	14.04	10.63
Political party		51.14	44.77	48.35	36.76	45.63	35.09
<b>Land owned</b>							
Landless		38.36	32.07	30.27	37.36	32.44	29.38
0-2		36.07	47.52	49.56	40.11	42.36	48.13
2-4		15.98	9.04	9.03	11.54	8.26	8.75
4-10		7.31	8.75	7.96	7.69	13.64	11.88
>10		2.28	2.62	3.19	3.30	3.31	1.88

<sup>24</sup> Source: Village Schedule

**Table 3: Basis of voting by households in different levels of elections<sup>25</sup>**

Major Basis for vote	Current Panchayat				Previous Panchayat			
	Ward Member	Gram Pradhan	MLA	MP	Ward Member	Gram Pradhan	MLA	MP
Vote based on Jati of the candidate	29.45	36.84	20.09	10.62	23.04	25.6	28.56	22.8
Technical qualifications of the candidate	13.02	15.76	35.34	35.88	13.38	16.39	34.95	35.28
Knowledge of local problems	17.04	16.06	35.01	31.89	26.92	27.28	24.31	21.49
Knowledge of National problems	9.8	9.95	37.68	42.56	9.43	10.36	37.7	42.5
Known for honesty and fairness	12.42	11.91	33.38	42.29	22.33	23.01	27.88	26.77

**Table 4: Magnitude of identity based voting in households**

Identity based voting		
	Current Panchayat Period	Previous Panchayat Period
Total Households	5885	5885
Total number of members of voting age	19603	17774
<i>Identity based Voting<sup>26</sup></i>		
Prop. Of households where all members have voted based on identity (in local elections only)	64.05	60.95
Prop. Of households where all members have voted based on identity (in all elections)	57.31	55.06
Prop. Of households where all members have voted based on identity (Assembly and Parliamentary elections only)	44.31	43.37

<sup>25</sup> Source: household schedule<sup>26</sup> If a household voted based on castes or religion then it is counted as 1 else 0.

**Table 5: Do marginal groups increasingly vote based on identity in the Ward and Panchayat (Pradhan) elections?<sup>27</sup>**

Jati	State <sup>28</sup>	Caste group	% of village population	% of below poverty line	Within group land inequality	% change in votes based on identity			
						Ward	Pradhan	MLA	MP
Velama	AP	OBC	2.71	75.00	0.24	8.82	11.76	-0.73	-0.80
Kamma	AP	OC	1.97	14.29	0.16	0.00	3.70	-0.31	0.00
Ahir	MP	OBC	4.78	37.93	0.84	1.67	6.05	-1.41	-9.23
Kshatriya	MP	OC	2.67	7.41	0.76	18.94	7.96	-	-9.46
Gond	MP	SC/ST	2.21	47.76	0.74	18.74	8.13	-9.30	-
Nai	MP	OBC	1.58	54.17	0.72	1.17	4.07	-3.85	-0.85
Gounder	Kerala	OC	2.06	18.52	0.13	9.85	1.46	-0.32	-9.85
Idiga	KA	OBC	3.24	41.46	0.29	0.00	1.36	-1.30	0.00
Muslim	KA	OBC	1.5	15.79	0.34	15.23	6.59	4.13	-2.45
Teli	MH	OBC	6.14	18.63	0.44	0.00	0.00	-6.01	-
Mana	MH	SC/ST	2.41	32.5	0.52	7.38	4.50	-2.77	-
Gavali	MH	OBC	2.23	64.86	0.39	0.00	1.66	-2.78	-2.78
Ahir	GUJ	OBC	3.73	37.65	0.19	5.64	1.66	-3.87	-
Chamar	RJ	SC/ST	10.5	43.82	0.5	2.77	1.20	0.61	-3.65
Kumhar	RJ	OBC	3.66	38.71	0.56	12.14	2.44	-	-1.70
Suthar	RJ	OBC	1.85	51.06	0.65	17.42	10.00	-	-
Chamar	HAR	SC/ST	7.26	22.92	0.63	5.62	0.27	11.83	17.05
Kumhar	HAR	OBC	2.49	36.36	0.6	15.00	5.91	-1.08	-2.22
Mali	HAR	OBC	2.34	48.39	0.66	22.00	13.42	-2.36	-
Raisikh	Punjab	OBC	6.83	32.89	0.67	5.00	1.54	-19.91	-1.76
Ahir	UP	OBC	12.83	43.23	0.57	5.00	1.54	-4.87	-
Rajput	UP	OC	6.64	37.16	0.72	5.23	6.53	-15.19	-
Jat	UP	OBC	2.77	9.89	0.49	5.23	6.53	-0.35	-0.19
Pasi	UP	SC/ST	1.43	70.21	0.68	2.30	10.73	-2.37	-7.21
Kulhaiya	Bihar	OBC	8.1	75	0.57	0.09	2.47	-6.21	-6.05
Chamar	WB	SC/ST	1.94	48	0.39	20.11	30.21	-7.18	-0.14
Teli	Orissa	OBC	2.13	25	0.52	6.38	4.86	-1.22	-6.42
Bauri	Orissa	SC/ST	1.45	94.74	0.62	0.65	1.20	-1.77	-2.01
Nadar	TN	OBC	6.48	26.42	0.22	3.93	1.57	-3.61	-5.71
Mudaliyar	TN	OBC	3.79	9.68	0.5	9.18	9.18	6.96	6.33
Krishnanvagai	TN	OBC	2.93	45.83	0.23	15.56	22.35	0.35	-9.52

<sup>27</sup>Source: Household Schedule. #positive values show that % vote based on identity has increased while negative indicates decreasing trend over two Panchayat periods.

<sup>28</sup> States includes Andhra Pradesh (AP), Madhya Pradesh (MP), Kerala, Karnataka (KA), Maharashtra (MH), Gujarat (GUJ), Rajasthan (RJ), Haryana (HAR), Punjab, Uttar Pradesh (UP), Bihar, West Bengal (WB), Orissa, and Tamil Nadu (TN).



**Table 6:**

VARIABLES	Affected		Resolved	
	<i>Seeking benefits under govt. schemes</i>	<i>Adverse Beneficiary selections</i>	<i>Seeking benefits due under govt. schemes</i>	<i>Adverse Beneficiary selection</i>
Currently reserved to woman	-0.106* (0.0558)	-0.0724 (0.0480)	0.215*** (0.0618)	0.142*** (0.0507)
Currently reserved*female member ( $\alpha_1$ )	-0.208*** (0.0745)	-0.118* (0.0606)	0.627*** (0.0744)	0.144** (0.0641)
Currently reserved*female member*voted based on Identity(t-1) ( $\beta_1$ )	-0.552*** (0.135)	-0.574*** (0.110)	1.240*** (0.108)	0.698*** (0.101)
Previously reserved for females	-0.0473 (0.0573)	-0.0908* (0.0538)	0.141** (0.0675)	0.0468 (0.0571)
Previously reserved*female member( $\alpha_2$ )	-0.225*** (0.0854)	-0.0372 (0.0745)	0.303*** (0.0924)	0.166** (0.0789)
Previously reserved*female member*voted based on Identity(t-2) ( $\beta_2$ )	-0.399*** (0.128)	-0.386*** (0.0981)	0.801*** (0.107)	0.569*** (0.0939)
Constant	-1.367*** (0.225)	-0.580*** (0.176)	-2.350*** (0.273)	-1.205*** (0.190)
LR Chi2	8918.53***	13054.03***	6553.95***	10086.93***
Village fixed effect	Yes	Yes	Yes	Yes
Marginal effect of IBV on women in currently reserved Panchayats	-0.06***	-0.09***	0.163***	0.1***
Marginal effect of IBV on women in previously reserved Panchayats	-0.042***	0.065***	0.093***	0.084***
$\alpha_1 + \beta_1 = 0$	24.36***	30.61***	203.19***	50.08***
$\alpha_2 + \beta_2 = 0$	16.28***	11.67***	59.41***	34.42***
$\beta_1 + \beta_2 = 0$	28.64***	47.16***	207.12***	99.48***
$\alpha_1 + \alpha_2 = \beta_1 + \beta_2$	4.94**	18.05***	27.41***	26.39***
Observations	46652	45991	45853	45825

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



Table 7: Change in per capita consumption with identity based voting

Variable	Coefficient	S.E.
<b>Change in IBV</b>		
Cost index1 (social network)	0.001***	0.0002
Cost index2 (information network)	0.0002***	0.00003
Regime Change (Jati incongruent to Jati congruent)	0.049*	0.026
Predicted Participation in GS meeting	-0.017***	0.003
Candidate Supported by political party	0.034***	0.016
Re-elected Pradhan	0.021	0.02
Autonomy over use of untied grants	0.03	0.04
Autonomy over beneficiary selection (employment-generating grants)	-0.08	0.06
Autonomy over beneficiary selection (social welfare grants)	0.06	0.05
Constant	0.27***	0.05
Chi <sup>2</sup>	331.8***	
<b>Change in participation in welfare programs</b>		
Women reserved in current Panchayat	-0.024	0.017
Women reserved in previous Panchayat	-0.007	0.015
Women reserved in current Panchayat*Identity based voting	0.0014***	0.0003
Women reserved in previous Panchayat*Identity based voting	0.0003	0.0003
Change in proportion of households voting based on identity (current and previous)	0.3***	0.053
Change identity based voting (between previous and period before)	0.044**	0.02
Dummy for households where all members voted based on identity (pooling) ( $P_{it}$ )	0.03	0.068
Poor (2006)* Prop. of household who voted based identity	0.0013***	0.0004
Poor (1999)* Prop. of household who voted based identity	0.0009***	0.0003
Growth in untied resources * Change in prop. of household who voted based identity	0.022*	0.013
Growth in welfare program* Change in prop. of household who voted based identity	0.024*	0.013
Growth in number of village programs	0.024**	0.011
Constant	0.044***	0.011
Chi <sup>2</sup>	707.5***	
<b>Change in per capita consumption</b>		
Change in participation in welfare programs	0.115**	0.051
Change identity based voting (between previous and period before)	0.037**	0.015
Predicted change in wealth	0.09***	0.008
Change in public expenditures on agricultural program	0.013***	0.002
Change in public expenditures on public goods	-0.001	0.002
Change in village untied expenses	0.002	0.002
Change in public expenditures on welfare program	0.002	0.002
Number of village level shocks between 1999 and 2006	-0.001***	0.0002
Change in number of household level shocks	-0.04	0.12
Predicted Participation in GS meeting	0.005**	0.003
Change in household age	0.152***	0.025
Change in household size	-0.44***	0.013
Change in years of education	0.017**	0.008
Constant	-0.0477	0.045
Chi <sup>2</sup>	1917***	
Hansen-Sargan over identification test (chi2)	4015.07***	
Number of observations	5292	
<b>Derived Estimates</b>		
Predicted growth in program participation with IBV - $\theta_{IBV}$	0.22	
Predicted growth in program participation without IBV - $\theta_{NOIBV}$	0.01	
Predicted growth in program participation with pooling IBV ( $P_{it} = 1$ )	0.26	
Predicted growth in program participation without pooling IBV ( $P_{it} = 0$ )	0.09	
Predicted growth in consumption with IBV*Program participation - $\vartheta_{IBV}$	0.06	
Predicted growth in consumption without IBV*Program participation - $\vartheta_{NOIBV}$	0.05	
Predicted growth in consumption with pooling IBV ( $P_{it} = 1$ )	0.1	
Predicted growth in consumption without pooling IBV ( $P_{it} = 0$ )	0.05	
t-test for $\theta$ (program participation growth IBV vs. non-IBV)	0.21***	

t-test for program participation growth pooling IBV vs. non-pooling	0.16***
t-test for $\vartheta$ (consumption growth Program participation*IBV vs. non-IBV)	0.01
t-test for $\vartheta$ (consumption growth pooling IBV vs. non-pooling)	0.05***

**Table 8: Seemingly unrelated regression (SUR) analysis of IBV and non-IBV impacts on program participation**

<b>Change in IBV</b>		
Cost index1 (social network)	0.001***	0.0002
Cost index2 (information network)	0.0002***	0.00003
Regime Change (Jati incongruent to Jati congruent) ( $RC_3^{IBV}$ )	0.043*	0.026
Predicted Participation in GS meeting	-0.017***	0.003
Candidate Supported by political party	0.04***	0.016
Re-elected Pradhan	0.023	0.02
Autonomy over use of untied grants	0.066*	0.04
Autonomy over beneficiary selection (employment-generating grants)	-0.11*	0.06
Autonomy over beneficiary selection (social welfare grants)	0.73	0.05
Constant	0.25***	0.05
Chi <sup>2</sup>	337.92***	
<b>Change in non-IBV</b>		
Cost index1 (social network)	-0.0001	0.0002
Cost index2 (information network)	0.00002	0.00003
Regime Change (Male to Female)	-0.01	0.01
Regime Change (Female to male)	-0.005	0.017
Regime Change (Jati incongruent to Jati congruent) ( $RC_3^{NOIBV}$ )	-0.1***	0.025
Predicted Participation in GS meeting	0.015***	0.003
Candidate Supported by political party	0.035**	0.016
Re-elected Pradhan	-0.03	0.02
Autonomy over use of untied grants	0.13***	0.04
Autonomy over beneficiary selection (employment-generating grants)	-0.2***	0.06
Autonomy over beneficiary selection (social welfare grants)	0.12**	0.05
Constant	-0.011***	0.05
Chi <sup>2</sup>	50.57***	
<b>Change in participation in welfare programs</b>		
Women reserved in current Panchayat	-0.033**	0.015
Women reserved in previous Panchayat	-0.009	0.015
Women reserved in current Panchayat*Identity based voting	0.0015***	0.0003
Women reserved in previous Panchayat*Identity based voting	0.0004	0.0003
Change in proportion of households voting based on identity	0.13***	0.011
Change in proportion of households not voting based on identity	-0.049***	0.01
Dummy for households where all members voted based on identity (pooling) <sup>29</sup>	0.005	0.067
Dummy for pooling IBV*Autonomy over use of grants	0.044	0.078
Poor (2006)* Prop. of household who voted based identity	0.0015***	0.0003
Poor (1999)* Prop. of household who voted based identity	0.0009***	0.0003
Growth in untied resources * Change in prop. of household who voted based identity	0.031***	0.01
Growth in welfare program* Change in prop. of household who voted based identity	0.031***	0.011
Growth in number of village programs	0.03***	0.011
Constant	0.063***	0.01
Chi <sup>2</sup>	632.3***	
Hansen-Sargan over identification test (chi2)	15980.5***	
Number of observations	5327	
<b>Derived estimates</b>		
Impact of Regime Change leading to Jati congruence ( $RC_3^{IBV} - RC_3^{NOIBV}$ )	0.14***	
Change in program participation with IBV vs. non-IBV	0.18***	
Chi <sup>2</sup> test for change in program participation (IBV vs. non-IBV)	147.78***	

Significance levels: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

<sup>29</sup> Growth in the proportion of households where all members have voted based on identity

