

# One Kind of Democracy\*

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## Abstract

This paper explores the performance of rural governance institutions (Gram Panchayats) in Maharashtra, India. The results of a detailed set of household and village surveys we conducted point to a stunningly robust and participatory democratic process: Elections are freely contested, fairly tallied, highly participatory, non-coerced and lead to political representation believed by voters to strongly reflect their will. However, poverty alleviation schemes (one of the main tasks of rural Gram Panchayats) are patchy and poorly implemented. Beneath this veneer of representative democracy we find evidence of deeply ingrained clientelist structures. These allow land-owning elites of a leading caste (Marathas) to maintain political power which they use to undermine poverty alleviating policies that would redistribute income away from them. We explore theoretically the means by which this caste is able to use its dominance of land-ownership and its traditional position of caste ascendancy to achieve political control. The data also allows us to test, both directly and indirectly, differing hypotheses regarding the means by which cultural power (caste) and land ownership yield political power for the elite even in a highly representative, fair and participatory democratic setting.

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# 1 Introduction

There is a fair amount of consensus that successful development depends on the development of the right institutions. By ‘Institutions’, we mean the rules of the game. Has a particular society been a democracy or a dictatorship? If it has been a democracy, what have been the voting rules? Is there universal franchise or only eligibility for property owners or educated elites? For example, a convincing case has been made that the divergence of development paths taken by North and South American societies, may have been due to the development of two different political systems with the elite driven political system in the South doing much worse (Engerman and Sokoloff (2006)). Since we know what type of institutions tend to work well in developed countries, copying them would seem like an obvious solution for developing countries. In this paper, we examine a political system in which the rules of the game are perfectly designed: elections take place regularly, voter turn out is impressive, there is no overt intimidation or violence and yet outcomes seem to regularly favour only the elite. It is an interesting example of how traditional social relations have a long life and how they manifest through a subtle distortion of modern institutions. We believe that the system we are studying here is not exceptional; it is more likely to be common across the developing world.

Understanding variation in institutional performance motivated an extensive data collection program we undertook in rural Maharashtra, India. Our focus was Village Governments (*Gram Panchayats*), and our aim was to understand the factors affecting their variation in performance.<sup>1</sup> These are particularly interesting institutions to study. The formal rules under which they operate are uniform, and it is widely reported that these de jure rules are well respected throughout the state. However, there are marked de facto differences in what these institutions do. An advantage of using Panchayats to explore the slippage between de jure and de facto rules is that, unlike, for example, country comparisons, here we have many observations of institutions operating under the exact same de jure structures. So we have some hope of disentangling reasons for de facto variation.

Gram Panchayats (GPs from now on) are a long-standing institution in village India, well pre-dating Indian independence and the formation of the Indian state. However, they came to prominence as formally powerful bodies only after the passage of the 73rd Amendment Act to the Indian constitution in 1993. This act had a number of consequences that have been well documented in Maharashtra previously: it increased financing of GPs, made GPs responsible for program implementation, and local public good provision, implemented a raft of pro-poor

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<sup>1</sup>Others have studied Gram Panchayats in other states of India. Their focus has mainly been on the impacts of particular characteristics of the leaders on outcomes (refer to Besley et. al. (2004), Besley, Pande, and Rao (2011), and Chattopadhyay and Duflo (2004)).

policies, a regular process of GP elections, overseen by an independent electoral committee, and reserved representation for lower castes, women and tribal groups.

The key results gleaned from our surveys first provide a strong corroboration of previous findings. Democratization has clearly been successful (at least at a surface level). There are indeed free and fair elections that feature high turn-out, contested races, and virtually no instances of coercion that we could find. Moreover, the reservations mandated by the act, and decided by the electoral board are respected.

Despite this, there is much evidence that the performance of these village level governments is generally poor. Scheme implementation is far from universal, with limited activation of poverty alleviation programs, patchy implementation when they are present, rare sightings of the state's employment guarantee scheme (the precursor to India's National Rural Employment Guarantee Act and the largest pro-poor policy in the state budget<sup>2</sup>), and very little formal consultation by the GP with village members.

There seems to be widespread disgruntlement with GP performance amongst constituents. Respondents report power residing in the hands of upper caste and/or large landowners and corruption amongst elected leaders.

It is impossible to understand Indian village politics without taking some account of Caste. Castes tend to organize politically – Munshi and Rosenzweig (2009), Banerjee and Pande (2007) – and in Maharashtra, block voting by castes for particular candidates is widely known to exist. The state is almost unique in the Indian context by the degree to which its politics, particularly in the rural areas, has been dominated by a single caste (Palshikar and Deshpande 1999, Vora 1996). In Maharashtra, the dominant Caste are the Marathas. They are an intermediate ranking group (sub-caste (or *jati*), traditionally from a Warrior Caste), that are both the most populous, and the largest land owning caste in the state.

We find the large variation in policy effectiveness and outcomes at the village level to be highly correlated with the economic power of this caste in a village. Specifically, villages where Marathas are the largest single land-owning caste, are villages where governance seems worst of all: pro-poor policies are rarely implemented, fewer centrally available resources make their way into the village, and GP leaders expend less effort in obtaining resources. But these are also the villages with highest levels of cross-caste cohesion. There seem to be more cases of cross-caste consumption insurance, high levels of social capital (measured in various ways), strong levels of accord in the conduct of village policy, cohesion in the priorities for village governments, and high rates of collective donation (labor and time) to village activities and festivals. Moreover,

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<sup>2</sup> "The EGS in Maharashtra India is the most famous and most successful direct governmental effort at reducing absolute poverty in rural areas...." Ravallion, Datt, Chaudhuri (1991)

these villages are characterized by a puzzling set of economic findings. They tend to exhibit both lower wages to workers but higher productivity on agricultural lands and higher profits reported by landowners.

In a wonderful account of the history of post-bellum South, Ransom and Sutch (1977) described how newly freed former slaves became tenants, and found themselves bound in a threeway relationship with landowners and stores. It was freedom, a welcome freedom and yet a constrained freedom – ‘One Kind of Freedom’. The story we tell here is similar. A modern democracy with liberal principles and well designed rules was imposed on a traditional society. Though a welcome move, it brought democracy – One Kind of Democracy – to the rural population of India, there is still a need to understand how this kind of democracy works.

In subsistence economies, the poor place a huge premium on help during a consumption contingency, for which they are willing to give up substantial long term gains. We believe that the rural elite are able to take advantage of this fact to make modern institutions work in their own interests. The data leads us to the hypothesis that upper caste landlords, through a patron-client relationship that has continued through history, induce their clients (lower caste poorer farmers and the landless who supply the local workforce) to vote in the GP elections according to the landlords’ wishes in exchange for a system of personalized insurance. They are thus able to block the poverty alleviation schemes that are supposed to be a central task of GPs. What is interesting is that the gratitude the clients feel toward their patrons is so internalized that the answers to social capital questions in our survey give a very positive picture of the social relations in the village. Thus, in many ways the context we study has important differences with familiar cases in the literature where also history influenced current economic outcomes.

Most of the well known studies of how history has been responsible for affecting the present course of development emphasize the difference in the institutional design itself or an impact on the level of trust (or social norms) in the society that inhibited collective action and well functioning governance. For example, the seminal study of Acemoglu et al (2001) describes how where the European colonists found a conducive environment to settle, as in the New World, they planted the institutions that had worked so well in Europe, and where the environment was not so conducive, as in Africa, they put in place extractive institutions that were destructive to the subsequent development of those colonies. The areas of Africa from which a greater percentage of population was taken away as slaves, have a much worse record of economic development today; Nunn (2008). Nunn and Wantchekon (2010) suggests that a channel through which this occurred was the breakdown of trust between ethnic groups. Plantation economies of South America gave rise to hierarchical governance structures ran by the elites for themselves neglecting to develop public goods that would have helped the development of human capital of the masses.

Consequently, they fell behind the family farm based economies of North America (Engerman and Sokoloff (2006)). Africa's growth tragedy, it has been argued, has been largely caused by its high level of ethnic diversity that once again was an obstacle to collective action and hence stood in the way of the evolution of well functioning government institutions (Easterly and Levine (1997)).

The work of Banerjee and Iyer (2005, 2010) that analyzes the legacy of different land tenure systems in India is most closely related to our paper. They find that the areas that were characterized by landlordism during the colonial era had lower agricultural investments and lower productivity in the post-independence period than the areas characterized by peasant proprietorship. They suggest: "..... that the key to what happened may lie in the relative inability of the landlord districts to claim their fair share of public investment." The level of collective action in landlord areas was lower than in the non-landlord areas (Banerjee and Iyer (2010)). They conjecture that it was probably a case of elite capture. Had the elite managed to distort the political process in the landlord areas? But in terms of voter turnout and electoral competition, they found that the landlord areas were not different enough than the rest to be able to explain the difference in outcomes. If the political system was manipulated, it was not clear how. This paper tries to shed some light on the questions they have raised. More specifically, we use our household survey as well as GP survey to probe the channel through which the elite manage to control the political process.

We have identified from the existing literature on Maharashtra village politics, two conjectures for why Maratha landlords are more able to achieve this political dominance than lower caste landlords in other villages: (1) their superior social cohesion – a legacy of their long pre-independence dominance of the state and of village politics; and (2) their extensive network of caste-based trading networks. Marathas enjoy access to an extensive state-wide trading network dealing in agricultural inputs, outputs and credit.

We formalize a single model that embeds both sources of Maratha political dominance. Each source predicts different interaction patterns between Maratha population numbers and land-ownership. The model suggests a number of tests of the relative strength of such explanations, as they differ on key observable phenomena. By performing these, we find strong support for the hypothesis based on networks. Maratha landlords are more able to sustain patron-client vote trading relations with workers than other groups of landlords because, in addition to the direct insurance benefits they provide, they also deliver access to the extensive network of Maratha traders that operate throughout the state.

In a way, what we are describing is a case of 'clientelism' - a topic of some interest in political science and anthropology. James Scott (1979) offers a fascinating picture of such a system at work in the agrarian societies of Southeast Asia in his celebrated book. We examine how such a

system can persist through time and adapt itself to modern institutions.

This paper is also related to the recent theoretical work of Bardhan and Mookherjee (2000, 2005, 2006a) who examine the effects of decentralization on the delivery of public infrastructure and anti-poverty programs. They also have done important related empirical work, in another state of India (West Bengal), where they aim to test for ‘elite capture’.(Bardhan and Mookherjee (2006b) Somewhat consistent with our findings here, they find that higher village land inequality and low caste composition of the poor is associated with lower amounts of employment grants spent and lower total GP revenue.

Our paper proceeds as follows. We start with a description of our data collection process. In our main empirical analysis we exploit the historical pre-determination of both Maratha population numbers and landholdings, to trace the relative effects on power deriving from these sources. We discuss these two sources of variation in Section 3. Section 4 provides summary statistics and then regression results are in Section 5. We will see there that Maratha dominance of land ownership plays a key role in providing political control, and that this political power is used to the advantage of the land owning class.<sup>3</sup>

The heart of the paper distinguishes the means by which the Maratha caste’s economic power (land ownership) leads to their political power. Two clientelist hypotheses are suggested and described in Section 6. In Section 7, we develop a formal model of clientelist vote-trading that embeds both explanations. The model’s implications are tested in Section 8, and Section 9 concludes.

## 2 Data

From November 2006 to May 2007, we surveyed 9132 households from a random sample of 300 villages in the state of Maharashtra, which is located on the west coast of central India. Our data are from three main regions: Western Maharashtra, Marathwada, and Vidarbha (we excluded only, the Konkan, the coastal region) To focus on villages which are primarily agricultural (as opposed to factory based or small market towns) and where society is caste based rather than tribal, our criteria for village selection was a total population of 1500-2500 with a tribal population representing less than 10%. Our sample ends up being very poor; 42% are below the state poverty line (where household income is less than 4367 Rs/capita/year, which works out to less than \$1.25

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<sup>3</sup>In comparison, the effects of Maratha population numbers are small and generally insignificant. It could be possible that, as Banerjee and Pande (2007) have argued and found in another Indian state, Uttar Pradesh, this is because Marathas elect lower quality leaders as their numerical dominance increases, so that the greater Maratha interests are less effectively represented as the Maratha population rises. Whether this is true or not, we will argue that the variation in Maratha numbers across villages will be useful in discriminating between alternative potential theoretical explanations of Maratha dominance in what follows.

ppp/day/capita).

We administered questionnaires at the household level, village level, and to the GPs directly. For some information, particularly to obtain the balance sheets of the GPs, we accessed these from the higher level panchayats using the “Right to Information Act”.<sup>4</sup> GPs are obliged to regularly submit these accounts to the higher levels. In Maharashtra, a given GP typically covers a population of approximately 2000. As a result, in our data the GPs are generally village specific.

As discussed in the introduction, the dominance of the Maratha caste in Maharashtra in terms of land control, political alliances, and rural networks of power has been well documented by political scientists (refer to Deshpande 2004). We will see that our data confirms Maratha dominance of the GPs. We aim to understand whether Maratha political dominance stems from numerical and/or economic strength and in turn how this political dominance affects governance outcomes. To this end, we need measures of Maratha numerical and economic power. In the empirical analysis we will use: (1) Maratha population numbers; and (2) Maratha landholdings, both at the village level. We argue in the subsequent section that both of these measures are pre-determined to outcomes today.

### 3 Maratha Dominance

Our empirical strategy, described in detail in Section 5, is to estimate the effects of our two measures of Maratha dominance, their population numbers and landholdings, on various outcomes. In this section we discuss how these measures were obtained, and argue that both of these measures are historically pre-determined.

#### 3.1 Dominance Measures

Our two key dominance variables of interest were primarily collected in the village surveys. These were conducted like focus group discussions, which included key villagers such as members of the GPs and upper level governments as well as school teachers and health care workers. Typically the *Gram Sevak*, who represents the Development wing of the Government is very well versed with all of the villagers since all of the benefit applications go through him. He, or members of the GP, readily provided the population numbers by caste group in the villages. The *Talathi*, who is from the Revenue department, is responsible for keeping and updating all land records. It was typically the Talathi who provided us with a ranking of total land ownership by caste group (at the sub-caste or *jati* level) in the villages. Both the Talathi and Gram Sevak are members of the higher levels of government and do not reside in the villages.

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<sup>4</sup>The Panchayat is a system of governance which has three levels: village (*Gram Panchayat*), block (*Panchayat Samiti*), and district (*Zilla Parishad*).

We can, to an extent, cross-check our two measures of Maratha dominance via other sources. The Census of India provides information on the proportion of the lowest ranked caste groups (SCs) in the village. These proportions match our data very closely. In our household data, we collected information on land ownership. We can thus aggregate this data up to the village level to obtain a measure of land distribution by caste group at the village level. Since only 30 households per village are surveyed, these measures are quite noisy. Nevertheless, if we construct a Maratha land dominance variable from this household level data, it matches our village level data (obtained from the Talathi) for 85% of villages. For those 15% of villages which did not match, the total land ownership of the top two ranked (in terms of land ownership) castes was very close using the household level data. In these cases, according to our village level data, Marathas were typically the second ranked caste in terms of land ownership. In other words, these were villages where two castes were fairly close in terms of their total land ownership, and this explains why the noisy household level data did not match up perfectly to the village level data.

In our main empirical analysis we will use the village level data to construct our measure of Maratha land dominance. All of our results are robust to instead using the alternative aggregate measure constructed from our household level data. We discuss this further in Section 8.

### 3.2 Distribution of Caste Groups

Our measure of the numerical power of Marathas is simply the proportion of the village population that is from the Maratha caste. The first assumption of our identification strategy is then that the relative distribution of caste population numbers is historically pre-determined at the village level, and not the consequence of any of our subsequent outcome variables. We have no direct proof of this assumption since there is no historical information at the village level on caste population numbers. However, at the district level, others have exploited the temporal invariance of caste numbers and used caste composition measures from the historical census information to predict outcomes today (Banerjee and Somanathan 2007). Similarly, using the historical censuses of India (1891 - 1931), we can compare the relative population distribution of Marathas across the districts in our sample to the distribution in our current data. Despite our sampling of only non-tribal rural areas, the historical variation (which is a census) closely matches the current variation found in our data. Of particular note is the virtual absence of Marathas in the most eastern part of the state (East Vidarbha). This part of the state was part of the Central Provinces in colonial times, a region where the Rajput caste were traditionally dominant.<sup>5</sup> All of the empirical results

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<sup>5</sup>The present state of Maharashtra came into being in 1960. The state unites the Marathi speaking people (who have existed for centuries) of India. During the British rule the Marathi speakers were geographically divided between Bombay Presidency, Central Provinces and Berar, and the Nizam's state of Hyderabad (Muslim ruler of the



that we will report are robust to excluding this region in our estimations.

In all districts of our sample, we have village level variation in caste population numbers. In 41% of villages, Marathas form the majority of the population. Variation in caste populations at the village level is the norm in India. Villages are typically multi-caste and rarely identical in either the number of castes or in the numerical strength of each resident caste (Srinivas 1987, Mandelbaum 1970, Marriott 1955). The assumption of time invariant caste distributions at the village level has also been exploited in other states of India (see Anderson (2011) for Uttar Pradesh and Bihar). In general, Indian village anthropological studies reveal significant variation in the distribution of caste groups and that the origins of distributions at the village level extend back hundreds of years (Srinivas 1987, Mandelbaum 1970, Marriott 1955).<sup>6</sup> The early settlement of the original tribes that grew into the prominent caste groups in Maharashtra dates to the 6th century BC (Kosambi 1955). The prominence of Marathas in the region dates back to at least the fourth century AD (Altekar 1927, Kosambi 1969).<sup>7</sup>

In our survey, we asked directly about the historical origin of caste groups in our villages, and more than 95% of the caste groups report to have resided in the village since well before Independence. Still, a concern with this assumption is the possibility of migration in response to contemporary governance and economic outcomes, which would in turn directly alter village level caste composition. At the individual or household level, these concerns are not warranted here, as this is almost unheard of in our sample. Given the strict rules governing hereditary caste rankings, there is virtually no mobility of individuals across different caste groups. Moreover, there is very little migration in India as a whole; see Munshi and Rosenzweig (2005) for an extensive analysis. This seems to be primarily because of reliance on sub-caste networks of mutual insurance that do not seem to cross village boundaries. At the caste level, there is no evidence of large scale migrations that could explain the variation in caste population dominance that we observe today.<sup>8</sup>

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princely state). After Independence (1947) they continued as respective parts of these states until the formation of the bilingual state of Bombay in 1956 (two languages Marathi and Gujarati). The unilingual state of Maharashtra was formed in 1960.

<sup>6</sup>For example, in the case of Palanpur, a village in western Uttar Pradesh, events which took place some two hundred years ago explain the dominance of an upper caste group (Dreze et. al. 1999). Another village level study in northwest Uttar Pradesh dates the origins of present caste composition to more than 600 years ago (Danda 1987).

<sup>7</sup>Basic elements of the village organization, the *balutedari* system, were developed by the fourth century AD. This system was a reciprocal arrangement between the hereditary farming and artisan castes (OBCs in today's classification), service castes (SCs), and the higher landholding castes.

<sup>8</sup>With the exception of the movement of a small population of Brahmins from rural to urban areas in the early 20th century. They are less than 1% of our sample.

### 3.3 Land Ownership of Caste Groups

Our measure of the economic power of Marathas is whether they are the caste group (at the sub-caste or *jati* level) owning the most land in the village (compared to all of the other sub-caste groups). The second assumption of our identification strategy is then that relative land holdings of caste groups are pre-determined at the village level, and again not affected by contemporary governance or economic outcomes.

In our sample, Marathas own the most land in 59% of the villages. Throughout history, Marathas have been the dominant land owners in Maharashtra. Marathas' importance in Maharashtra history dates back to at least the fourth century AD when major chieftainships were under their control (Altekar 1927, Kosambi 1969). Their dominance of landowning extends at least from the fourteenth century to the present day. Prior to independence, under either foreign rule or during their own Maratha empire, Marathas were the dominant land owners.<sup>9</sup> Under both Muslim and British regimes, land was allocated to Marathas by alien rulers for loyalty of members of dominant lineages, and in return for supply of armies (Altekar 1927, Kosambi 1969, Drekmeier 1962, Dahiwalé 1995). During colonial rule, the regions of present-day Maharashtra fell under different administrative units and systems of land revenue collection.<sup>10</sup> However, irrespective of the land revenue system used, Marathas continued to own the large majority of agricultural land. (Refer to the *Imperial Gazetteers of India* reports which document caste land ownership patterns at the district level.<sup>11</sup>).

Upon Independence, Indian states legislated large scale land reforms. In Maharashtra, the Tenancy and Agricultural Lands Act of 1948 placed a ceiling on all landholdings and transferred ownership rights to tenant cultivators. These acts effectively redistributed land from large land owners to their former permanent tenants (OBCs under today's classification), so that ownership (but not cultivation) patterns dramatically changed.<sup>12</sup> These land reforms thus represent a

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<sup>9</sup>Under the leadership of Chhatrapati Shivaji, the Maratha Empire was founded in 1674. At its height in the 18th century, the empire extended from present-day Pakistan to Orissa in the east and from Punjab to central Karnataka in the south. It also included Tamil Nadu. The vast empire was in decline by 1818 when Maharashtra had fallen to the British East India Company, however remnants of it lasted until Independence in 1947.

<sup>10</sup>In particular, Western Maharashtra was part of the Bombay Presidency which had a *ryotwari* (cultivator-based) system of land revenue collection. Eastern Vidarbha was part of Central Provinces which had a *zamindari* (landlord-based) system. Western Vidarbha was a part of Berar, formerly part of the princely state of Hyderabad, which was given to the East India Company as a debt payment in 1860 and made into a ryotwari region at that time. Marathawada never fell under British rule and remained a part of the princely state of Hyderabad until Independence in 1947. Land there was divided between government and feudal ownership. The former was run similarly to the ryotwari system whereas the latter was more similar to the landlord system. Refer to Banerjee and Iyer (2004) who analyse the impact of these different land systems on outcomes today. Our estimation results include regressors which control for these different land revenue systems.

<sup>11</sup>The relevant publications are *Imperial Gazetteer of India, Provincial Series (1909)* for *Bombay Presidency*; *Hyderabad State*; *Central Provinces*; and *Berar*.

<sup>12</sup>Maharashtra is one of the few states where the agricultural lands acts were comprehensively implemented. It is widely believed that tenancy reform (granting of ownership rights to former tenants) was very successful in

striking break with the past, in that they gave rise to a new class of landowners drawn from a previously non-landowning caste. These post-independence land reforms thus fully account for villages where a non-Maratha caste are the largest landowning group in our sample.

Since the reforms, other changes in land ownership and distribution have been almost entirely due to the process of inheritance and partition (land is typically divided amongst sons), with the combined ownership of each dynasty remaining fairly constant. Formal sales of land are rare. In our sample less than 2% had bought or sold land within the past 5 years (almost all distress sales) and 86% of our sample of landowners report that they inherited their land. Additionally 12% report that they purchased some of their land, but this was almost always a purchase from a relative or co-caste member.

This settlement history, and the fact that land reforms managed the redistribution of large landlord holdings ensures a distinct pattern of caste and land ownership in Maharashtran villages today.<sup>13</sup> The key distinction is that in villages where relatively few Marathas reside, the dominant land-owning caste *can* be a low caste (OBCs who were former tenants). By contrast, in villages where Marathas are populous, although the lower castes typically also own some land, the Marathas are highly likely to constitute the dominant landowning caste.

A potentially confounding issue could be that Marathas may own the highest quality land today because they historically resided in the high quality land villages. This could imply that our measure of Maratha land dominance is capturing the effects of land quality instead of (or additionally to) effects of caste dominance. To address this, we control for quality of land using extensive information obtained from the household and village level data we collected. In addition to this, we utilized GPS data from Indian government and international sources to further control for land quality. Moreover, as demonstrated in Table 1 below, there are no significant differences in village land use patterns and soil quality measures across villages dominated by Marathas (in terms of land ownership) compared to those not. However, even allowing for the possibility that these controls are inaccurate or insufficient, and that land quality mismeasurement is not showing up in different usage patterns, we will argue that it is very difficult for unobserved land quality differences to explain the pattern of variation in villages that we will soon document. After the results we re-discuss the issues that arise due to any possible mismeasurement of land quality.

Table 1 also demonstrates no significant differences across Maratha and lower (OBC) caste land dominated villages in key demographic and geographic variables. That is, there are no

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this state. The land ceilings act was sometimes circumvented via transfers to extended family members, but land redistributions away from intermediaries and absentee landlords was highly effective. (Kamat 1980).

<sup>13</sup> Anderson (2011) similarly treats land dominance by caste groups at the village level as pre-determined using data from Uttar Pradesh and Bihar. The empirical strategy used here is also related to Besley and Burgess (2000) who estimate the impact of state-level land reforms on outcomes today.

significant differences in terms of total population numbers, proportion SC (the lowest ranked caste group), cultivatability of the land, rainfall patterns, and also distance to exogenous (to the GP responsibilities) measures of amenities.<sup>14</sup> These include distance to a national main road, major rivers, and the nearest town. We checked these differences using our own household and village level data and also using the Village Amenities data from the Census of India 2001.

\*\*\*\*\*Insert Table 1\*\*\*\*\*

## 4 Summary Statistics

Good village governments implement policies, deliver public goods, are representative of village interests, and effective at obtaining resources for the village. There is substantial variation in all of these performance indicators across our sample of villages, as seen from Table 2.

\*\*\*Insert Table 2\*\*\*

Whether the majority of individuals are being well represented by their GP is not something that we can directly gauge from any single indicator of GP performance, but we do know the following: Village majorities are always poor, they would always benefit from the implementation of centrally funded pro-poor policies, and from implementation of the State's Employment Guarantee Scheme. Village land-owners are not the intended beneficiaries of such policies and stand to gain little directly from their implementation. Moreover, employment generating schemes may be actively against their interests by serving to pull labor away from farm enterprises.

There is clear potential for class conflict over the implementation of pro-poor policies. But the Panchayat Act (1993), and the principals of democratic governance, are very clear about how this class conflict should be resolved. According to the Panchayat Act, GPs are the channel through which poverty alleviation policies are intended to be targeted. They are responsible for implementing the policies, identifying the individuals who should be recipients of them, petitioning for the funds to finance them, and delivering them to the poor. Moreover, in most villages, and certainly in all of those in our sample, the vast majority of adults are either landless or hold land insufficient to sustain themselves and their families. They sell their labour to live, and would benefit greatly from policies that raised wages, augmented consumption, or increased labor demand. At a first pass at least, representative governance in majority interest corresponds to the implementation of consumption subsidies, the employment guarantee act, and poverty alleviation schemes.

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<sup>14</sup>The SC group, Scheduled Castes, are the lowest ranked castes, formerly known as the untouchable castes. They are ranked lower than the OBC category which refers to the backward caste groups. OBCs are the traditional farming and artisan castes, SCs traditionally performed menial tasks.

Table 2 documents the degree to which delivery of pro-poor policies is less than complete. Firstly, note that all of these policies, both poverty alleviation schemes, and consumption subsidies to the poor, are supposed to be available in the full universe of our sample villages. The mean number of programs available in a village is 5.33 out of a total of 15, and when restricted to those directly targeted to below poverty line (BPL) individuals it is 1.71 out of a total of 8. The employment guarantee scheme (EGS) is also supposed to be universally available, but is evident in only 20% of villages. All of these programs are directly funded from externally available funds, and need only be administered by the GP upon request for implementation. The fact that they are generally not, does not prove, but strongly suggests a governance failure somewhere along the line.

A candidate explanation for why the poor majority may not have their interests represented by village governments in rural India is the traditional prominence and economic power of large landowners. This has been studied in other political contexts, and in the present one may also play a role. In Maharashtra, the historically dominant political and economic group is the Maratha caste. As seen in Table 3 they are still an economically dominant class today. They are more likely to be large landowners, and more likely to be cultivators than laborers, in comparison to the other groups in our villages; other backward castes (OBCs) and scheduled castes (SCs). Moreover, as can be seen by comparing rows where land ownership is dominated by Marathas (designated *Maratha Land Dominated*) with comparable rows without the designation (indicating the whole sample), this pattern of relative economic advancement occurs within villages that are Maratha dominated, but also over the sample as a whole.

The lower panel of the table documents just how successful GP democratization has been with regards to objective indicators of political performance, and that this extends across all castes. Over 89% of eligible individuals voted in the last GP elections in all the major caste groups, and the main reason for the approximate 10% who did not do so is that they were in villages where candidates stood unopposed. Almost no one was forced to vote, and nearly everyone had met their Pradhan (GP head).<sup>15</sup>

**\*\*\*\*Insert Table 3\*\*\*\***

Maratha dominance is also seen in village politics. Taking into account reserved positions for the Pradhan (that if applied, always exclude a Maratha Male from standing), the upper panel of Table 4 demonstrates that though Marathas comprise about 40% of the population, they are the Pradhan in over 60% of villages where a Maratha can stand.

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<sup>15</sup>Voters elect the council members of the Gram Panchayat, which then elects among its members a Pradhan (leader). The Pradhan is the only member of the Gram Panchayat with a full-time appointment.

\*\*\*\*Insert Table 4\*\*\*\*

Since we see relatively low frequency of pro-poor policy implementation in our sample, while at the same time observing very little variation in the rate at which individuals participate in the democratic process (which is uniformly high, refer to the lower panel of Table 3), a natural question to ask is whether these traditional sources of power – landholdings by caste and caste numbers – could be undermining the effectiveness of governance, and hence explain some of the variation in governance across villages. As we have already argued, a simple indication of traditional sources of power affecting political representation is indicated in the final two columns of Table 4. When Marathas own the majority of village land (termed *Maratha Land Dominated* villages), an unreserved Pradhan is more than 90% likely to be a Maratha. In the final column we see that even when Marathas are not the village majority numerically, a Maratha will be village Pradhan in almost two thirds of cases. This over-representation of Marathas is even more likely where positions are reserved for women.

So, to summarize, these three overview tables suggest the following broad patterns in our data. Firstly, programs that are intended to alleviate poverty are not widely implemented. Secondly, the traditionally dominant caste in this region – the Marathas – remain economically dominant today. Thirdly, the Marathas are also over-represented in formal governing structures. This is greater than would be simply reflected by their numbers at the ballot box, and seems to be accentuated by their economic power (*Maratha Land Dominance*).

This leads us to conjecture a possible explanation for the poor poverty alleviation undertaking, and apparently poor governance, in this region: *the Marathas, as the traditionally dominant caste of the region, are somehow able to control the functioning of GPs – either through their numerical strength or economic strength – and use them for reasons other than in poverty alleviation roles.* It is this hypothesis that we shall explore.

## 5 Regression Results

Our first task is to understand whether, and how, the variation in the effectiveness of village governance is related to variation in landholding patterns and caste numbers across villages. We proceed by contrasting villages where the dominant landowners are from the traditionally dominant Maratha caste with those where they are from a traditionally subordinate (OBC) caste. In doing this, it is important that we are not inadvertently picking up another feature of landholding patterns that may be correlated with caste ownership. A natural one to worry about would be the overall distribution of landholdings in such villages. However, as Table 3 documents, the distribution of landholdings hardly varies across villages that are Maratha land

dominated, compared with the sample overall.

Another factor of great salience in the village political context is the role that caste based reservations play. Since the Panchayat act mandates these reservations be randomly applied, they pre-determine both the caste and gender of elected representatives in about a third of all cases. For our purposes it is important that the randomization has not led to an inadvertent bias in treatment of the villages characterized by Maratha dominance versus other types of villages in the application of those reservations. As the lower panel of Table 4 indicates, it has not. Reservation rates are almost equivalent across the restricted set of Maratha land dominated villages as they are in the sample overall. This is because reservations are determined at the district, not village, level.

We now estimate the effect of Maratha numerical and economic dominance on several outcomes of interest. In addition to our two key regressors – the population proportion of Marathas and whether Marathas are the dominant land owners in a village – we also include a standard set of geographic, demographic, climatic and regional controls. We run two main estimating equations. The first uses household level data and is represented by the following:

$$Y_{ivr} = \beta_0 + \beta_1 X_{ivr} + \beta_2 Z_{vr} + \beta_3 D_{vr} + \beta_4 P_{vr} + \alpha_r + \varepsilon_{ivr} \quad (1)$$

$Y_{ivr}$  is an outcome of household  $i$ , residing in village  $v$ , and region  $r$ .  $X_{ivr}$  includes household controls (education, land ownership, and caste identity);  $Z_{vr}$  includes geographic, demographic, and climate controls (latitude, longitude, elevation, distance to natural water sources, distance to railways and national roads, soil quality measures, rainfall levels, and proportion of the population that is SC).  $D_{vr}$  is our key variable of interest, which is equal to 1 if a village  $v$  (in region  $r$ ) is dominated by Marathas (in terms of land ownership) and equal to 0 if the village is instead dominated by a lower caste (OBC).  $P_{vr}$  is equal to the proportion of Marathas in a village  $v$  (in region  $r$ ).  $\alpha_r$  is a region fixed effect (which picks up variation in historical land revenue systems).  $\varepsilon_{ivr}$  is a regression disturbance term clustered at the village level.

We also use village level data to explore the impact of Maratha dominance on GP performance measures. We will estimate the following:

$$G_{vr} = \gamma_0 + \gamma_1 W_{vr} + \gamma_2 D_{vr} + \gamma_3 P_{vr} + \rho_r + \epsilon_{vr} \quad (2)$$

$G_{vr}$  is an outcome measure of GP performance in village  $v$ , and region  $r$ .  $W_{vr}$  includes geographic, demographic, and climate controls included in  $Z_{vr}$  as well as GP controls (population that the GP covers, caste of the Panchayat leader *Gram Pradhan*, and reservation status of *Gram Pradhan*).  $\epsilon_{vr}$  is a regression disturbance term clustered at the *tahsil* (block) level, which is the next

administrative unit up from the village. There are on average 125 villages in a given tahsil in Maharashtra.

It is important to note that the pairwise correlation between Maratha land dominance,  $D_{vr}$ , and the population proportion of Marathas,  $P_{vr}$ , is only 0.54. Hence our estimations, as described by the above equations, should not suffer from multicollinearity.

It is also important to note that villages where Marathas dominate (by either of these measures) are geographically dispersed throughout our sample. Relatedly, our results are robust to including regional fixed effects defined in several ways. That is, at the level relevant to administrative divisions today, or instead to colonial administrative units, or alternatively at the district level. Our results are also robust to excluding the few areas where no Marathas are present, as mentioned in Section 3.1.

Our key variable of interest,  $D_{vr}$ , is equal to one (i.e., dominated by Marathas in terms of land ownership) for 59% of the villages in our sample. The remaining villages are dominated instead by a lower ranked caste group (primarily two cultivating castes, the Kunbis and Dhangars, both OBCs under today’s classification). In the empirical estimation we leave these two sub-castes (*or jatis*) grouped together. All of our main results persist if we instead separate them in the analysis.

## 5.1 GP Estimations

### 5.1.1 Political Power

We first check to see whether Marathas are more likely to be elected to lead a village Panchayat as the village becomes more Maratha, or if Marathas dominate village landholdings. As seen from the first two estimations reported in Table 5 below, the results indicate that both of these channels affect the likelihood of a Maratha Pradhan. Given the predominance of caste-based voting in India, it is not surprising that Maratha power arises where they are numerous, i.e., through the ballot box. Of course, even by the law of averages, population numbers should make this more likely, so we do not dwell too much on the effects of the proportion of Marathas on this variable. However, Maratha power also arises through land dominance even controlling for the effect of the ballot box (i.e., controlling for population). This is not a factor supposed to directly affect the democratic process, though it may not be wholly surprising, so the next few regressions explore potential channels through which land dominance may be working.

### 5.1.2 Good Governance

The first that we consider is the effectiveness of Marathas in governing when they dominate the land. Note that there need not be anything underhanded about Maratha over-representation.



For instance, it could be that the majority vote Maratha because when the land owners, and hence primary economic power of the village, are all Maratha, effective governance requires the involvement of this caste.

One of the important roles of governments in these villages is the provision of local public goods, (Duflo and Topalova 2003, Banerjee and Somanathan 2007) on which we asked detailed information. As the second set of regressions in Table 5 make clear however, for all surveyed public goods, for which the GP is responsible, there is almost no variation in the quality of provision under Maratha land dominance. This was also true for village level goods such as the construction of community centres or other projects, which are under the jurisdiction of the GPs.<sup>16</sup>

Since so much of the running of the GP is financed by resources that are delivered through the state, another possible reason for Maratha land ownership to lead to Maratha political dominance is that the economically powerful individuals in the village are needed to secure resources available from outside. Connections between the village's wealthy (i.e., the landowners) and the politically powerful at higher levels of the state government structure could help the village leadership to bring resources into the village. According to this hypothesis then, Maratha landownership leads to Maratha power because of their ability to bring resources into the village, as such resources are able to be used to finance expenditures from which all village members benefit. GP finance information derives from the GP questionnaire and the census, and is the dependant variable in the third set of estimations reported in Table 5. These results do not support such a channel of effect. Maratha land dominated villages are less effective in obtaining inflows of resources to the GP, measured either through the census, or through the information we obtained from GP balance sheets. The census data also shows their expenditures to be lower. So it does not seem to be the case that Maratha land ownership leads to political dominance due to Maratha effectiveness at appropriating central funds.

Another reason for the poor majority of a village to support the dominant landowners in positions of power could be that they are effective at implementing policies benefiting the poor. As already conjectured, these policies are of little direct interest to landlords, and may even be detrimental to them. However, they may be delivered as the price of political power as part of a standard clientelist deal between the political elites and their constituents (see Persson and Tabellini 2000, Section II).

The relevant policies comprise those programs targeted for individuals below the poverty line:

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<sup>16</sup>GPs are not responsible for education or health facilities. These amenities are under the jurisdiction of higher level governments. Both of the studies mentioned in the text found that public good provision was affected by the quality of governance. However the hypothesis that we will forward to explain the variation in governance that we document will not naturally suggest variation in public good provision at the village level. We discuss this further after the main results.

Housing Support Scheme; Sanitation Support Scheme; Indira Awas Yojana (IAY, a housing construction program; Targeted Public Distribution System (TPDS). Non-targeted programs (which are still primarily pro-poor) include: Integrated Child Development Scheme (ICDS); Social Security Pension, Mid-day meal Program, Accelerated Rural Water Supply Program; Pradhan Mantri Gram Sadak Yojana (PMGSY, a road construction program), and Annapurna (free foodgrains to individuals older than 65). There is also the Employment Guarantee Scheme (EGS) which is a legal guarantee for 365 days of employment to adult members of rural household willing to do public work-related unskilled manual work at the statutory minimum wage.

The fourth set of estimations in Table 5 comprehensively indicate that this hypothesis is not supported. Almost all pro-poor policies are available less frequently in Maratha land dominated villages. This is true whether they are explicitly targeted to the poor, or simply mostly utilized by the poor, and it is also true for the state's large Employment Guarantee Scheme.

It seems safe to rule out superior performance in delivering pro-poor programs as an explanation for Maratha landowners obtaining political power. Moreover the strong significance of the negative effect indicates that the policies that would be most beneficial to the poor (who recall are always the vast majority in a village election, where almost everyone votes) are delivered relatively badly in villages where Marathas dominate the land (controlling for population numbers by caste).

The final set of estimations in Table 5 make clear that this poor performance is unlikely to be due to bad luck or some other unobservable feature of such villages. Centrally funded poverty alleviation policies are implemented in the village when the GP applies to a higher level authority to request for mobilization. This requires the petitioning of higher level functionaries by the Pradhan (village leader). Data we obtained from the village governments' own records, show that the Pradhans of Maratha land dominated villages are less active in undertaking the meetings required to secure resources.

**\*\*\*\*Insert Table 5\*\*\*\***

Hence the means by which Maratha dominance of land gives rise to political power remains a puzzle. GPs where Marathas are the dominant land owning caste are neither more effective in implementing policies, delivering public goods or raising funds for the village. In fact, the evidence suggests less effort by such Pradhans towards securing funds, and fewer resources coming in that would benefit the majority in Maratha land dominated villages.

## 5.2 Individual and Household Estimations

### 5.2.1 Social Capital

Given the lack of direct policy related reasons, we turn to more indirect explanations. A large literature (an early prominent example of which is Putnam et. al. 1993) suggests that local governance depends critically on good grass roots level social cohesion – or social capital. In the present context, an explanation for the correlation between Maratha land holdings, their power, and poor governance could arise from the effect of Maratha land dominance leading to a legacy of mistrust that persists to the present day. The recent and growing literature on the historical determinants of social capital (Nunn and Wantchekon 2010, Guiso et. al. 2008 Tabellini 2005, Algan and Cahuc 2010) emphasizes the importance of such historical factors in affecting contemporary social capital. In villages where social capital has been undermined by Maratha land dominance, effective governance by the majority could be more difficult today and this could explain why the landholders exert political power, and fail to implement policies that are in the majority’s interest.

Such a history is certainly not implausible, given the traditional separateness of castes and the fact that in such villages the dominant caste (socially) also controls the land and the village’s economic resources. So the root cause of such an explanation is social fractionalization and hence low social capital in villages dominated by Maratha landowners.

We can directly check whether this is the case by observing whether caste relations are worse in villages where the dominant land owners are Maratha. As the first set of estimations in Table 6 make clear, this is not the case. In fact, the opposite is true. Individuals are more likely to report that people in their village can be trusted in Maratha Land Dominated villages, and that they are specifically less likely to be cheated by large landowners (interestingly the opposite occurs due to Maratha population numbers). Another measure of social capital, which appears to have first been argued for by Robert Putnam, is said to arise from voluntary donations on the part of individuals of both time and money. Our surveyed households are also more likely to have donated cash, or labor to village level development initiatives in the last year if they reside in Maratha Land Dominated villages. They are also more likely to report that someone from their village will “repair themselves” any damage that they happened to notice on your farm. All in all, the data suggest that social capital, as conventionally evaluated, is, if anything, better in villages dominated by Maratha land owners.

### 5.2.2 Economic Clientilism

The positive indication of social relations within villages dominated by Maratha landlords suggests another avenue that could explain their political control. As already seen, the services provided by the GP through direct political channels are worse, but perhaps these services are more than offset by other, extra-political benefits that are delivered to voters by landlords directly in return for political support. If the landlords in such villages are delivering benefits that are provided by the GP in other villages, this could explain why caste and social relations are better in these villages. It may also explain why programs are less widespread and why landlords are able to maintain political control through a type of patronage relationship with political clients from the working classes. The richness of information in our dataset allows us the opportunity to trace out such a possibility.

The most likely benefits that could be provided to buy political support would be amongst the factors that matter the most for the poor. Insurance is a natural one. Scott (1977) documents the critical importance of ensuring against unforeseen tragedy, and this is certainly a factor that is paramount in the lives of the poor in rural Maharashtra too. A possible hypothesis is that the high levels of social cohesion in Maratha land villages are an outcome of higher levels of financial support that the large landholding upper castes (patrons) in such villages are able to offer some of the poor who are willing to be their clients. Since this is valuable, this segment of the poor (clients) is willing to cede political power to large landowners in return for direct insurance, and the landowners use the power to implement policies that they prefer. If enough of the poor are recruited as clients, the landlord-patrons get their way by winning GP elections. This is a type of clientilism, though one that does not depend on the political patrons delivering policies to benefit their clients, but instead delivering direct benefits in return for the right to implement the policies that they prefer.<sup>17</sup>

At the informal level, this is consistent with political scientists' accounts of activities in Maratha dominated villages. Carter (1972) has studied the social determinants of Maratha caste power in the state of Maharashtra. According to him, successful politicians recruit popular support by forming a series of horizontal political alliances with other Maratha leaders who deliver the votes of individuals within their own settlements. But how do local leaders obtain votes from their villages? According to Carter vertical alliances are based on patronage transactions linking the mass of voters with elite leaders who control the land, and GP and credit institutions. As the following quote from a farmer in one such village makes clear, these 'transactions' clearly involve a quid pro quo element.

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<sup>17</sup>The classical form of clientilism Persson and Tabellini (2000, Section II) involves patrons delivering narrow policies to their base as opposed to (possibly more efficient) broader benefit policies.

“Marathas have always been the rulers and so it is natural for people to accept their leadership. They have *daanat* (obligation to give). When laborers go to them for help in times of need (especially for marriage ceremonies and illnesses), they give.....”  
Kalidas Aapet (Maratha farmer, Marathwada)

This is consistent with Scott’s description of traditional patronage amongst peasantry in South East Asia. According to him, the subordinated in traditional villages willingly acceded to their subordination, in return for consumption insurance.

Within the village context, a wide variety of social arrangements typically operated to assure a minimum income to inhabitants.....They [these arrangements] are not radically egalitarian. Rather they imply only that all are entitled to a *living* out of the resources of the village, and that living is attained often at the cost of a loss of status and autonomy. Scott (1977, p.5, our parentheses, his italics)

The suggestion here is that it is a political transaction, which in our context amounts to clientelist vote trading. The logistics of undertaking this sort of political transaction in the villages of our sample make this feasible even under anonymous balloting. There are about 5 to 6 wards in a GP and each one comprises on average 300 to 400 individuals which is about 70 to 80 households. Each ward elects two representatives. This implies that, at most, 50 households should be enough to deliver a seat on the GP, implying a not implausible level of monitoring required to support vote trading.<sup>18</sup>

For this to be going on, we should then see the provision of consumption insurance from large landowners or upper castes to the poor or lower castes is more prevalent in Maratha land villages. As the second set of estimations in Table 6 demonstrate, this is indeed the case. We asked small landholders, whether most people in the village would help a villager with money in times of crisis, whether a higher caste member would do so, would most people help a lower caste villager with money or with grain in times of crisis and directly whether ‘you’ would be helped with some grain by a higher caste member of your village in times of crisis. All of these are significantly more likely to occur in Maratha Land Dominated villages. There were no significant effects of Maratha Land Dominance on these variables for larger landholders.<sup>19</sup>

We have already seen that Maratha Land Dominated villages are less likely to implement pro-poor policies, but is there any evidence that insurance transfers and the social cohesion it generates

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<sup>18</sup>Organized voting is common in the Indian context, and numerous schemes have been devised to circumvent the anonymity of secret balloting, see Chandra (2004) and Subramanian (1999) for in depth analysis and examples.

<sup>19</sup>Small landholders are defined as those who own 3 acres or less of land. Large landholders have more than 3 acres.

could be instrumental in allowing this? The third set of estimations in Table 6 are suggestive. It seems that voters in Maratha landlord dominated villages, with widespread insurance and better social capital, also see the GP and village politics in a less contested way. As the results indicate, the poor in such villages believe that (instead of being targeted to particular groups) policies and funds should benefit the “village as a whole”. This is despite the fact that most policies are explicitly supposed to be targeted to the poor. Such villages also spend significantly more of their resources on collective festivals.<sup>20</sup>

**\*\*\*\*Insert Table 6\*\*\*\***

So a possible explanation for Maratha land dominance leading to political power, is that insurance provision by Maratha landlords plays a key role in building social cohesion, moderating direct demands for programs by the poor, and sustaining political support for the large landowners. But for this to be the case, we need to explain why the landowners would be willing to expend the resources necessary to sustain such political support. One reason could be that they stand to lose out from implementation of pro-poor policies as labor demand and labor’s opportunity cost will both increase. This could adversely affect landlords by lowering labor compliance, labor effort, and raising wages. This is a reason that was again informally suggested to us in the field. For example:

....Timeliness makes a big difference to the yields. And this is why farmers don’t like government schemes that create other employment opportunities for labor. On the banks of Godavari, I can point out a whole belt of villages where Maratha farmers have prevented the government from building roads. Finally, the roads got built when the roads were built with labor brought in from outside.

..... Kalidas Aapet (Marathwada) Maratha farmer

### 5.2.3 Economic Measures

Is there evidence corroborating this? The consequence of increased labor opportunity cost would be most directly felt by the landowners through higher wages to workers, and may also manifest in lower labor productivity and yields. We obtain wage information from the household survey and information about yields and profits from surveys of large agricultural producers. We focus on the *kharif* growing season which is the main one, occurs in the wet period, and lasts on average

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<sup>20</sup>This further echoes Scott (1977) “In addition, social pressures within the precapitalist village had a certain redistributive effect: rich peasants were expected to be charitable, to sponsor more lavish celebrations, to help out temporarily indigent kin and neighbors, to give generously to local shrines and temples.” p.5

over four months. In our data, kharif crops are grown on 77% of cultivated land, they generate 73% of total annual yields and form 81% of total annual profits. Typical crops include grains and pulses (*tur*, *bajra*, *jowar*, *chana*, soybean, and wheat) as well as cotton. The main inputs into production on kharif crops are seeds, fertilizer, and labour (irrigation expenses are negligible). Labour forms 31% of total kharif input expenses, fertilizer 30%, and seeds 24%.

As the first set of estimations in Table 7 document, preliminary findings are consistent with this conjectured avenue of effect. Wages are lower in Maratha land dominated villages, while both yields and profits are higher.<sup>21</sup>

**\*\*\*\*Insert Table 7\*\*\*\***

Since the Employment Guarantee Scheme raises labor demand within villages, and the myriad consumption support policies for those individuals below the poverty line (the majority in all villages) raise labor's opportunity cost, it is relatively straightforward to show that the implementation of such policies can lead to both increases in wages and declines in labor productivity. In fact, in Appendix A we show that the optimal second best relational contract between a landowner and worker when worker effort is non-observable, will feature increasing wages and declining productivity when poverty alleviation policies and the EGS are implemented.

## 6 The Role of Caste

Up to now we have not addressed the question of why it is that Maratha landlords and not landlords of other castes seem more effective at seizing political power. Is there any reason why non-Maratha landlords cannot establish equally effective clientism in the villages they dominate? The large body of sociological and political science literature on rural Maharashtra suggests two prominent reasons that we scrutinize more carefully in this section.<sup>22</sup> Firstly, there are authors that emphasize that Marathas, as a traditional dominant and cohesive caste, have a history of political dominance from which their current position of dominance derives. The mapping from historical power to dominance today is achieved by superior Maratha social cohesion.

### 6.1 Superior Maratha Social Cohesion

Theoretically, superior social cohesion could certainly play a role in explaining Maratha overrepresentation in governance. The fact of social cohesion being present between same caste

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<sup>21</sup>Note that mismeasured land quality, on its own, cannot explain these findings. As we conjectured earlier, it may be that land quality is higher in Maratha land dominated villages. If this is the case, then though this can contribute to explaining the findings on yields and profits, it makes the lower wages found in such villages even more difficult to understand.

<sup>22</sup>Extremely illuminating works on Maratha political dominance in Maharashtra are Carter (1974), Lele (1981), and Sirsikar (1970).

members is not disputable. But to explain Maratha dominance, the hypothesis is that Marathas are better at achieving such social cohesion than other castes. This feature may stem from a greater collective experience of social organization and the simplest way to conceive of this is to allow that Marathas are more effective in pursuing within-caste political deals than other castes.

Carter (1974) describes these types of political deals between Marathas in his analysis of Maharashtra rural politics. Conceptually, it is possible that the superior social cohesion of Marathas ensures that a Maratha cheating another (in a political or other form of transaction) not only suffers a higher cost than if cheating a non-Maratha, but also suffers a higher cost than a non-Maratha suffers cheating his own caste mate. Such costs are easier to impose in a socially cohesive group. For example, they could involve withdrawing/reducing or excluding violators from social exchanges (marriages, festivals, celebrations). By suffering greater costs to cheating each other it should be easier for them to sustain cooperative outcomes and would also tend to make Marathas more trusting of each other than they are of other castes, and also more so than other castes of their own caste members. This hypothesis is in the spirit of Munshi and Rosenzweig (2008), who postulate that the internal disciplining mechanisms within caste groups can act as an effective check on politician misbehaviour. It adds to that basic insight, which is generally true for all caste groups, the added weight of Maratha membership for whom these links and internal disciplining mechanisms are posited to be stronger than in other castes. We refer to this as the “superior social cohesion” explanation for Maratha political dominance.

How does this advantage get translated into a more effective vote buying ability? Every patron must ensure that his clients vote in the interests of the landlord class. Vote buying benefits the entire landlord class and an individual landlord may be tempted to free ride on the efforts of other landlords. Greater social cohesion among Maratha landlords can translate into a stronger implicit contract binding them to deliver their clients’ votes; in case a landlord fails to do so, caste sanctions can be brought to bear.

## **6.2 Maratha Trading Networks**

Another potential underpinning of Maratha power in village politics also derives from their unique history but is from a more standard economic source. Marathas have access to the best system of caste-based trading networks in the state. Rosenthal (1977) describes how the small producer is typically at the mercy of Maratha agents with substantial commercial ties across the rural areas. Maratha trading networks deal in seeds, fertilizers, other agricultural inputs, credit and agricultural output marketing. Almost all agricultural transactions in the rural parts of Maharashtra, and in our data, are conducted through either a Maratha trading network or using members of the traditional itinerant trading caste (the Marwadis), who are not from the villages (there are



virtually no Marwadis residing in our sampled villages) and therefore there is no caste based connections between farmers and Marwadis in our sample. A potential explanation for Maratha landlords' political power is that access to, and use of, these networks is a benefit that Maratha patrons grant to political clients in return for political support. This would make support relatively cheap for Marathas to 'buy'. Some initial evidence in favour of this is provided by the last set of estimations in Table 7, which demonstrate that the use of Maratha trading networks by lower castes is more likely in the Maratha landlord dominated areas.

## 7 Formal Model of the Political Process

Before elaborating the formalities, we pause to note some key features of the social environment that inform the assumptions underlying the ensuing model.

### 7.1 Social Environment

Not all workers are landless; some have land but so little of it that their main source of income is labour on others' farms. Cultivator-workers of this type greatly value access to trading networks. Each individual belongs to a class (landlords or workers) as well as to a caste.<sup>23</sup> The relationship between landlords and workers (the class relationship) is hierarchical. Thus, it makes sense to assume that if a landlord breaks an implicit contract with a worker of the same caste, he will be punished, but only by other landlords from his caste. The relationship across caste membership, on the other hand, is horizontal. Consequently, the Maratha instrument of providing access to trading networks works more effectively with non-Maratha clients than with Maratha clients, as all Marathas already have access to the trading networks of their own caste.

People are averse to seeing a member of their own caste short changed. Thus if a patron (landlord) cheats on an implicit contract with a client (worker) sharing the same caste, he bears some costs for this in terms of social sanctions from his caste members. In the village environment of highly personalized and repeated interactions, it would be a stretch to imagine that any information can remain private. We assume therefore that information such as whether an implicit contract was fulfilled by both parties, including who voted for whom, is common knowledge within the village.

### 7.2 Formal Set-up

In each village there are two classes. Workers who generate most income by selling labor, denoted by  $W$ , and landlords, denoted by  $L$ , who hire labor and whose income derives from landholding.

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<sup>23</sup>Poor cultivators who make most of their income as labour income are likely to identify themselves as workers.

Workers are always a numerical majority and we assume that class numbers do not vary across villages.<sup>24</sup> There are  $2n$  workers in each village and  $1 \ll n$  landlords, so that landlord political control requires their ‘buying’  $n$  worker votes to yield a majority of  $n + 1$ . There are two castes in each village, Maratha and Non-Maratha  $(M, N)$ . Both population numbers by caste and landholdings by caste can vary across villages as reflected in our village survey. Thus, each agent is identified by both class  $(W, L)$  and caste  $(M, N)$ .

### **The consequences of political control**

Political control allows landlords to pursue GP policies that are in the landlord interests as opposed to the workers’. As discussed in the earlier part of the paper, the GP is directly responsible for implementing poverty alleviation programs whose benefits are almost exclusively delivered to workers. Denote a worker’s valuation of pro-poor policies by  $P$ . Assume that all utility valuations are linear unless otherwise specified. When landlords control the GP, these policies are shut down, so that workers receive no benefits. Landlords do not benefit directly by shutting down pro-poor policies, but do so indirectly by the effect these have on wages and labor compliance. We denote wages under landlord GP control by  $w(L)$  and those under worker control by  $w(W)$ . Similarly worker effort  $e(L)$  is effort exerted by workers when the GP is controlled by landlords, and  $e(W)$  otherwise. We assume only that  $w(L) < w(W)$  and  $e(L) > e(W)$ . In Appendix A, we show that it is straightforward to generate these inequalities as the outcome of relational contracts between workers and landlords when GP pro-poor policies are shut-down by landlord control.

### **Maratha landlord advantages**

As discussed above, we embed two distinct avenues for Maratha Landlord advantages; Maratha network benefits and Maratha social cohesion. The benefits of trading network access are modeled in an extremely simple form: having access yields benefit of amount  $X$  in utility metric. Only Marathas have access directly, but it can be granted to a non-Maratha by a Maratha, and we assume granting this way is costless. It amounts to a Maratha villager introducing and guaranteeing a non-Maratha villager to his Maratha trading partner. In reality, this may impose some costs on the Maratha guarantor, but we ignore these here.

The benefit of social cohesion is more complex as it helps in making mutually beneficial agreements incentive compatible, which we turn to now. For clientelist vote trading to occur, workers must be willing to “sell” their vote (i.e., vote for the landlord’s candidate) in return for some set of credibly delivered benefits.<sup>25</sup> Additionally, feasibility requires that the benefits

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<sup>24</sup>The breakdown of village numbers by class is not available in our data, but it is certain that landlords always comprise a minority.

<sup>25</sup>Since reservations are in place, the landlord’s candidate will not always be a landlord or someone from the dominant landlord’s caste, but is instead someone supported by the landowning group.

generated by a landlord when obtaining GP control outweigh the cost of compensating workers for relinquishing it. Here, the public good nature of GP control leads to a free-riding problem. A single landlord has incentive to opt out of the vote buying and free-ride on the efforts of the politically active landlords who purchase power and govern in landlord interests. Effective landlord mobilization requires a solution to this free-riding problem.<sup>26</sup>

We assume that it is solved symmetrically amongst the landlords. Since the size of the landlord class is normalized to 1, each landlord is responsible for delivering the votes of  $n$  workers. And it is when ensuring these responsibilities are met that caste identity may help. Specifically, we allow that a group of landlords can impose social costs on a landlord not contributing the votes required to secure political control, i.e., free-riders who do not deliver their  $n$  votes. We distinguish between the social punishments that can be imposed on free-riding Maratha landlords, by other Marathas, which we denote  $C_M^L$ , and those lower punishments imposed on members of non-Maratha castes by their caste brethren when they free-ride,  $C_N^L < C_M^L$ . Individuals who do not share a caste cannot impose social punishments on each other;  $C_0^L \equiv 0$ .

### Insurance

Votes are bought by insurance transfers. For simplicity we assume that utility is linear in consumption, and that the default valuation of a unit of consumption is 1, but this can vary across states. There are two possible states; the normal state with consumption valued at 1, and a state of “need” where the worker’s marginal valuation of consumption is  $\beta > 1$ . The state can change each period, and for simplicity there is no persistence. Need arises with probability  $\mu$ , so that with reciprocal probability,  $1-\mu$  the state is normal. An insurance contract from a landlord,  $i$ , to a worker,  $j$  is a promise to transfer an amount  $S_{ij}$  in a state of need. Such a state is observable to both landlords and workers but not enforceable by formal/legal mechanisms.<sup>27</sup>

### Incentive compatibility of insurance promises

In what follows, we only focus on the incentive compatibility of promises made by landlords

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<sup>26</sup>One solution is to construct political coalitions so that each contributing member of a landlord oligarchy is pivotal in supporting the election success. As we will see, since landlords cultivate political support by providing streams of continuous benefits to their clients, a ‘deviating’ landlord opting out and choosing to free-ride is likely to be clearly visible to the other landlords. It does not seem credible that the other landlords would not move to shore up the lost political support to avoid ceding GP control. Consequently, though it is theoretically possible to judiciously construct a landlord coalition in such a way that free-riding is circumvented, the reality is that free-riding is a constant problem that must be overcome by successful political coalitions. No small part of that is achieved by the rich social connections afforded by caste, so that we model these directly and ignore some possibly clever coalitional knife-edge structures that could also, theoretically at least, deliver incentive compatibility.

<sup>27</sup>A state of need is an idiosyncratic circumstance specific to the worker, and hence unlikely to be easily contractible. Examples are a child’s illness requiring medical expenses, loss or damage to a household asset such as livestock, or an employment/sickness shock to a household income earner that lowers household income temporarily. Transfers occur all the time for such contingencies in our villages, but are never explicitly contracted over. Note that  $\beta > 1$  implies equivalent consumption leads to higher utility in the need state, but this can be easily remedied by subtracting a constant in that state to represent the additional need.

to workers in return for their votes. By doing so, we can specify a simple one-period model, which preserves qualitative features identical to those in a more complicated dynamic version.<sup>28</sup> The sequencing of actions makes clear the punishments available to the worker if the landlord does not provide the promised insurance,  $S_{ij}$  in a state of need. For simplicity, there is no discounting: (1) Worker and Landlord strike a vote trading deal, that specifies a “price”  $S_{ij}$  transferred to the worker in case “need” ensues, for his/her vote in GP elections. (2) The state is revealed to both parties. (3) The landlord chooses the level of transfer to provide if the “need” state arises. (4) Elections occur. If the need state arose and the transfer received is  $S_{ij}$ , the worker votes for the landlord’s candidate. If the need state arose and the transfer received is less than  $S_{ij}$ , the worker votes for someone else, and social sanctions are imposed on the landlord, elaborated below. If the need state does not arise, the worker votes as promised.

Caste cohesion leads to costs being imposed on landlords who cheat workers of their own caste. And, as is the case when cheating landlords, we assume that these costs are greater amongst Marathas. Specifically, if landlord  $i$  cheats a worker  $j$ , (i.e., renegs on promised transfer  $S_{ij}$  in  $j$ ’s state of need) social sanctions cost the landlord amount  $C_M^W$ , if and only if both landlord and worker are Maratha. If they are both from a non-Maratha caste the sanction is lower:  $C_N^W < C_M^W$ . If they are from different castes, no social sanctions apply:  $C_0^W = 0$ , though the landlord still loses a vote.<sup>29</sup> We assume no necessary relationship between the sanctions imposed by landlords when one of them breaches a contract with a worker from the same caste ( $C_i^W$ ) and those imposed when the required number of votes is not delivered ( $C_i^L$ ), though, given the generally stronger social connections between landlords, the latter is likely to be greater.

For insurance transfers to be incentive compatible between landlord  $i$  and worker  $j$ , the landlord must prefer to make the payment in the “need” state rather than suffer the social sanctions arising from cheating a worker,  $C_i^W$ , and cheating landlords,  $C_i^L$ , on an undelivered vote. That is:

$$S_{ij} \leq C_i^L + C_i^W. \quad (3)$$

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<sup>28</sup>A more complicated version of the model would also analyze the incentive compatibility of worker promises to vote in favour of the landlord’s candidate after having received insurance, and would thus need to be dynamic. Between elections, landlord incentive compatibility must hold to ensure landlords make promised insurance transfers if needed once they are in power – this is the problem that we analyze. At election time, additionally, worker incentive compatibility would have to hold to ensure that workers vote as promised given the landlord insured them – this is the problem we ignore, and which by doing so allows us to write down a static model.

<sup>29</sup>Note that withdrawal of a worker’s political support will not lead to overall GP control reverting to workers. However, it will lead to sanctioning by other landlords, since the relevant landlord no longer delivers the  $n$  votes that were his responsibility. This implies that within caste social sanctions against landlords can be triggered even by deviating against a worker who is not from the same caste.

<sup>30</sup>Note that the costs are subscripted by the landlord’s caste,  $i$ , in reflection of the fact that they are being imposed by other landlords for a breach. However, the social cost imposed from not delivering a promised vote is levied whatever the caste of the worker  $j$ . The social cost imposed on landlords who cheat workers, however, only arises if worker  $j$ ’s caste is the same as the landlords.

### The cost of a vote

Rationality of vote trading requires that for worker  $j$ :  $U_j^W(L) \geq U_j^W(W)$ , where  $U$  denotes the expected utility outcome corresponding to the group in parentheses controlling the GP; the subscript  $j \in \{M, N\}$  refers to  $j$ 's caste, and superscript  $W$  denotes his worker status.

If not selling his vote, then pro-poor programs are implemented at value  $P$ , there is no insurance and if the worker is not Maratha, there is no trading network access:

$$U_j^W(W) = w(W) - c(e(W)) + P + d_j X$$

where  $d_j = 1$  if  $j = M$ , and 0 if  $j = N$ .

If voting for landlord  $i$ 's candidate, then programs are shut down, there is insurance, and network benefits arise ( $d_{ij} = 1$ ) even if the worker is non-Maratha ( $j = N$ ) provided the landlord is Maratha ( $i = M$ ). Of course, a Maratha worker ( $j = M$ ) receives the benefits anyway. Consequently, under vote trading, if and only if  $i = N$  and  $j = N$  does a worker *not* receive network benefits;  $d_{ij} = 0$ .

$$U_j^W(L_i) = w(L) - c(e(L)) + \mu\beta S_{ij} + d_{ij} X.$$

Note the difference in receipt of trading network access in this case. The worker receives such access either directly, or through the landlord he supports when clientelist vote trading occurs. In contrast, when workers control the GP, network access is obtained only through own caste membership.

Clientelist vote trading is individually rational for the worker,  $U_j^W(L_i) \geq U_j^W(W)$ , if and only if,  $S_{ij} \geq \frac{w(W) - w(L) + P + c(e(L)) - c(e(W)) + (d_j - d_{ij})X}{\mu\beta}$ . Since landlords will not transfer more than necessary to buy a vote, the amount of promised transfer will bind, yielding:

$$S_{ij} = \frac{w(W) - w(L) + c(e(L)) - c(e(W)) + (d_j - d_{ij})X}{\mu\beta}. \quad (4)$$

The landlord's individual rationality condition must also hold. That is, the lower wage and higher effort induced by landlord GP control must offset the expected cost of providing the insurance  $\mu S_{ij}$ . This implies  $w(W) - w(L) + [e(L) - e(W)]p \geq S_{ij}\mu$ , which after substituting from condition (4) yields:

$$(\beta - 1)[w(W) - w(L)] + \beta p e(L) - c(e(L)) - \beta p e(W) + c(e(W)) \geq P + (d_j - d_{ij})X \quad (5)$$

Only if this condition holds is vote trading beneficial to both workers and landlords, and hence feasible. In addition, the landlord's incentive compatibility condition (3) must also hold.<sup>31</sup>

We summarize:

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<sup>31</sup>Note that landlords, in this formulation, are responsible for delivering votes that are proportional to their size, and hence to the benefit that they will derive from the lower wages so that all conditions are independent of scale.

**Proposition:** *For clientelist vote trading between landlords of caste  $i$  and workers to occur it is necessary that there exist at least  $n$  workers for whom such trading is both individually rational and incentive compatible, i.e., for whom condition (3) and condition (5) hold.*

We make no attempt to fully characterize the set of possible equilibrium configurations that can arise in such a model. Clearly, as is standard in such voting models, such a set-up admits many possible outcomes, which are only increased by allowing for coordinated actions, and side payments between groups. Instead, we proceed by examining how the necessary conditions for a particular sort of outcome (the one we have dubbed “clientelist vote trading”) which we have presented prima facie evidence of in our villages, are affected by the two differing mechanisms through which caste can enter in the model.

It turns out that the two different explanations for Maratha political dominance (Superior Social Cohesion versus Caste Networks) affect the conditions necessary for a clientelist outcome through distinct channels, and lead to distinct implications:

**Corollary 1:** *Caste enters condition (3) only via the Superior Social Cohesion explanation for Maratha dominance. Accordingly, this condition is more likely to hold when votes are traded between: (i) workers and landlords who are of the same caste, and (ii) workers and landlords who are Maratha.*

Superior Maratha social cohesion makes Maratha landlords more able to credibly commit to providing a given level of insurance to Maratha workers, than to non-Maratha workers. Consequently, the minimal credible level of promised transfer required to buy the support of non-Maratha workers will also be credible in buying the support of Maratha workers. But the converse is not true. There will exist levels of insurance transfer that a worker would require for giving political support to a Maratha that the landlord can only credibly promise if the worker is also a Maratha.

**Corollary 2:** *Caste enters condition (5) only via the network based explanation for Maratha dominance. Accordingly this condition is more likely to hold when votes are traded between landlords who are Maratha and workers who are non-Maratha.*

Access to caste based trading networks is a benefit that Maratha landlords can only offer to non-Maratha workers. Maratha workers already have their own access. Consequently, any situation where a Maratha landlord and Maratha worker find it mutually beneficial to trade votes will also find a Maratha landlord and non-Maratha worker similarly benefiting. But the converse

is not true. There will exist some cases where a Maratha landlord and only a non-Maratha worker could mutually benefit by vote trading.

The upshot of these two corollaries is that Maratha landlords should be able to buy the votes of non-Maratha workers with lower insurance transfers than those they would have to make to Maratha workers. However they will be credibly able to promise larger insurance transfers to Maratha workers than non-Maratha ones.

Since we do not directly observe insurance transfer payments, it is not possible to test directly for the impact of these different avenues on the possibility of vote trading. However it is possible to indirectly test these mechanisms by observing the types of villages that exhibit the outcomes we associate with landlord dominance. We have already seen that Maratha land dominated villages seem to be more likely to exhibit outcomes consistent with landlord dominance of the GP. We now check to see whether Maratha land dominated villages are more likely to exhibit outcomes consistent with landlord dominance when the population of the village is more Maratha or when it is more non-Maratha.

According to Corollary 1, if superior Maratha social cohesion is the root cause of Maratha landlord power, then Maratha Land Dominance should be more likely to lead to clientelist vote trading the higher the frequency of Maratha workers in a village. As insurance transfers to Maratha peasants in return for political support are more likely to be incentive compatible. So, increasing the Maratha population in Maratha landlord villages should: negatively affect GP delivery of pro-poor policies; positively impact the provision of insurance, policy accord and social capital; negatively affect wages; and positively affect yields and profits.

According to Corollary 2, the converse should happen if Maratha networks are the source of Maratha landlord power. Network advantages are most pronounced when Maratha landlords trade votes with non-Maratha workers. Non-Maratha workers are willing to sell their vote at a lower insurance price than Marathas. Consequently, increasing the Maratha population in Maratha Landlord Dominated villages should make vote-trading less likely to occur. Accordingly higher Maratha population in Maratha Land Dominated villages should imply: better pro-poor policy implementation; worse social capital; more contested views on village governance; and less widespread insurance provision. This should, however, lead to a higher share of agricultural returns accruing to workers through higher wages together with lower yields and less profits for landlords.

There is one more caveat that has to be satisfied for our empirical analysis to go through. Controlling the GP does not necessarily correspond to controlling the majority of votes within a village. This is because the GP comprises members elected from village wards. The wards

are based on geographic neighbourhoods within the village, and these are often, but not always, caste based. Majority control of a GP requires obtaining a controlling majority of elected ward representatives. So depending on the mapping of population (voter) numbers to seats on the council, some seats may be cheaper to buy (i.e., require fewer votes) than others. Since we do not have information linking caste neighbourhoods to voting wards, nor do we have ward population numbers, we proceed by assuming that GP control is more likely to rest with landlords if the proportion of the voters who find it individually rational and incentive compatible to trade political support increases. Under this assumption, the two corollaries thus imply opposite signs on an interaction term between Maratha Land Dominance and Maratha population introduced into our baseline regressions:

**Implication:** *The interaction term between Maratha landholding and Maratha population numbers should have the same sign as the direct effect of Maratha Land Dominance according to the Superior Social Cohesion explanation and the converse sign according to the Caste Networks explanation.*

We can test this directly by adding an interaction term between Maratha Land Dominance ( $D_{vr}$ ) and Maratha Population Proportion ( $P_{vr}$ ) to our baseline regressions.

## 8 Regression Results with Interaction Effects

We run two analogous estimating equations to (1) and (2):

$$Y_{ivr} = \lambda_0 + \lambda_1 X_{ivr} + \lambda_2 Z_{vr} + \lambda_3 D_{vr} + \lambda_4 P_{vr} + \lambda_5 D_{vr} * P_{vr} + \pi_r + \xi_{ivr} \quad (6)$$

and,

$$G_{vr} = \theta_0 + \theta_1 W_{vr} + \theta_2 D_{vr} + \theta_3 P_{vr} + \theta_4 D_{vr} * P_{vr} + \sigma_r + \nu_{vr} \quad (7)$$

Tables 8, 9, and 10 present the results obtained by including the interaction term in all of the previous regressions, with the coefficient of interest corresponding to  $\lambda_5$  ( $\theta_4$ ) in the household (village) level regressions. As a robustness check, we also ran the above estimations using a measure of Maratha land dominance constructed from our household level data, as discussed in Section 2. In these estimations,  $D_{vr}$  is instead a continuous variable equal to the proportion of total village land owned by Marathas. These estimation results are reported in Appendix B. All of the main results of this section follow in these alternative estimations.

Table 8 first presents the results for the governance indicators. As we saw in the first set of regressions, reported in Section 4, Maratha Land Dominance leads to poor policy performance – revenues are lower, programs are less frequently available and the Pradhan is less active in meeting



higher level political operatives to obtain resources. The interaction based regressions in Table 8 come down overwhelmingly in favor of Maratha networks being the key factor in explaining this. Consider measures of GP Revenue (the top three rows) first. Including the interaction shows that the effect of Maratha land dominance on revenues continues to be lower in Maratha Landlord Dominated villages, but this is mitigated by increases in Maratha population numbers. The coefficient on the interaction term is positive in all three regressions and significant for two of them.

The second set of rows show the same pattern for poverty related policies. These are more likely to not exist in Maratha Land Dominated villages, but as the proportion of the village Maratha increases, the effect of Maratha landlord dominance is mitigated. Finally, the results on the activities of the Pradhan are more mixed, but interestingly with respect to meetings with the most important individual for obtaining resources (DC, the District Controller) these also line up as predicted by the Caste Networks explanation.

**\*\*\*\*Insert Table 8\*\*\*\***

Consider now Table 9. The social capital measures are in the first six rows. As before, answers to these reflect higher levels in Maratha Land Dominated villages. As the caste network explanation suggests, the effects of Maratha Land Dominance are mitigated by an increase in Maratha population. This is particularly striking as it suggests that the positive social capital enhancing effect of Maratha Land Dominance is less likely to occur as the proportion of the village that is Maratha increases. This suggests a negative effect on social capital arises when the caste coherence of the landed and non-landed classes in the village rises. Again this is consistent with Maratha Networks explanations, inconsistent with the Superior Social Cohesion explanation for Maratha dominance, and surprising on a priori grounds.

The second set of rows suggest the reason this may be occurring. Maratha Land Dominance, as before, directly predicts an increase in the provision of insurance to the low caste and poor from landlords and the upper castes, but is less likely to do so as the proportion of the village that is Maratha increases, as predicted by the networks explanation. Views on the village governance priorities, the third set of rows, also reflect the networks explanation. All castes are more likely to want collective and non-targeted expenditures in Maratha Land Dominated villages, but this is mitigated by increases in the proportion of the village that is Maratha.

Another means of unearthing the mechanism of effect is provided by looking at the reasons for voting. We asked an additional question regarding this in the household surveys. If superior Maratha social cohesion underpins Maratha landlord power, then it should be the Marathas who are more likely to vote based on personal connections in Maratha landlord villages, and

this tendency should be greatest in the villages with a higher proportion Marathas. (Maratha workers are cheaper to buy, making the interaction term enhance the direct effect). In contrast, the trading networks argument predicts increased Maratha land dominance should lead to the non-Marathas being more likely to vote personal, but this should be less likely the higher the proportion of Marathas in the population.

The final estimations in Table 9 support the latter avenue of effect. None of Maratha land dominance, the proportion of population Maratha, nor the interaction between these two has any effect on the likelihood that a Maratha will vote based on personal connections. However non-Marathas are more likely to vote based on personal connections in Maratha land dominated villages, moreover, exactly as dominance based on network patronage would suggest, this is less likely to occur the larger the proportion of the Maratha Land Dominated village that is Maratha.

**\*\*\*\*Insert Table 9\*\*\*\***

Economic variables also line up as predicted by the Maratha networks model (as seen in Table 10 below). Wages, though lower in Maratha landlord dominated villages, (note the inconsistency of this finding with the possibility of mismeasured land productivity leading to spurious correlations) are increased when land dominance is interacted with the proportion of the village that is of the Maratha caste. Again, this is as would be predicted when Maratha networks are the source of Maratha landlord dominance.<sup>32</sup> This pattern occurs for Males, Females, low castes, and those with and without insurance, suggestive of a village wide price effects, and not just a reflection of the wages of individuals being traded for direct benefits. The very broad nature of the effects supports the central hypothesis of vote trading in return for insurance benefits. The second bank of regressions, in rows 10-16, are also consistent with the explanations for landlord support. Yields are higher under Maratha Land Dominance, but this is mitigated by the effects of Maratha population numbers – note once again the unlikelihood of mismeasured land productivity explaining that pattern. If land productivity is higher in non-observable ways in Maratha land villages then it is difficult to explain why it should raise yields by more where Maratha population numbers are lower, and why it should suppress wages by more where Marathas are less predominate.

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<sup>32</sup>Note that a direct explanation for the correlation between wages, insurance and Maratha land dominance could arise if it is individuals who have insurance that also accept lower wages in Maratha land villages. This is distinct from the relationship between wages and insurance arising through the equilibrium effect of reduced programs in Maratha land villages. We can test this alternative explanation by analyzing the effects of Maratha land dominance on wages for individuals who report having insurance and those who do not. According to the Maratha trading network explanation such effects should be present both for individuals who have insurance and those who do not, but they should be mitigated by Maratha population numbers. According to an explanation based on workers accepting lower wages in return for insurance, the negative effect on wages should not arise for individuals without insurance. As table 10 indicates, individuals both with, and without insurance, report lower wages in Maratha Land Dominated villages, and this is mitigated by Maratha population numbers.

\*\*\*\*Insert Table 10\*\*\*\*

As we have seen above, the interaction term between Maratha land dominance and Maratha population numbers enters in a way that is largely consistent with the predictions of the network explanation for Maratha dominance, and uniformly inconsistent with the superior Maratha social cohesion explanation. A further direct test of this explanation is to add an interaction term to the regressions on trading networks, to see whether the likelihood of a low caste individual using Maratha trading networks is mitigated by the prevalence of Marathas in the population. The final set of estimations in Table 10 does this. Again the direction of effect supports the network explanation for almost all variables. Non-Marathas are more likely to use Maratha traders in Maratha land dominated villages, this is true both for traders from within the village and Maratha traders from outside it. They are more likely to obtain these inputs on better terms, and they are more likely to borrow from a Maratha lender as well as doing so at a reduced interest rate. The interaction term on Maratha population undoes all of these effects, making it less likely that they use the networks and obtain credit at lower rates, again consistent with the Maratha networks underpinning for political dominance.

### 8.1 Non-linear Interaction Effects

In this section we explore further the nature of the interaction effects between the population proportion of Marathas and Maratha land dominance. In particular, we create a dummy variable,  $M_{vr}$ , which is equal to one if the proportion of Marathas is greater than 0.35; and zero otherwise. In Maratha land dominated villages, 0.35 is the lowest population proportion under which Marathas also dominate the population, i.e., they are also the single largest caste group in the village. We would expect that, in comparison to the omitted category (0-0.35), having a large proportion of the village be Maratha should largely undo the effect of Maratha land dominance. Why? In such villages, control of the GP depends on the Maratha landlords obtaining the votes of the Maratha peasantry block. Consequently, purchasing the votes of non-Marathas, though still cheaper according to a Maratha network theory explanation, only increases the majority and is a waste.

We thus run the following estimations:

$$Y_{ivr} = \varphi_0 + \varphi_1 X_{ivr} + \varphi_2 Z_{vr} + \varphi_3 D_{vr} + \varphi_4 M_{vr} + \varphi_5 D_{vr} * M_{vr} + \tau_r + \eta_{ivr} \quad (8)$$

and

$$G_{vr} = \psi_0 + \psi_1 W_{vr} + \psi_2 D_{vr} + \psi_3 M_{vr} + \psi_4 D_{vr} * M_{vr} + \chi_r + \zeta_{vr} \quad (9)$$

where  $M_{vr} = 1$  if  $P_{vr} > 0.35$ ; and zero otherwise.

Table 11 presents the results for the various dependent variables. For most variables the interaction term is largely being driven by the situations when Marathas are a clear majority of the village. Once again, this is as would be expected under the networks explanation. Under this explanation, it is the non-Marathas whose votes are the cheapest for Maratha landlords to buy. So when the proportion of this group is not significant enough to buy power (when Marathas are the dominant population) the effects of Maratha landlord dominance are undone – hence the coefficient on the interaction term being opposite sign to the direct effect when Maratha population is “large”.

\*\*\*\*\*insert Table 11\*\*\*\*\*

We explored numerous other empirical specifications, such as dividing the proportion of Marathas into intervals of 0.10 or larger. Results always suggested that having a Maratha population of around 35-40% or more, were driving the interaction effects of the previous section. As a further robustness check, we ran the above estimations only for those villages where  $P_{vr} > 0.35$ . In these estimations, neither  $D_{vr}$  or the interaction term  $D_{vr} * P_{vr}$ , have significant effects on the estimated outcomes ( $Y_{ivr}$  and  $G_{vr}$ ). Thus confirming the finding that it is only in comparison to the omitted category ( $0 \leq P_{vr} \leq 0.35$ ), that having a large proportion of the village be Maratha should undo the effect of Maratha land dominance.<sup>33</sup>

## 9 Conclusion

Formal design of institutions is clearly important, but what ultimately matters is whether an institution is, in fact, performing the task it is designed to perform. It is perhaps not so surprising for traditional hierarchies to resist and distort the working of these institutions if they can. In our study, landlords belonging to the historically dominant caste capture political support through the perpetuation of long standing patron-client relationships with the poorer peasants in the local area and use it to block central government schemes aimed at helping the poor. The situation we analyze is thus different from the ‘elite capture’ described by Engerman and Sokoloff (2006). The elite capture in Latin America that they describe was less subtle. It influenced the choice of institutions. In many areas of the developing world, especially in South Asia and Africa with strongly entrenched traditional hierarchies, a more subtle sabotage of institutions may be the more relevant.

Secondly, there is a widespread belief that collective action is more effective in communities characterized by better social capital which is typically measured through questionnaires that

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<sup>33</sup>Rather  $D_{vr}$  is significant in the estimations on the sample of villages with  $0 \leq P_{vr} \leq 0.35$ .

include ‘trust’ questions. Our study shows that a community under a patron-client relationship can give highly positive answers on trust questions, but whether to characterize such a community as one with high social capital becomes an open question. If social capital is something that facilitates collective action and if poverty alleviation schemes such as the employment guarantee scheme in Maharashtra are blocked successfully by the local elite, it is questionable to characterize such a community as one with high social capital.

Our study also raises some policy oriented questions. If the best laid schemes of a progressive central government are thwarted by the local elite through a clever use of clientism, what should the government do? One solution is to break the trap of clientism by ending the dependence of the rural poor on consumption insurance supplied by the local elite. It is difficult to do this without ending the persistence of poverty, but this of course is a catch-22. There are interim solutions such as food subsidies or conditional or unconditional cash transfer schemes, as are being tried out in many parts of the developing world with various degrees of success. Any consumption subsidy would help in reducing the dependence of the poor clients on the rich patrons. But this too leads to a catch-22 of another sort. Is it possible to implement a ‘reliable and successful’ government scheme without the cooperation of the local elite? In fact, what our study shows is that it is difficult to get these schemes past the local elite.

A possible solution is technological – use information technology to bypass the need for any approval by the local elite. Some government schemes like employment guarantee schemes cannot be implemented without participation by the local government (GP), but some like a food subsidy can. The Government of India has launched a nationwide program to give every citizen an identity card with biometric identification. This initiative may enable the government to open a bank account for each citizen, allowing food subsidies to be delivered directly through an electronic transfer into the bank account of intended recipients. Our study suggests this has the potential to significantly undermine political clientism in rural India.

Villages operating under clientelist vote-trading are leaving money on the table. As reflected in village records, and as reported by our households, they make less use of monies freely provided by the state because they have fewer pro-poor programs. Our explanation is that this suits the interests of landlords who aim to ensure labor compliance and low wage costs. But why do the elite not claim some of these resources for themselves? We think that the immense amount of information shared in our single Panchayat villages makes such elite subterfuge impossible to achieve. Our findings here, in fact, echo those of Bardhan and Mookherjee (2006b) who found very little misallocation of funds coming into Bengali villages subject to elite capture. But it is still an open question as to why these clientelist partners do not enter into a Coasian bargain that would at least let the funds come into the village, and then organize some sharing of them.

There are a number of possible reasons. Firstly, the elite may simply be wary of "opening the floodgates". Entrenching schemes that, up to a point, they could control, but which could be wrested away from them by shifts in the political structure. Secondly, since it is the poor who are the intended beneficiaries of such schemes, and these individuals are liquidity constrained, it may simply not be possible for them to make the transfers required up front to ensure the elite obtain their share, and they may not be credibly able to commit to delivering the elite a share ex post. But these are simply conjectures. Currently we admit to being unable to satisfactorily answer this question.

Finally, a note with respect to welfare. Given the complete lack of coercion that we have observed throughout our sample, and the high rate of political participation and knowledge exhibited by our villagers, we think that the poor who cede political control to the elite are doing so freely, and in return for a set of benefits that they assess to be in their best interests. These individuals should not be made worse off by clientilism. But, as noted before, not all workers are privileged to be in a patron client relationship. Landlords only need to 'buy' a controlling political stake. Thus, workers who are not so privileged are deprived not only of the patronage (consumption insurance and/or access to Maratha trading network) but the blocked government schemes that would have benefitted them. The existence of patron-client relationships thus has very different consequences for the two groups of workers, suggesting no simple welfare conclusions can be drawn.

## References

- [1] Acemoglu, Daron, Simon Johnson, and James A. Robinson 2001, The Colonial Origins of Comparative Development: An Empirical Investigation December 2001, *American Economic Review*, volume 91, pp. 1369–1401.
- [2] Algan, Yann and Pierre Cahuc (2010) Inherited Trust and Growth," *American Economic Review*, , vol. 100(5), pages 2060-92
- [3] Altekar, A. S. (1927) *A History of Village Communities in Western India*. Bombay: Oxford University Press.
- [4] Anderson, Siwan (2011) "Caste as an Impediment to Trade" *American Economic Journal: Applied Economics*, 3(1), 239-63.

- [5] Banerjee, A. and L. Iyer (2005) "History, Institutions, and Economic Performance: The Legacy of Colonial Land Tenure Systems in India". *American Economic Review*, 95(4), 1190-1213.
- [6] Banerjee, Abhijit and Lakshmi Iyer (2010) "Colonial Land Tenure, Electoral Competition, and Public Goods in India". in *Natural Experiments of History*. Jared M. Diamond and James A. Robinson (eds.), Harvard University Press. p 185-220.
- [7] Banerjee, Abhijit and Rohini Pande (2007) "Parochial Politics: Ethnic Preferences and Politician Corruption". BREAD Working Paper No. 152.
- [8] Banerjee, Abhijit & Somanathan, Rohini, 2007. "The political economy of public goods: Some evidence from India," *Journal of Development Economics*, Elsevier, vol. 82(2), pages 287-314.
- [9] Bardhan Pranab K. & Dilip Mookherjee, 2000. "Capture and Governance at Local and National Levels," *American Economic Review*, vol. 90(2), pages 135-139, May.
- [10] Bardhan, Pranab & Mookherjee, Dilip, 2005. "Decentralizing antipoverty program delivery in developing countries," *Journal of Public Economics*, Elsevier, vol. 89(4), pages 675-704, April.
- [11] Bardhan, Pranab & Dilip Mookherjee, 2006a. "Decentralisation and Accountability in Infrastructure Delivery in Developing Countries," *Economic Journal*, Royal Economic Society, vol. 116(508), pages 101-127, 01.
- [12] Bardhan, Pranab & Dilip Mookherjee, 2006b "Pro-poor targeting and accountability of local governments in West Bengal" *Journal of Development Economics*, 79, 303-327.
- [13] Besley, Timothy & Robin Burgess, 2000. "Land Reform, Poverty Reduction, And Growth: Evidence From India," *The Quarterly Journal of Economics*, MIT Press, vol. 115(2), pages 389-430, May.
- [14] Besley, Timothy, Rohini Pande, Lupin Rahman, and Vijayendra Rao (2004) "The politics of public good provision: Evidence from Indian Local Governments" *Journal of the European Economic Association Papers and Proceedings*, 2(2-3) 416-426.
- [15] Besley, Timothy, Rohini Pande, and Vijayendra Rao (2011) "Just Rewards? Local Politics and Public Resource Allocation in South India" *World Bank Economic Review*, forthcoming.

- [16] Beteille, A. (1996) *Caste, Class and Power: Changing Patterns of Stratification in a Tanjore Village*. University of California Press, Berkeley.
- [17] Carter, Anthony T. (1974) *Elite Politics on Rural India: Political Stratification and Political Alliances in Western Maharashtra*. Cambridge University Press, Cambridge.
- [18] Chattopadhyay, Raghavendra and Esther Duflo (2004) "Women as policy makers: Evidence from a Randomized Policy Experiment in India" *Econometrica*, 72 (1409-1443).
- [19] Chandra, Kanchan, (2004) *Why Ethnic Parties Succeed: Patronage and Ethnic Headcounts in India*. Cambridge: Cambridge University Press
- [20] Dahiwalé, S. M. (1995) "Consolidation of Maratha Dominance in Maharashtra" *Economic and Political Weekly*, 30(6), 336-342.
- [21] Drekmeier, Charles (1962) *Kingship and Community in Early India*. Stanford: Stanford University Press.
- [22] Duflo Esther & Petia Topalova, 2003. "Unappreciated Service: Performance, Perceptions, and Women Leaders in India," Natural Field Experiments 0037, The Field Experiments Website
- [23] Easterly, William & Levine, Ross, 1997. "Africa's Growth Tragedy: Policies and Ethnic Divisions," *The Quarterly Journal of Economics*, MIT Press, vol. 112(4), pages 1203-50, November.
- [24] Engerman, Stanley L., and Kenneth L. Sokoloff "The Persistence of Poverty in the Americas: The Role of Institutions," in Samuel Bowles, Steven N. Durlauf, and Karla Hoff, eds., *Poverty Traps* (Princeton University Press, Princeton, 2006), 43–78.
- [25] Guiso, Luigi & Paola Sapienza & Luigi Zingales, 2008. "Long Term Persistence," NBER Working Papers 14278, National Bureau of Economic Research, Inc.
- [26] Kamat, A. R. (1980) "Politico-Economic Developments in Maharashtra: A Review of the Post-Independence Period" *Economic and Political Weekly*, 15(39), 1627-1630.
- [27] Kosambi, D. D. (1955) "The basis of ancient Indian History, I" *Journal of the American Oriental Society*, 74(4), 330-337.
- [28] Kosambi, D. D. (1969) *Ancient India: A History of its Culture and Civilization*. New York: World Publishing Company.



- [29] Lele, Jayant (1981) *Elite Pluralism and Class Rule: Political Development in Maharashtra India*. New York.
- [30] Munshi, K. and M. Rosenzweig (2005) "Why is Mobility in India so Low? Social Insurance, Inequality, and Growth" BREAD Working Paper No. 97.
- [31] Munshi, Kaivan. and Mark Rosenzweig. 2008. "The Efficacy of Parochial Politics: Caste, Commitment, and Competence in Indian Local Governments." BREAD Working Paper No. 182.
- [32] Nunn, Nathan (2008) The Long-Term Effects of Africa's Slave Trades," 2008. *Quarterly Journal of Economics*, 123 (1): 139-176.
- [33] Nunn, Nathan and Leonard Wantchekon (2010) "The Slave Trade and the Origins of Mistrust in Africa," *American Economic Review*, forthcoming
- [34] Palshikar, Suhas, and Rajeshwari Deshpande (1999) "Electoral Competition and Structures of Domination in Maharashtra" *Economic and Political Weekly*, 34 (34/35), 2409-2422.
- [35] Persson, Torsten and Guido Tabellini (2000) *Political Economics*, The MIT Press.
- [36] Putnam, Robert, Robert Leonardi and Raffaella Y. Nanetti Making Democracy Work: Civic Traditions in Modern Italy.
- [37] Ransom, Roger L. and Richard Sutch. *One Kind of Freedom: The Economic Consequences of Emancipation*. New York: Cambridge University Press, 1977
- [38] Rosenthal, Donald B. (1977) *The Expansive Elite: District Politics and State Policy-Making in India*. University of California Press, Berkeley.
- [39] Scott, James (1979) *The Moral Economy of the Peasant: Rebellion and Subsistence in South-east Asia*, Yale University Press, 1979
- [40] Sirsikar, V. M. (1970) *The Rural Elite in a Developing Society: A Study in Political Sociology*. New Delhi.
- [41] Subramanian, Narendra (1999) *Ethnicity and Populist Mobilization: Political Parties, Citizens and Democracy in South India*. Delhi: Oxford University Press
- [42] Tabellini, Guido (2005) Culture and Institutions: Economic Development in the Regions of Europe," CESifo Working Paper Series 1492, CESifo Group Munich.

- [43] Vora, Rajendra (1996) "Shift in Power from Rural to Urban Sector" *Economic and Political Weekly*, January, 13-20.

*Table 1 - Village Geographic, Climatic, and Demographic Measures by Caste Dominance*

Variable	Maratha Land Dominated	Non-Maratha Land Dominated	Equivalence of Means
Population	2071.8 (639.7)	2032.3 (1012.0)	39.5 (95.1)
Households	369.9 (60.4)	374.8 (64.5)	-4.9 (7.8)
Proportion SC	0.14 (0.08)	0.15 (0.11)	-0.016 (0.012)
Distance to Town	21.9 (12.6)	20.3 (12.9)	1.6 (1.5)
Distance to Road	2.6 (2.7)	2.8 (2.9)	0.2 (0.3)
Distance to Water	2.9 (2.2)	3.0 (2.5)	-0.05 (0.3)
Uncultivable Land	97.3 (116.6)	94.0 (122.7)	3.3 (14.1)
Area - Cultivated	2225.8 (964.1)	2170.4 (1655.5)	55.3 (182.8)
Area - Irrigated	504.7 (718.7)	489.9 (929.4)	14.8 (116.1)
Area - Rainfed	1586.2 (1074.1)	1501.0 (1107.6)	85.2 (156.7)
Area - Tree/groves/orchards	29.1 (64.5)	26.6 (59.6)	2.5 (9.2)
Area - Forest	99.1 (335.9)	54.8 (135.4)	44.3 (41.2)
Area - Pasture/grazing	58.6 (147.0)	42.7 (104.8)	15.9 (19.5)
Area - Fallow	168.5 (283.6)	167.9 (521.3)	0.6 (56.6)
Area - Inhabited	30.4 (84.6)	35.3 (94.5)	4.9 (13.1)
Area - Community/Panchayat	8.9 (17.8)	12.8 (32.7)	3.9 (3.6)
No Alkalinity	0.89 (0.31)	0.87 (0.34)	0.02 (0.04)
No Waterlogging	0.88 (0.33)	0.82 (0.39)	0.06 (0.05)
No Soil Erosion	0.92 (0.26)	0.87 (0.34)	0.06 (0.04)
Topsoil Nitrogen	2.82 (0.60)	2.82 (0.38)	0.003 (0.06)
Topsoil Organic Carbon	3.03 (0.43)	3.00 (0)	0.03 (0.04)
Topsoil Ph	3.98 (0.41)	3.93 (0.26)	0.05 (0.04)
Soil Depth	0.25 (0.15)	0.24 (0.16)	0.01 (0.02)
Soil Color	0.54 (0.21)	0.54 (0.21)	0.005 (0.03)
Salinity	1.89 (0.17)	1.89 (0.18)	0.0002 (0.02)
Percolation	1.81 (0.20)	1.83 (0.21)	0.01 (0.03)
Drainage	1.82 (0.22)	1.83 (0.19)	0.02 (0.03)
Rainfall	62.3 (14.7)	64.9 (19.7)	2.6 (2.0)
Observations	194	112	

Notes: The sample excludes areas where no Marathas reside (Eastern Vidarbha). Standard deviations are in parentheses in first two columns. Standard errors are in parentheses in the third column. The first seven variables come from the Village Amenities and GPS Data from the Census of India 2001. Our own data on village population numbers do not vary by caste dominance either. The next nine variables, pertaining to land-use patterns, also come from the Village Census of India 2001. The first three measures of soil quality come from our village survey. The next three variables pertaining to topsoil (30 cm) content come from FAO-UNESCO soil maps. The last five variables on soil quality come from our household survey, aggregated up to the village level. Rainfall information comes from the India Meteorological Department.

*Table 2 - Government Policies, Revenues, and Public Goods*

Variable	Mean	Standard Deviation	Observations
Total Programs	5.33	2.56	304
BPL Programs	1.71	0.89	304
EGS	0.20	0.21	304
Meetings with CEO (per year)	3.22	6.61	319
Meetings with MP (per year)	1.72	8.23	318
Meetings with DC (per year)	1.26	4.58	319
Revenue/capita	149.8	360.8	229
Households with electricity (%)	72.6	31.8	1376
Public taps (per capita)	0.17	0.34	1164
Public toilets (per capita)	0.01	0.05	1210
Wells (per capita)	0.06	0.14	1153
Street Lights (per capita)	0.16	0.24	1213
Good Road	0.32	0.47	1327
Improvements (past 5 years)	1.54	1.52	1387

Notes: Total Programs refers to the total number of the 15 Government Schemes implemented in the village. BPL refers to the number of the possible 8 programs targeted at individuals below the poverty line. EGS refers to the Employment Guarantee Scheme. We obtained information on the availability of programs from our household survey. CEO, MP, and DC meetings all refer to the number of times in the last year that the Gram Pradhan has met with officials from higher level governments to seek resources (DC refers to District Collector)). This information is from the GP Questionnaire. Revenue refers to data collected from the balance sheets of submitted by the GPs, these are computed per capita of the GP population. We obtained the majority of this information using the RTI Act. The information covers the last 24 months. Public good information is reported at the neighbourhood level. They include all of the public goods which the village GP is responsible for with regards to provision and maintenance (Health and Education are the responsibility of higher level governments (either at the Block or District Level). Improvements refers to total number of improvements (financed by the GP) to the neighbourhood in the past five years.

Table 3 - Characteristics by Caste

Variable	Marathas	OBCs	SCs
Cultivator (Overall)	0.83 (0.38)	0.65 (0.48)	0.33 (0.47)
Cultivator (Maratha Land Dominated)	0.84 (0.36)	0.66 (0.47)	0.35 (0.48)
Agricultural Labourer (Overall)	0.10 (0.30)	0.19 (0.40)	0.53 (0.50)
Agricultural Labourer (Maratha Land Dominated)	0.09 (0.29)	0.18 (0.38)	0.52 (0.50)
Landless (Overall)	0.13 (0.34)	0.31 (0.46)	0.62 (0.48)
Landless (Maratha Land Dominated)	0.12 (0.32)	0.29 (0.45)	0.60 (0.49)
Average Land Owned (Overall)	6.74 (7.38)	6.00 (6.22)	3.67 (3.28)
Average Land Owned (Maratha Land Dominated)	6.86 (7.53)	5.70 (5.96)	3.47 (2.99)
> 5 Acres (Overall)	0.39 (0.49)	0.35 (0.48)	0.15 (0.36)
> 5 Acres (Maratha Land Dominated)	0.40 (0.49)	0.33 (0.47)	0.14 (0.35)
> 10 Acres (Overall)	0.16 (0.37)	0.13 (0.33)	0.03 (0.18)
> 10 Acres (Maratha Land Dominated)	0.16 (0.37)	0.12 (0.33)	0.03 (0.18)
Voted	0.89 (0.31)	0.93 (0.26)	0.90 (0.30)
Supposed to Vote	0.08 (0.28)	0.09 (0.29)	0.10 (0.29)
Forced Vote	0.002 (0.04)	0.0004 (0.02)	0.001 (0.03)
Unopposed Election	0.09 (0.29)	0.04 (0.21)	0.07 (0.26)
Raise concerns to Pradhan	0.96 (0.19)	0.96 (0.18)	0.96 (0.18)
Met Pradhan	0.97 (0.16)	0.95 (0.22)	0.96 (0.20)
Observations	3259	2659	2019

Notes: Standard deviations are in parentheses. Occupation refers to main source of livelihood for household. Total land owned is in acres and are reported conditional on owning land. Voted refers to voted in the last GP election. Supposed to vote refers to "supposed to vote - does not mean anything". Forced vote refers to forced to vote for a given candidate by friends, family, or villagers. Unopposed election - refers to single candidate election (this was the main reason for not voting). The fourth variable is the response to "Do you feel you can raise concerns (bring oral requests) directly to the Gram Pradhan?"

Table 4 - Control of Panchayat Measures

Variable	Overall	MLD	MLD	MLD
			Maratha Majority	Non-Maratha Majority
Population Proportion of Marathas	0.41 (0.31)	0.54 (0.26)	0.71 (0.13)	0.28 (0.19)
Maratha Pradhan	0.41 (0.49)	0.57 (0.50)	0.64 (0.48)	0.45 (0.50)
Maratha Pradhan - Unreserved	0.63 (0.48)	0.82 (0.38)	0.94 (0.24)	0.64 (0.49)
Maratha Pradhan - Reserved for Women	0.62 (0.49)	0.89 (0.31)	0.95 (0.23)	0.78 (0.44)
Reserved Pradhan	0.58 (0.49)	0.57 (0.50)		
Reserved Pradhan - Women	0.27 (0.45)	0.26 (0.44)		
Reserved Pradhan - SC/ST	0.24 (0.43)	0.24 (0.43)		
Reserved Pradhan - OBC	0.49 (0.50)	0.50 (0.50)		
Proportion Reserved on GP	0.59 (0.19)	0.56 (0.16)		
Observations	315	193	120	73

Notes: MLD denotes Maratha Land Dominant. Data on proportion of Marathas comes from the village survey. Data on characteristics of the Pradhan come from the GP Survey.

Table 5 - *Estimations of GP Measures*

Dependent Variable	Coefficient ( $\gamma_3$ ) Prop. Marathas	Coefficient ( $\gamma_2$ ) MLD	Obs
Maratha Pradhan (All)	1.62 (0.37)***	0.70 (0.33)**	289
Maratha Pradhan (Unreserved)	2.42 (0.62)***	1.71 (0.61)***	118
Electricity (% households)	-6.26 (6.61)	-4.46 (4.58)	1111
Public Taps (per capita)	-0.11 (0.06)	0.03 (0.05)	1062
Public Toilets (per capita)	0.01 (0.01)	-0.01 (0.005)*	1102
Public Wells (per capita)	0.03 (0.04)	-0.03 (0.04)	1055
Street Lights (per capita)	0.01 (0.06)	-0.06 (0.03)	1108
Good Road	0.12 (0.35)	0.24 (0.22)	1062
Improvements (last 5 years)	0.10 (0.31)	0.26 (0.21)	1128
Revenue (1) (per capita)	-179.3 (132.5)	-106.4 (40.9)***	204
Revenue (2) (per capita)	0.10 (4.64)	-7.41 (3.85)*	290
Expenditure (per capita)	0.43 (4.44)	-6.66 (3.56)*	290
Programs (1)	-0.02 (0.42)	-0.73 (0.28)***	7752
BPL Programs (1)	0.15 (0.16)	-0.26 (0.10)***	7752
EGS (1)	0.52 (0.19)	-0.31 (0.12)***	7725
Programs (2)	-0.08 (0.47)	-0.76 (0.29)***	275
BPL Programs (2)	0.11 (0.17)	-0.28 (0.10)***	275
EGS (2)	0.15 (0.05)	-0.07 (0.03)**	275
CEO Meetings	2.50 (1.62)	-3.66 (1.36)***	290
MP Meetings	0.94 (2.30)	-3.30 (1.98)*	290
DC Meetings	-1.10 (1.07)	-1.72 (0.68)***	290
Lobby for funds	0.26 (0.34)	-0.61 (0.26)**	273

Notes: All estimations include GP, geographic, demographic, climatic, regional controls. A single asterix denotes significance at the 10% level, double for 5%, and triple for 1%. Robust standard errors are in parentheses. Regression disturbance terms are clustered at the Block level. Regressions are OLS except the first two regressions, EGS (1), and "Lobby for funds" are probit estimations. The public good data is at the neighbourhood level. Regression disturbance terms are clustered at the village level for these estimations. Improvements refers to total number of improvements (financed by the GP) to the neighbourhood in the past five years (Results are similar if we break these improvements up by category of public good (drinking water, sanitation, electricity, housing). Caste identity of the majority of the neighbourhood population is included as a control in these regressions. Revenue (1) refers to data collected from the balance sheets (covers last 24 months) submitted by the GPs. We obtained the majority of this information using the RTI Act. Revenue (2) and Expenditure are annual per capita values from the 2001 Village Census. Information on the existence of all programs (Programs (1); BPL Programs (1); and EGS (1)) are reported from household level data. Programs (2); BPL Programs (2); and EGS (2), are variables which aggregate this household level information up to the village level to run alternative village level regressions. Regression disturbance terms are clustered at the village level for the household-level regressions. "Lobby for funds" is a binary variable equal to one if the GP has lobbied for government funds to address a specific problem as reported from the Village Questionnaire.

Table 6 - Estimations of Social Capital, Inter-Caste Relations, and Collective Village Life

Dependent Variable	Coefficient ( $\beta_4$ )	Coefficient ( $\beta_3$ )	Obs
	Prop Marathas	MLD	
Trust (1)	0.003 (0.07)	0.07 (0.04)*	7123
Trust (2)	-0.23 (0.08)**	0.09 (0.05)*	7115
Cheat	0.23 (0.13)*	-0.15 (0.09)*	7852
Repair	-0.16 (0.10)*	0.14 (0.07)**	8130
Donated Cash	-0.11 (0.11)	0.18 (0.07)***	8175
Donated Labour	0.10 (0.12)	0.18 (0.08)**	8175
Inter-Caste (1) [Small land holders]	-0.003 (0.10)	0.13 (0.07)**	4941
Inter-Caste (2) [Small land holders]	-0.08 (0.10)	0.15 (0.07)**	4941
Inter-Caste (3) [Small land holders]	-0.07 (0.10)	0.14 (0.07)**	4941
Inter-Caste (4) [Small land holders]	0.03 (0.11)	0.13 (0.07)*	4941
Inter-Caste (5) [Small land holders]	-0.10 (0.11)	0.13 (0.07)*	4941
Target Village [Small land holders]	-0.62 (0.36)*	0.65 (0.31)**	4226
Shared Funds [Small land holders]	-0.20 (0.47)	1.03 (0.34)***	3938
Festivals	-0.06 (0.10)	0.12 (0.06)**	8167
Trust Own Caste [All Marathas]	0.09 (0.12)	0.04 (0.08)	3114
Trust Own Caste [Large land Marathas]	0.12 (0.20)	0.16 (0.15)	1328

Notes: Regression disturbance terms are clustered at the village level. Robust standard errors are in parentheses. All estimations include geographic, demographic, climatic, regional, and household controls. Trust (1) refers to "Would you say that people in your village can be trusted?" 1=Almost none; 2=Some; 3=Majority; 4=Almost all. Trust (2) refers to "Would you say that large landholders can be trusted?" 1=Almost none; 2=Some; 3=Majority; 4=Almost all. Cheat refers to answering someone from a higher caste is most likely to cheat you (compared to other castes or wealth levels). Repair is the answer to "If someone from your village noticed something wrong on your farm they would?" repair it themselves (compared to conditional answers, such as "alert you if he is from a lower caste....etc). Donated cash or labour are dummy variables equal to one if the household did donate (cash or labour respectively) in the past year to a development project within the village. Inter-Caste (1): "Would most people in your village help you with some money in times of crisis?" Inter-Caste (2): "Would a higher caste member of your village help you with some money in times of crisis?" Inter-Caste (3): "Would most people in your village help a lower caste villager with some money in times of crisis?" Inter-Caste (4): "Would most people in your village help you with some grain in times of crisis?" Inter-Caste (5): "Would a higher caste member of your village help you with some grain in times of crisis?" The final set of estimations are over the sample of households with less than 3 acres of land. The first two of these estimations are multinomial logit estimations. Target Village refers to GP funds should be targeted to the village as a whole, compared to poor or low caste individuals. Shared funds refers to GP funds are shared across the village (e.g. for development projects; public goods) compared to going directly to the poor or low status; the rich and high status; or to GP members or other government officials directly. The final estimation is a probit estimation on village projects to finance festivals. The sample is all households. Trust own caste refers to "Would you say that members of your own can be trusted?" 1=Almost none; 2=Some; 3=Majority; 4=Almost all. Large land owning Marathas are those with more than 5 acres.

Table 7 - Estimations of Wages, Yields, and Trading Relations

Dependent Variable	Coefficient ( $\beta_4$ )	Coefficient ( $\beta_3$ )	Observations
	Proportion Marathas	MLD	
Daily Wage [Labourers]	2.04 (0.61)***	-1.36 (0.40)***	13581
Days Worked [Labourers]	-9.46 (4.79)**	-3.67 (3.09)	13600
Kharif Yields [Cultivators]	-7912.2 (4816.9)*	7042.9 (3637.0)**	2425
Kharif Profits [Cultivators]	-6202.4 (4586.4)	5717.2 (3478.1)*	2425
Maratha Trader [Low Castes]	0.50 (0.15)***	0.28 (0.11)***	3021
Outside Maratha Trader [Low Castes]	0.20 (0.17)	0.17 (0.12)†	2800
Maratha Lender [Low Castes]	1.31 (0.46)***	0.57 (0.24)**	453
Interest Rate on Loan [Low Castes]	8.81 (8.50)	-9.06 (5.23)*	165

Notes: The sample of labourers are all those who work for a daily wage in agriculture. Additional individual controls (gender, age, education) are included in the wage and labour supply (days worked in the past year) estimations. Regression disturbance terms are clustered at the household level for these two estimations. Additional crop controls are included in the yields and profits estimations. The sample of cultivators is all cultivators with at least 5 acres of land. Kharif yields are the total value of output per acre of land for a given crop, summed over all of the kharif crops for each household. Kharif profit is yields net of input costs (seeds, fertilizer, irrigation, electricity, pesticides, and labour). Maratha Trader is equal to one if the household has traded with a Maratha for any tradeable good (which includes agricultural inputs and outputs, farm enterprise and non-farm enterprise goods). Outside Maratha Trader refers to the trader residing outside of the village. The sample in the second set of regressions is all lower castes, except for the final estimation which is SC/STs.

Table 8 - Estimations of GP Measures with Interaction

Dependent Variable	Coefficient ( $\theta_3$ )	Coefficient ( $\theta_2$ )	Coefficient ( $\theta_4$ )	Observations
	Prop. Maratha	MLD	MLD*Prop. Maratha	
Revenue (1)	-267.8 (176.2)	-164.7 (75.9)**	152.7 (153.3)	204
Revenue (2)	-7.9 (7.9)	-11.7 (4.8)***	12.6 (8.0)†	290
Expenditure	-6.2 (7.2)	-10.2 (4.6)**	10.5 (7.4)‡	290
Programs (1)	-1.04 (0.60)*	-1.24 (0.39)***	1.55 (0.73)**	7752
BPL Programs (1)	-0.28 (0.22)	-0.48 (0.14)***	0.65 (0.27)**	7752
EGS (1)	0.11 (0.30)	-0.55 (0.17)***	0.66 (0.37)*	7725
Programs (2)	-1.08 (0.69)	-1.25 (0.42)***	1.48 (0.83)*	275
BPL Programs (2)	-0.30 (0.29)	-0.48 (0.16)***	0.61 (0.37)*	275
EGS (2)	0.05 (0.10)	-0.12 (0.05)**	0.15 (0.14)	275
EGS (3)	0.03 (0.17)	0.20 (0.11)*	-0.23 (0.22)	4710
CEO Meetings	3.32 (3.35)	-3.22 (1.23)***	-1.28 (3.41)	290
MP Meetings	-0.31 (3.28)	-3.96 (2.15)*	1.97 (2.47)	290
DC Meetings	-2.61 (1.67)	-2.52 (1.01)**	2.38 (1.28)*	290

Notes: EGS (3) is equal to one if lower castes households reported that they have a problem with regards to access to employment guarantee schemes. Refer to notes of Table 5 for all other variables. Regression disturbance terms are clustered at the village level for the household-level regressions. † refers to 12% significance and ‡ at the 16% level.



*Table 9 - Estimations of Social Capital, Inter-Caste Relations, Collective Village Life, and Voting with Interactions*

Dependent Variable	Coeff. ( $\lambda_4$ ) Prop. Maratha	Coeff. ( $\lambda_3$ ) MLD	Coeff ( $\lambda_5$ ) MLD*Prop.Maratha	Obs
Trust [Low Castes]	0.18 (0.12)	0.21 (0.07)***	-0.54 (0.15)***	4973
Cheat [Low Castes]	0.01 (0.26)	-0.29 (0.13)**	0.41 (0.31)	4762
Repair [Low Castes]	-0.08 (0.16)	0.22 (0.10)**	-0.18 (0.21)	4947
Donated Cash [Low Castes]	0.04 (0.16)	0.23 (0.11)**	-0.21 (0.21)	4985
Donated Labour [Low Castes]	0.25 (0.20)	0.27 (0.11)**	-0.18 (0.24)	4985
Share Water [Low Castes]	1.45 (0.31)***	0.75 (0.16)***	-0.82 (0.36)**	2942
Inter-Caste (1) [Low Castes]	0.22 (0.16)	0.17 (0.09)*	-0.34 (0.20)*	4984
Inter-Caste (2) [Low Castes]	0.14 (0.18)	0.19 (0.09)**	-0.34 (0.22)	4984
Inter-Caste (3) [Low Castes]	0.31 (0.17)*	0.21 (0.09)**	-0.50 (0.21)**	4983
Inter-Caste (4) [Low Castes]	0.33 (0.17)**	0.20 (0.11)*	-0.44 (0.23)**	4982
Inter-Caste (5) [Low Castes]	0.21 (0.17)	0.22 (0.11)**	-0.46 (0.23)**	4983
Inter-Caste (6) [Low Castes]	0.42 (0.18)**	0.24 (0.10)***	-0.68 (0.22)***	4979
Inter-Caste (7) [Marathas]	-0.07 (0.24)	0.49 (0.15)***	-0.59 (0.25)**	3120
Target Village [Marathas]	1.81 (0.65)***	1.07 (0.44)***	-2.07 (0.64)***	3059
Target Village [Low Castes]	0.41 (0.64)	1.32 (0.32)***	-1.53 (0.70)**	4883
Shared Funds [Marathas]	2.30 (0.72)***	1.80 (0.55)***	-2.74 (0.72)***	2795
Shared Funds [Low Castes]	1.38 (0.71)**	0.85 (0.35)***	-1.75 (0.80)**	4603
Agree	0.31 (0.15)	0.15 (0.08)*	-0.30 (0.17)*	8169
Festivals	0.04 (0.14)	0.17 (0.09)*	-0.15 (0.18)	8167
Voted-Personal [Marathas]	0.03 (0.22)	-0.17 (0.15)	0.20 (0.23)	2786
Voted-Personal [Low Castes]	0.43 (0.29)	0.31 (0.15)**	-0.71 (0.34)**	2116
Voted-Personal (Maratha GP)[Low]	0.48 (1.74)	4.23 (2.45)*	-0.07 (1.80)	424
Voted-Personal (Non-Maratha GP)[Low]	0.51 (0.48)	0.29 (0.30)	0.23 (0.70)	362

Notes: Refer to notes from Table 6. Trust is response to: "Would you say that the large landholders can be trusted? 1=Almost none, 2=Some; 3=Majority; 4=Almost. Cheat refers to answering someone from a higher caste is most likely to cheat you (compared to other castes or wealth levels). Share Water is equal to 1 if the household shares a water source with members of the Maratha caste. Inter-Caste (6): Would most people in your village help a lower caste villager with some grain in times of crisis?" Inter-Caste (7): "Suppose a lower caste man asks to borrow a good sum of money from you because someone in his family has fallen ill. He is from the village and has the ability to repay the amount. Would you lend it to him?" Agree refers to answering that most people in the village would agree on the type of development project the village should have (compared to differences of opinions within the village). Voted - Personal equals to one if the household voted for a candidate due to a personal connection rather than due to the characteristics of the candidate (honesty, good reputation, qualifications). Samples are conditional on voting. The sample of low castes in the voting regressions is SC/STs. The regressions in the last two rows are conditional on whether the Maratha Pradhan in an unreserved area or not.

Table 10 - Estimations of Wages, Yields, and Trading Relations with Interactions

Dependent Variable	Coeff. ( $\lambda_4$ ) Prop. Maratha	Coeff. ( $\lambda_3$ ) MLD	Coefficient ( $\lambda_5$ ) MLD*Prop.Maratha	Obs
Daily Wage [All Labourers]	-1.15 (0.97)	-2.80 (0.50)***	4.66 (1.12)***	13581
Daily Wage [Males]	-1.60 (1.37)	-3.35 (0.77)***	5.91 (1.63)***	7502
Daily Wage [Females]	-0.61 (1.21)	-2.22 (0.66)***	3.13 (1.39)**	6079
Daily Wage [Low Castes]	-1.04 (1.16)	-3.00 (0.58)***	3.78 (1.41)***	9195
Daily Wage (Insurance)	0.25 (1.51)	-2.58 (0.74)***	3.17 (1.69)*	7115
Daily Wage (No Insurance)	-2.55 (1.20)**	-3.30 (0.68)***	6.36 (1.47)***	6464
Daily Wage (Insurance) [Low]	-0.88 (1.92)	-3.68 (0.86)***	4.78 (2.27)**	4342
Daily Wage (No Insurance) [Low]	-1.39 (1.35)	-2.57 (0.76)***	3.15 (1.75)*	4851
Days Worked [All Labourers]	-1.63 (7.43)	-0.14 (4.09)	-11.41 (8.16)	13600
Input Costs (Kharif)	3190.3 (4115.2)	8080.2 (6497.0)	-11679.2 (10343.2)	5391
Other Input Costs (Kharif)	3131.7 (4083.6)	7901.8 (6600.4)	-11370.5 (10543.4)	5212
Hired Workers	0.44 (5.34)	0.99 (2.06)	4.24 (3.36)	5283
Total Workers	0.79 (5.32)	1.00 (2.03)	4.00 (3.34)	5292
Kharif Yields	-668.4 (5649.6)	9875.5 (4651.2)**	-9874.3 (6398.0)†	2425
Kharif Profit	415.3.6 (5069.4)	8305.0 (4411.0)*	-9020.9 (5903.6)†	2425
Labour/Total Costs (Kharif)	-0.05 (0.04)	-0.04 (0.02)*	0.07 (0.04)*	1800
Maratha Trader [Marathas]	0.24 (0.29)	0.002 (0.16)	0.23 (0.29)	2739
Outside Maratha Trader [Marathas]	0.33 (0.28)	-0.04 (0.19)	0.17 (0.29)	2666
Maratha Lender [Marathas]	0.48 (0.62)	-0.70 (0.48)	-0.06 (0.73)	343
Terms of Payment (Inputs) [Maratha]	0.21 (0.28)	0.32 (0.16)**	-0.40 (0.29)	9870
Interest Rate on Loan [Marathas]	-30.1 (7.2)	-8.6 (5.7)	33.6 (9.1)***	395
Maratha Trader [Low Castes]	0.56 (0.27)**	0.30 (0.13)**	-0.09 (0.32)	3021
Outside Maratha Trader [Low Castes]	0.60 (0.26)**	0.36 (0.14)***	-0.63 (0.31)**	2800
Maratha Lender [Low Castes]	1.49 (0.69)	0.68 (0.36)*	-0.60 (0.81)	415
Terms of Payment (Inputs) [Low]	0.60 (0.20)***	0.19 (0.10)**	-0.65 (0.24)***	10044
Interest Rate on Loan [Low Castes]	-2.3 (11.4)	-14.1 (6.6)**	17.0 (12.8)†	165

Notes: Refer to notes of Table 7. Insurance corresponds to answering yes to Inter-Caste (1) - (6). The sample for the estimations on inputs into agricultural production is all cultivators (Results also hold for larger cultivators). All measures are per acre of land. Workers include parttime and fulltime, same results held if restricted ourselves to fulltime workers. The sample for the yields, profits, proportion of labour costs regressions is all large cultivators (> 5 acres of land). Terms of payments is an index variable equal to 0 if the trader requires advanced payments, 1 if full payment is required at the time of sale; and 2 if instead payment in installments is acceptable. † refers to significance at the 12% level.

Table 11 - *Estimations with Non-Linear Interactions*

Dependent Variable	Coefficient ( $\varphi_3$ or $\psi_2$ )	Coefficient ( $\varphi_5$ or $\psi_4$ )	Observations
	MLD	MLD*(Prop. Maratha > 0.35)	
EGS	-0.52 (0.15)***	0.43 (0.21)*	7725
DC Meetings	-2.52 (0.93)***	1.93 (0.74)***	290
Revenue	-10.71 (4.43)***	7.33 (4.65)†	290
Expenditure	-9.56 (4.28)**	6.18 (4.25)‡	290
Voted-Personal [Low Castes]	0.25 (0.14)*	-0.39 (0.24)*	2116
Inter-Caste (1) [Low Castes]	0.16 (0.09)*	-0.26 (0.13)*	4984
Inter-Caste (2) [Low Castes]	0.17 (0.09)*	-0.26 (0.14)*	4984
Inter-Caste (3) [Low Castes]	0.19 (0.09)**	-0.37 (0.14)***	4983
Inter-Caste (4) [Low Castes]	0.18 (0.10)*	-0.34 (0.15)**	4982
Inter-Caste (5) [Low Castes]	0.19 (0.10)*	-0.33 (0.15)**	4983
Inter-Caste (6) [Low Castes]	0.18 (0.09)**	-0.43 (0.14)***	4979
Inter-Caste (7) [Marathas]	0.46 (0.15)***	-0.47 (0.19)**	3120
Trust [Low Castes]	0.13 (0.07)**	-0.23 (0.10)**	4973
Share Water [Low Castes]	0.69 (0.15)***	-0.48 (0.20)**	2942
Target Village	0.89 (0.26)***	-0.70 (0.37)*	8006
Shared Funds	1.05 (0.26)***	-1.15 (0.34)***	7453
Daily Wage [All Workers]	-2.71 (0.48)***	2.84 (0.73)***	13581
Daily Wage [Low Castes]	-2.69 (0.55)***	1.78 (0.89)**	9195
Kharif Yields [Cultivators]	13526 (6451)**	-12425 (6684)*	2425
Kharif Profits [Cultivators]	11633 (6319)*	-11114 (6522)*	2425
Terms of Payment [Low Castes]	0.20 (0.09)**	-0.47 (0.15)***	10044
Interest Rate [Low Castes]	-14.05 (6.46)**	16.09 (8.26)	165

Notes: † significance at the 12% level. ‡ at the 15% level.

## 10 Appendix A

### 10.1 Wages and Yields Affected by Programs and EGS

Most landless individuals sell their labor to large landowners. Most large landowners have as their largest input cost labor. The way labor relations work in these villages is that the landless people or small landholders who rely mainly on labor income for their livelihood typically work on the farm of a large landowner in a permanent or semi-permanent capacity. Much of what workers need to do can only be partly or very imperfectly supervised, suggesting that asymmetries of information in production may arise. Such permanent working arrangements are coveted by workers, and though there is a spot market for some labor, it seems that workers prefer the permanent working arrangements greatly. The threat of losing such employment disciplines the use of discretionary effort. For individuals primarily relying on labor income for their livelihood the threat of employment loss, which would send them into poverty, provides great incentive for them to keep contributing un- or partially monitored discretionary effort in their employment on large landholders farms. Large landholders grow various crops and their labor needs, timing of application, and other inputs use are largely fixed through the crop cycle. However, the quality of crop obtained depends critically on good labor input and diligence through the production process.

These ingredients suggest an efficiency wage model. Workers are required, by the implicit contract of the landlord, to provide  $e^*$  units of labor effort and receive a wage  $w^*$ . Landlords imperfectly ascertain, ex post, the effort contribution of their worker and decide whether to rehire them in the next period, or dismiss them from their employ. Since production is largely of a fixed factor variety, we can for simplicity simply characterize the optimal incentive compatible contract  $(e^*, w^*)$  offered to each worker by the landlord while letting the landlord's landholding and crop choice (which is a function of the conditions) determine the number of workers required.

In this sort of labor market, even though much of the year sees labor only partially employed or unemployed the activities of the panchayat in providing poverty alleviation programs become significant. In the event that workers are not employed by landlords, they will depend on benefits from the state, or on employment from the state for their livelihood. Thus, we can characterize their reservation utility,  $\bar{u}$ , as depending positively on the incidence of these programs. For simplicity let this take two values,  $\bar{u}(W)$  when  $W$  workers control the panchayat and actively seeks out these programs, and  $\bar{u}(L)$  when  $L$  landlords control it and such programs are shut down. These are taken as given when worker and landlord play the labor/production game.

## 10.2 The Labor/Production game

Given an increasing and concave per worker effort production function,  $f(e)$ , the landlord chooses the implicit contract parameters  $(w, e)$ :

$$\max_{e, w} f(e) - w$$

subject to  $(w, e)$  being incentive compatible for the worker. That is any pair  $w, e$  chosen must satisfy

$$\frac{u(w) - c(e)}{1 - r} \geq u(w) + \frac{r}{1 - r} \bar{u}(x), \text{ where } x = W \text{ or } L. \quad (10)$$

The term  $u(w)$  is increasing and concave,  $c(e)$  is increasing and convex, and  $\bar{u}(x)$  reservation employment if dismissed, is increasing in probability of obtaining benefits, probability of obtaining EGS employment, and probability of obtaining another job (which we can set equal to zero for simplicity), so that  $\bar{u}(W) > \bar{u}(L)$ .

Firstly note that any optimal  $e, w$  chosen must ensure that IC binds exactly,

$$\frac{u(w) - c(e)}{1 - r} = u(w) + \frac{r}{1 - r} \bar{u}(x)$$

implying.

$$w = u^{-1} \left( \frac{c(e)}{r} + \bar{u}(x) \right). \quad (11)$$

Substituting this in, the optimization problem becomes:

$$\max_e f(e) - u^{-1} \left( \frac{c(e)}{r} + \bar{u}(x) \right).$$

With a FOC that implies:

$$f'(e) = u^{-1'} \left( \frac{c(e)}{r} + \bar{u}(x) \right) \frac{c'(e)}{r}.$$

This implicitly defines a solution  $e^*(\bar{u}(x))$  and from equation (11) the corresponding  $w^*$ .

**Proposition 1** *The optimal implicit contract  $(w^*, e^*)$  has wage strictly increasing and effort strictly decreasing in  $\bar{u}(x)$ .*

Proof: At  $e^*$ :

$$f'(e^*(\bar{u})) = u^{-1'} \left( \frac{c(e^*(\bar{u}, r))}{r} + \bar{u} \right) \frac{c'(e^*(\bar{u}, r))}{r}.$$

Differentiating with respect to  $\bar{u}$  yields:

$$\begin{aligned} f''(e^*(\bar{u}, r)) \frac{de^*}{d\bar{u}} &= u^{-1''}(\cdot) \left( \frac{c'(e^*(\bar{u}, r))}{r} \frac{de^*}{d\bar{u}} + 1 \right) \frac{c'(e^*(\bar{u}, r))}{r} \\ &\quad + u^{-1'}(\cdot) \left( \frac{c''(e^*(\bar{u}, r))}{r} \frac{de^*}{d\bar{u}} \right), \end{aligned}$$

rearranging:

$$\frac{de^*}{d\bar{u}} = \frac{u^{-1''}(\cdot) \frac{c'(e^*(\bar{u}, r))}{r}}{f''(e^*(\bar{u}, r)) - u^{-1'}(\cdot) \frac{c''(e^*(\bar{u}, r))}{r} - u^{-1''}(\cdot) \left( \frac{c'(e^*(\bar{u}, r))}{r} \right)^2}.$$

Because  $u(\cdot)$  is an increasing and concave function,  $u^{-1}(\cdot)$  is an increasing and convex function. Then since  $c(\cdot)$  is a convex function by assumption it is immediate that the terms on the RHS can be signed as follows:

$$\frac{de^*}{d\bar{u}} = \frac{[+]}{[-] - [+] - [+]} < 0.$$

Differentiating equation (11) with respect to  $\bar{u}$  yields:

$$\begin{aligned} \text{sign} \left[ \frac{dw}{d\bar{u}} \right] &= \text{sign} \left[ \frac{u^{-1''}(\cdot) \left( \frac{c'(e^*(\bar{u}, r))}{r} \right)^2 + f''(e^*(\bar{u}, r)) - u^{-1'}(\cdot) \frac{c''(e^*(\bar{u}, r))}{r}}{-u^{-1''}(\cdot) \left( \frac{c'(e^*(\bar{u}, r))}{r} \right)^2} \right] \\ &= \text{sign} \left[ \frac{f''(e^*(\bar{u}, r)) - u^{-1'}(\cdot) \frac{c''(e^*(\bar{u}, r))}{r}}{[-]} \right] \\ &> 0. \end{aligned}$$

**Prediction** Where GPs are controlled by landlords, wages should be lower and effort should be higher across the village.  $w(L) < w(W)$  and  $e(L) > e(W)$ .

## 11 Appendix B

Table A1 - Estimations of GP Measures with Maratha Land Holdings

Dependent Variable	Coefficient ( $\theta_3$ ) Prop. Maratha	Coefficient ( $\theta_2$ ) PML	Coefficient ( $\theta_4$ ) PML*Prop. Maratha	Observations
Revenue (1)	-119.4 (83.4)	-117.6 (89.6)	107.7 (133.2)	193
Revenue (2)	-15.7 (7.5)**	-13.1 (7.3)*	36.6 (14.8)***	275
Expenditure	-13.3 (7.2)*	-10.8 (7.1)†	31.6 (14.4)**	275
Programs (1)	-1.84 (0.58)***	-1.42 (0.65)**	3.63 (1.09)***	7752
BPL Programs (1)	-0.56 (0.21)***	-0.60 (0.25)**	1.46 (0.42)***	7752
EGS (1)	-0.20 (0.26)	-0.61 (0.31)**	1.41 (0.46)***	7725
Programs (2)	-2.00 (0.61)***	-1.70 (0.72)***	3.80 (0.83)***	275
BPL Programs (2)	-0.62 (0.21)***	-0.70 (0.28)***	1.50 (0.45)***	275
EGS (2)	-0.04 (0.07)	-0.19 (0.08)***	0.39 (0.14)***	275
CEO Meetings	0.64 (2.58)	-4.70 (1.64)***	4.75 (3.61)	275
MP Meetings	-1.81 (2.30)	-4.92 (2.86)*	5.87 (3.04)**	275
DC Meetings	-3.51 (1.52)**	-3.94 (1.28)***	5.83 (1.98)***	275

Notes: PML refers to the proportion of village land that is owned by Marathas. This is constructed from the household level data as discussed in Sections 2 and 8. Refer to notes of Table 8 for all other variables. † refers to 13% significance.

Table A2 - Estimations of Household Measures with Maratha Land Holdings

Dependent Variable	Coeff. ( $\lambda_4$ )	Coeff. ( $\lambda_3$ )	Coeff ( $\lambda_5$ )	Obs
	Prop. Maratha	PML	PML*Prop.Maratha	
Trust [Low Castes]	0.05 (0.12)	0.28 (0.15)*	-0.59 (0.25)**	4973
Share Water [Low Castes]	1.20 (0.29)***	0.96 (0.27)***	-0.93 (0.45)**	2942
Voted-Personal [Low Castes]	0.17 (0.26)	0.58 (0.26)**	-0.71 (0.46)†	2116
Inter-Caste (1) [Low Castes]	0.21 (0.14)	0.38 (0.18)**	-0.65 (0.29)**	4984
Inter-Caste (2) [Low Castes]	0.16 (0.15)	0.41 (0.18)**	-0.71 (0.29)***	4984
Inter-Caste (3) [Low Castes]	0.22 (0.15)	0.42 (0.17)***	-0.74 (0.29)***	4983
Inter-Caste (4) [Low Castes]	0.19 (0.15)	0.46 (0.19)***	-0.60 (0.31)**	4982
Inter-Caste (5) [Low Castes]	0.07 (0.15)	0.49 (0.19)***	-0.62 (0.31)**	4983
Inter-Caste (6) [Low Castes]	0.16 (0.15)	0.53 (0.18)***	-0.73 (0.30)***	4979
Inter-Caste (7) [Marathas]	-0.22 (0.21)	0.62 (0.26)***	-0.59 (0.37)*	3120
Target Village [Marathas]	1.29 (0.59)**	1.62 (0.53)***	-2.16 (0.74)***	3059
Target Village [Low Castes]	-0.07 (0.62)	1.57 (0.57)***	-1.93 (1.0)**	4883
Shared Funds [Marathas]	1.93 (0.76)***	2.56 (0.78)***	-3.28 (1.03)***	2795
Shared Funds [Low Castes]	0.70 (0.60)	1.17 (0.58)**	-1.04 (0.99)	4603
Agree	0.20 (0.13)	0.41 (0.13)***	-0.43 (0.21)**	8169
Daily Wage (All Labourers)	-1.84 (0.85)**	-1.65 (0.82)**	6.70 (1.46)***	13581
Daily Wage (Low Castes)	-3.25 (1.00)***	-2.25 (0.96)**	8.60 (1.85)***	9195
Kharif Yields	-1642.4 (5887.1)	16076.5 (9706.2)*	-16630.7 (10977.3)†	2425
Kharif Profit	-497.8 (5449.1)	14799.7 (9477.3)†	-15609.8 (10570)‡	2425
Maratha Trader [Low Castes]	0.49 (0.23)	0.67 (0.25)***	-0.33 (0.44)	3021
Outside Maratha Trader [Low Castes]	0.54 (0.25)**	0.68 (0.25)***	-1.11 (0.45)***	2800
Maratha Lender [Low Castes]	1.67 (0.67)***	2.09 (0.65)***	-1.80 (1.32)	453
Terms of Payment (Inputs) [Low]	0.50 (0.18)***	0.13 (0.19)	-0.70 (0.37)*	10044
Interest Rate on Loan [Low Castes]	2.30 (11.1)	-29.1 (10.1)***	24.7 (19.1)	165

Notes: Refer to notes from Tables 9 and 10. † denotes significance at the 12% level, ‡ for 14%.