One Kind of Democracy*
(Very Preliminary)

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Abstract

This paper explores the performance of rural governance institutions (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 Panchayats) are patchy and poorly implemented. Beneath this veneer of representative democracy we find evidence of deeply ingrained clientilist 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 ascendency 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 adult 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. There was no universal suffrage in the South and consequently the tax structure as well as the type of public goods created served only the interests of the elite (Engerman and Sokoloff (2006)). Since we know what type of institutions have worked well in the developed countries, copying them would seem like an obvious solution for developing countries. Indeed, if a traditional society with hierarchical social relations adopts democracy based on rules copied from well functioning liberal democracies, how could it go wrong? 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 that we are studying here is not exceptional; it is more likely to be common across the developing world.

We examine governance in rural India. Our study is based on a household survey we undertook in the state of Maharashtra of over 9000 households from 300 villages supplemeted by surveys of local governing councils (village panchayats) as well as of credit institutions . We find a historically powerful group (the Maratha caste) exerting a huge influence on outcomes despite there being no visible signs of any departure from the formal rules of democracy. Some of the progressive policies of the central government are thawrted ever so subtly so that the hierarchical power structure and dependent relationships of lower castes remain undisturbed. These relationships appear to have been historically cemented and maintained today through personalized insurance schemes. 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 Maratha landlords, through a patron-client relationship that has continued through history, induce their clients (poorer farmers and the landless who supply the local workforce) to vote in the panchayat 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 would have had beneficial impact on the wellbeing of clients in the long run. 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 case we study has important differences with the cases we are familiar with 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)).

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 - 'The Moral Economy of Peasant'. We examine how such a system can persist through time and adapt itself to modern institutions. This paper is also related to the recent empirical liter-

ature on 'elite capture'. Bardhan and Mookherjee (2000, 2005, 2006) have done important work on whether a move toward decentralized governance in India has been effective in delivering government services and poverty alleviation schemes to the poor in rural India. Their empirical work has however been in Bengal where the traditional caste structure has eroded over time and the phenomenon of the elite running the show with an invisible hand is not evident. For areas and societies where the traditional social structures have endured despite the introduction of modern institutions, we feel the situation we analyze here may be quite relevant.

In a wonderful account of the history of post-bellum South , the economic historians Ransom and Sutch (1977) describe 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. It has been a welcome move long needed. It brought democracy – One Kind of Democracy – to the rural population of India. If we need to design development policies in such a setting we need to understand how this kind of democracy works.

Our paper proceeds as follows. We start with a description of our data, and the general information obtained in the form of summary statistics from our surveys. As will be seen, these statistics point to the predominant economic and political dominance of members of the Maratha caste. We then document, using a simple linear regression framework, the correlates of Maratha power. In doing this, we exploit the historical pre-determination of both Maratha landholdings, and Maratha population distributions to trace the relative effects on power deriving from these sources: land-ownership – representing economic power; and population numbers – power deriving directly from the ballot box. We will see there that Maratha land dominance plays a key role in providing political control, and that this political power is used to the advantage of the land owning class.

The heart of the paper distinguishes the means by which the Maratha caste's economic power (land ownership) leads to their political power, even when they are a small minority of the voting population, and where elections are freely contested, fair, participatory, and voting is non-coerced. Two clientilist hypotheses are suggested. In one, which we dub the 'sociological explanation', Maratha landownership translates into landowning power as Maratha patrons are able to draw on their history of joint within-caste political cooperation to successfully coordinate on delivering the votes of their clients in village elections. A second explanation derives from Maratha's

being more able to access extraneous (to the village) caste based trading networks – which we dub the 'networks explanation'. We develop a formal model of clientilist vote-trading that embeds both explanations, and that demonstrates that both can potentially explain why it is the Maratha landowners that are most effective in translating economic power into political.

The model suggests a number of tests of the relative strength of such explanations, as they differ on key observable phenomena. The paper then tests these and finds strong supports 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. This is 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.

2 Data

From November 2006 to May 2007, we surveyed 9132 households from a random sample of 300 villages in the state of Maharashtra. Our data are from three main regions: Western Mahrahstra, 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 ppp/day/capita).

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

2.1 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 things across our sample of villages, as seen from Table 1 below.

Table 1 - 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 electricty (%)	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 (last 5 years)	1.54	1.52	1387

Notes: Total Programs refers to the total number of Government Schemes implemented in the village. BPL refers to the number of those programs targeted for individuals below the poverty line. EGS refers to the Employment Guarantee Scheme. CEO, MP, and DC meetings all refer to the number of times in the last year that the GP has met with officials from higher level governments to seek resources (DC refers to District Collector)). This information is from the Gram Panchayat 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 Gram Panchayat is responsible for.with regards to provision and maintenance (Health and Education are the reponsibility of higher level governments (either at the Block or District Level). Improvements refers to total number of improvements (financed by the Gram Panchayat) to the neighbourhood in the past five years.

Whether the majority of individuals are being well represented by their panchayat is not something that we can directly gauge from any single indicator of panchayat 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 democractic governance, are very clear about how this class conflict should be resolved. According to the Panchayat Act, Panchayats are the channel through which poverty alleviation policies are intended to be targetted. 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 labor to live, and would benefit greatly from policies that raised wages, augmented consumption, or increased labor demand. Representative governance in majority interest corresponds to the implementation of consumption subsidies, the employment guarantee act, and poverty alleviation schemes.

Table 1 is striking in documenting the degree to which governance is failing to deliver development policies. 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 targetted 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 and is supplied in only 20% of villages.[1] All of these programs are directly funded from externally available funds, and need only be administered by the panchayat upon request for implementation. The fact that they, on average, are not, is strongly suggestive of a governance failure somewhere along the line.

There are reasons why the poor majority may not have their interests represented by village governments in rural india. One 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. Secondly, the traditional preeminence of certain caste groups who are of

[1] The other figures on public goods, and publically provided private goods are harder to interpret relative to a benchmark of satisfactory governance, so we do not consider these yet.

high social standing can undermine the representativeness of the elected members.

In Maharashtra the dominant political and economic group is the Maratha caste. As seen in Table 2 they still economically predominate today in that they are more likely to be landowners, to be large landowners, and to be a cultivator rather than a laborer. Moreover, as the top 12 rows (that distinguish between Maratha Land Dominated villages, and the sample Overall) indicate this pattern of relative economic advancement occurs is seen within villages that are Maratha dominated, and over the sample as a whole.

The lower panel of the table documents just how successful Panchayat democratization has been with regards to objective indicators of political performance, and that this extends across all castes. Over 90% of eligible individuals voted in the last Panchayat elections in all the major caste groups, and the main reason for the approximate 10% who do not do so is that they were in villages where candidates stood unopposed. Almost noone was forced to vote, and nearly everyone had me their Pradhan (Panchayat head).

Table 2 - 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 (10.29)
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 Gram Panchayat 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?"

Maratha dominance is also seen in village politics. Taking into account reserved positions for the Pradhan (that if applied, always exclude a Maratha Male obtaining it), the upper panel of Table 3 demonstrates that the underlying perception of Maratha dominance in the economic realm is also reflected in the political one. Though Marathas comprise about 40% of the population, they are the Pradhan in over 60% of villages where a Maratha can stand.

Table 3 - Control of Panchayat Measures

Variable	Overall	MLD	MLD Maratha Majority	MLD 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 Gram Panchayat	0.59 (0.19)	0.56 (0.16)		
Observations	315	193	120	73

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

Since we see so much variation in the frequency of pro-poor policy implementation in our sample, while at the same time seeing 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 2) a natural question to

ask is whether these traditional sources of power – landholding by caste, caste numbers – are serving to undermine the effectiveness of governance, and hence explaining this variation in governance across villages. A simple indication of traditional sources of power affecting political representation is indicated in the final two columns of Table 3. In Maratha Land Dominated regions, 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.

So, to summarize, the three tables of summary statistics suggest the following broad patterns in our data. Firstly, programs that are intended to alleviate poverty are, in general, badly implemented. Secondly, the traditionally dominant caste in this region – the Marathas – remain economically dominant today. Thirdly, the Marathas also have significant overrepresentation 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.

A possible explanation for the poor poverty alleviation undertaking, and hence poor governance, in this region thus arises: *the Marathas, as the traditionally dominant caste of the region, have somehow hijacked the functioning of Panchayats – either by their numerical strength or their economic strength – and are using them for reasons other than the poverty alleviation roles which they are intended for.* It is this hypothesis that we shall explore.

A straightforward way to check this would be to see if Maratha political power and the policy outcomes we are interested in are being determined by Maratha economic and numerical power. But in order to do this in a regression framework, we must first establish that landholdings by caste and caste population numbers themselves are not simply a reflection of political outcomes, policy variables, or the economic consequences of these. To this end, we briefly survey the historical literature that explains the present day distribution of landholding and population numbers across villages in the state of Maharshtra.

Similar points have been made regarding population distributions at the district level in a country-wide study; Banerjee and Somanathan (2007), and with respect to landholdings using state-wide variation in land reform policies again focused on country-wide comparisons; Besley and Burgess (2000). Since our context is only Maharashtra state we consider that state's particular caste history in some detail.

2.2 Distribution of Caste Groups

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 basic elements of village organization, i.e., the *balutedari* system, were developed by the fourth century AD.[2] The landowning castes comprised the *balutedars* who were linked through the system with the farmer and artisan castes (now classified as the backward castes (BACs and OBCs)) and the service castes (now classified as the scheduled castes (SCs)). The centuries old *balutedari* system was a reciprocal arrangement between the hereditary farming, artisan, and service castes and the higher landholding castes. The lower castes provided labour, goods, and services to the higher castes (*balutedars*) in return for land and food (Beteille 1996). Members of the non-cultivating Brahmin caste (priests) were also present in the villages.

Village anthropological studies reveal that the origins of the distribution of caste groups at the village level go back hundreds of years. In most of our districts, we have village level variation in caste dominance. Variation in the historical caste composition at the district level (from Historical Censuses of India 1891 - 1931) match the current variation. According to our survey, for more than 95% of the caste groups represented in our sample, they report to have resided in the village since well before Independence.

2.3 Land Ownership of Caste Groups

Marathas are a middle ranked warrior and landowning caste whose importance in Maharashtran history dates back to at least the fourth century AD when major cheiftainships were under their control. Their dominance of landowning extends at least from the fourteenth century to the present day, and was altered significantly (though not overturned) only at the time of Indian independence as we now document.

Prior to independence, under either foreign rule or during the Maratha empire, Marathas have always been the dominant land owners. Under both Muslim and British regimes, land ownership was distributed to Marathas as reward by alien rulers for loyalty of members of dominant lineages.(Altekar 1927, Kosambi 1969, Drekmeier 1962) Under Muslim rule (fourteenth to seventeenth centuries), village land was also granted to Maratha gentry in return for supply of armies (Dahiwale 1995).

Under the leadership of Chhatrapati Shivaji, the Maratha Empire was founded in 1674. At it's height in the 18th century, the empire extended

[2] The *balutedari* is a variant of the better known *jajmani* system.

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 Maharahstra had fallen to the British East India Company, however remnants of the Empire lasted until Independence in 1947. The Maratha Empire was ruled by the *Peshwas* (Brahmin Prime Ministers to the Maratha kings) from 1749 to 1818. During this time, land in present-day Maharashtra was granted to both Brahmins in the capacity of ministers and priests and to Marathas as warriors and officials (Dahiwale 1995).[3]

During the subsequent colonial rule that superceded the Maratha empire, the regions of present-day Maharashtra fell under different administrative units and systems of land revenue collection.[4] However, irrespective of the land revenue system used, Marathas continued to own the large majority of agricultural land.[5]

Upon Independence, Indian states legislated large scale land reforms. In Maharashtra, the Tenancy and Agricultural Lands Acts of 1948 placed a ceiling on all landholdings and transfered ownership rights to tenants. These acts effectively eliminated absentee landlords and thus excluded the Brahmin caste from land ownership (Dahiwal 1995, Kamat 1980). Indeed, in our sample of over 9000 rural households, less than 1% are from the Brahmin caste. Brahmin lands were transfered to Maratha and other lower ranked caste tenants (Dahiwale 1995)

Large Maratha landholders were also intended to be stripped of their large landholdings but were successful in circumventing redistribution by

[3] Brahmins (the highest ranked caste in India) despite their small population numbers (they constitute only 4% of the population in Maharashtra, whereas Marathas form approximately 31%) have also been politically important prior to Independence. Throughout Indian history, in part due to thier higher education, Brahmins have filled administrative positions (village accountants and so forth). Usually pieces of land were granted to them for these duties as well as for their religious duties as priests of the villages (Kulkarni 1961).

[4] 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 of outcomes today.

[5] Our estimation results include regressors which control for these different land revenue systems.

distributing land to other kin members residing in their own villages. This, however, was not possible where landowners were non-resident. In the case of such absentee landlords, both Maratha and Brahmin, land reforms were effective in ensuring that land reverted to former permanent tenants (primarily the BACs), so that ownership (but not the caste actually cultivating) dramatically changed. These land reforms thus represent a 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 explain the cases of non-Maratha land dominance in our data.

Since the land 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 data of more than 9000 households, 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 thier land.[6]

This settlement history, and the fact that land reforms only really managed the redistribution of absentee landlord holdings, ensures a particular pattern of caste and land ownership in Maharashtran villages today. In villages where Marathas are populous today, they either inherited their land from Marathas who were land owners in the colonial period or cultivator-tenants, and thus obtained their land through tenancy reform. In contrast, low caste populous villages in our sample were historically tenants controlled by absentee higher caste landlords. The key distinction is that in villages where relatively few Marathas reside, the dominant land-owning caste *can* be a low caste. By contrast, in villages where Marathas are populous, although the lower castes may also own some land, the Marathas are highly likely to form the dominant landowing caste there.

2.4 Empirical Concerns

2.4.1 Caste based migration

In the main analysis of the paper we will treat the historically determined village level caste population patterns as exogenously determined and not directly due to economic, political or village level outcomes today. A concern with this assumption is the possibility of caste based migration in response to economic outcomes, or even due to village level policy since inde-

[6] Additionally 12% of our sample report that they originally purchased their land, but this was almost entirely a purchase from a relative or co-caste member.

pendence which would in turn directly alter village level caste composition today. These concerns are not warranted here given the strict rules governing hereditary caste rankings. There is virtually no mobility of individuals across different caste groups and very little caste based 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.[7]

In general, with respect to the present day population patterns by caste, there is absolutely no evidence of caste-based migration that could explain the variation in caste population dominance that we observe today.[8] In particular, since the distribution of caste groups in our sample essentially matches that of the colonial periods.

2.4.2 Land quality and caste

Another concern could be that Marathas tend to own the highest quality land today because they historically resided in the high quality land villages, while they were absentee landlord owners of land in the lower quality villages. This could imply that our measure of Maratha Land Dominance is capturing land quality measures rather than caste dominance measures. To address this, we control for quality of land using extensive information obtained from household and village level data we collected. Additionally, we utilized GPS level data from government sources to further control for land quality.

However, even allowing for the possibility of mismeasurement of land quality, it will be seen that it is very difficult for differences in quality of land to explain the pattern of variation in villages that we will now document. After the results we re-discuss the issues that arise due to any possible mismeasurement of land quality.

3 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. As the previous section has established,

[7] An exception is the common marriage practise of female exogamy. However, even though this involves a female leaving the village of her ancestral home to reside with that of her husband's, since over 99% of rural marriages occur within caste, this does not change village level caste population patterns.

[8] With the exception of the movement of Brahmins from rural to urban areas in the twentieth century. They are less than 1% of our sample.

the population distribution and landholdings by caste are factors that are historically pre-determined, well documented, and arose for reasons unrelated to the advent of modern democracy in the running of village politics. So, by treating these as independent variables it is unlikely that we are confounding our findings with reverse causation or tainting them with omitted factors that are co-determining both the population and landholding numbers as well as governance outcomes.

We proceed by contrasting villages where the dominant landowners are from the traditionally dominant Maratha caste with those where landownership lies with a traditionally subordinate (BAC) 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 distribution of landholdings in such villages, but as Table 2 documents, the distribution of landholdings hardly varies at all across the two types of village.

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, as the table below shows. For our purposes it is important that the randomization has not lead to an inadvertent bias in treatment of Maratha land versus other types of villages in the application of those reservations. As the the lower panel of Table 3 indicates, it has not, probably because reservation rates are determined at the district, not village, level.

We now estimate the effect of Maratha 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:

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

Y_{ivr} is an outcome of household i, residing in village v, and region r. X_{ivr} includes exogenous 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 main roads, soil quality measures, rainfall levels, and proportion of the population that is SC/ST). 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. P_{vr} is equal to the proportion of Marathas in a village v (in region r). α_r is a region fixed effect (which encompasses variation in historial land revenue systems). ε_{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 Gram Panchayat performance measures. We will estimate the following:

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

G_{vr} is an outcome measure of Gram Panchayat performance in village v, and region r. W_{vr} includes the exogenous geographic, demographic, and climate controls included in Z_{vr} as well as Gram Panchayat controls (population that the Gram Panchayat covers, caste of the Gram Pradhan, and reservation status of Gram Pradhan).

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 perscribed by the above equations, should not suffer from multicollinearity.

3.1 Gram Panchayat Estimations

3.1.1 Poltical 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 4 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 something that we would expect to have a direct effect in the democratic process, so the next few regressions explore potential channels through which land dominance may be working.

3.1.2 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 or unrepresentative about Maratha over-representation. For instance, it could be that the majority vote Maratha (note that since we are controlling for Maratha population numbers the land dominance effect is independent of population) 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 Topiova (2003) Banerjee and Somanathan 2007) on which we asked detailed information. As the second set of regressions in Table 4 table make clear however, for all surveyed public goods, for which the Gram Panchayat is responsible, there is almost no variation in the quality of provision under Maratha land dominance.

Since so much of the running of the Panchayat 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. Panchayat finance information derives from the Panchayat questionnaire and is the dependant variable in the third set of estimations reported in Table 4. These results do not support the conjectured channel of effect. Maratha land dominated villages are less effective in obtaining inflows of resources to the Panchayat, and their expenditures are also lower. So it does not seem to be the case that Maratha land ownership leads to political dominance due to Maratha effectiveness at grabbing central funds.

Another reason for the poor majority of a village to support the dominant landowners in positions of power is that they are effective at implementing policies that benefit the poor. As we've 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 clientilist 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: 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 4 comprehensively indicate that this hypothesis is not supported. Almost all pro-poor policies are delivered less effectively (less frequently and less accessible) 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 popular policy 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 4 make clear that this poor performance is not due to either bad luck or some other unobservable feature of such villages. Centrally funded poverty alleviation policies are implemented in the village when the Gram Panchayat 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, shows that the Pradhans of Maratha land dominated villages are less active in undertaking the meetings required to secure resources.

Table 4 - Estimations of Gram Panchayat Measures

Dependent Variable	Coefficient (γ_3) Prop. Marathas	Coefficient (γ_2) MLD	Obs
Maratha Pradhan (All)	2.44 (0.45)***	0.57 (0.32)*	289
Maratha Pradhan (Unreserved)	2.42 (0.65)***	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)	-167.5 (146.4)	-117.3 (84.0)	204
Revenue (2)	2.39 (4.89)	-9.03 (3.69)***	290
Expenditure	2.59 (4.61)	-8.20 (3.51)**	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)	-0.09 (0.45)	-0.77 (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	2.39 (1.80)	-3.73 (1.47)***	290
MP Meetings	0.94 (2.26)	-3.30 (1.93)**	290
DC Meetings	-1.15 (0.89)	-1.75 (0.67)***	290
Lobby for funds	0.26 (0.38)	-0.61 (0.27)**	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. The first two regressions 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 Gram Panchayat) 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 identify 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 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. Revenue (2) and Expenditure are per capita values from the 2001 Village Census. These are annual measures. BPL refers to Below Poverty Line. EGS refers to Employment Guarantee Schemes. Regressions are ordinary least squares except for the EGS (1) variable which is a probit estimations. 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 upto the village level to run alternative village level regressions. Regression disturbance terms are clustered at the village level.for the hosuehold-level regressions. CEO, MP, and DC meetings all refer to the number of times in the last year that the GP has met with officials from higher level governments to seek resources (DC refers to District Collector)). This information is from the Gram Panchayat Questionnaire. The regression in the final column is a probit estimation on a variable equal to one if GP has lobbied for government funds to address a specific problem as reported from the Village Questionnaire.

Hence the means by which Maratha dominace of land gives rise to political power remains a puzzle. Panchayats where Marathas are landlords 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.

3.2 Individual and Household Estimations

3.2.1 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) emphasises the importance of such historical factors in affecting social capital today. 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 5 makesclear, this is not the case. This results suggest the opposite is true. Individuals are more likely to report that people in their village can be trusted in these villages, and that they are specifically less likely to be cheated by large landowners (interestingly the opposite occurs due to Maratha population numbers). Social cohesion is, if anything, better in villages dominated by Maratha land owners.

3.2.2 Economic Clientilism

The positive indication of social relations within villages dominated by Maratha landlords suggests another avenue that could explain their political control. As we've already seen, the services provided by the Panchayat 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. Since the landlords are providing benefits that are provided by the Panchayat 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 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 unforseen 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 and help that the poor receive from the large landholding upper castes in such villages. Since this is valuable, the poor are willing to cede political power to large landowners in return for this direct insurance, and the landowners use it to implement policies that they prefer. 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.[9]

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 panchayat and credit insitutions. As the following quote from a farmer in one such village makes clear, these 'transactions' clearly involve a quid pro quo element.

> "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 (1977) description of 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. Moreover, the logistics of undertaking this sort of political transaction in the villages of our sample make this feasible even under anonymos balloting. There are about 5 to 6 wards in a panchayat 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 Panchayat, implying a not implausible level of monitoring required to support vote trading.

For this to be going on, we should then see that the provision of 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 5 demonstrate, this is indeed the case. Is there then evidence that such transfers and social cohesion are instrumental in allowing the elected

[9] 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.

representatives of such villages to follow policies that are not in the direct interests of the poor? The third set of estimations in Table 5 suggest that there is. It seems that voters in Maratha landlord dominated villages, with widespread insurance and better social capital, also see the panchayat 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, and individuals in those villages are more likely to donate both labor and cash to collective village activities.

Table 5 - Estimations of Social Capital, Inter-Caste Relations, and Collective Village Life

Dependent Variable	Coefficient (β_4) Prop Marathas	Coefficient (β_3) MLD	Obs
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)	0.01 (0.09)	0.12 (0.06)**	8171
Inter-Caste (2)	-0.06 (0.09)	0.13 (0.06)**	8172
Inter-Caste (3)	-0.05 (0.13)	0.10 (0.07)*	8171
Inter-Caste (4)	0.03 (0.09)	0.11 (0.06)*	8169
Inter-Caste (5)	-0.07 (0.10)	0.12 (0.07)*	8170
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 clustered at the village level. Robust standard errors are in parentheses. A single asterix refers to significance at the 10% level, double for 5%, and triple for 1%. 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 somone 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) comapred to going directly to the poor or low status; the rich and high status; or to panchayat 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.

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. As already mentioned, 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, efforts and raising wages. This is a reason that has been informally suggested:

> ....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

3.2.3 Economic Measures

The most direct 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 over 4 months. In our data, kharif crops are grown on 77% of cultivated land, they generate 73% of total yields and form 81% of total 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 neglible). Labour forms 31% of total kharif input expenses, fertilizer 30%, and seeds 24%.

As the first set of estimations in Table 6 document, preliminary findings are consistent with our conjectured avenue of effect. Wages are lower in Maratha land dominated villages, while both yields and profits are higher.

Table 6 - Estimations of Wages, Yields, and Trading Relations

Dependent Variable	Coefficient (β_4) Proportion Marathas	Coefficient (β_3) MLD	Observations
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 are included in the wage and labour supply (days

worked in the past year) estimations (these include, gender, age, and education). Regression disturbance terms clusterd 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 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..

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 employment contract between a landowner and workers will have exactly these features (increasing wages and declining productivity) when poverty alleviation policies and the EGS are implemented.

4 The Role of Caste

Up to now we have diverted the question of why it is that Maratha landlords and not landlords of other castes, are more effective in obtaining political power. According to the sociological literature on rural Maharashtra this finding is not surprising, and the large volume of writing on the issue of Maratha power suggests two prominent reasons that we will scrutinize more carefully in this section. Firstly, there are authors that emphasize that Marathas as a traditionally dominant and cohesive caste have a history of political dominance from which their current position of dominance derives. Why historical dominance should imply dominance today is typically not spelled out, but one candidate set of explanations is suggested by Maratha Social Cohesion.

4.1 Maratha Social Cohesion

Theoretically, social cohesion could certainly play a role in explaining Maratha over-representation. The simplest way to conceive of this is to allow that

Marathas are more effective in pursuing political deals amongst themselves. Conceptually it is possible that the social cohesion of Marathas ensures that a Maratha cheating another (in a political or other form of transaction) suffers a higher cost, than if doing so in a transaction with a non-Maratha. 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. We refer to this as the "sociological" explanation for Maratha political dominance. Once again, we are able to assess the likelihood of this by turning to our village surveys. The last set of estimations in Table 5 show that there is very little direct evidence of this in our data. That is, Marathas are not more likely to trust members of their own caste in Maratha dominated villages.

4.2 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. 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, as we shall report in detail, are conducted through either a Maratha trading network or a using members of the traditional trading caste (who are not from the villages, rather they travel from village to village for trade). 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'. The last set of estimations in Table 6 demonstrate that the use of Maratha trading networks by lower castes is more likely in the Maratha landlord dominated areas.

5 Formal Model of the Political Process

Though there is not strong evidence in favor of higher trust levels among Marathas it may still be the case that they do have improved social cohesion that is simply not being accurately picked up in our survey. Alternatively, even though there is some evidence that use of Maratha trading networks by low castes is more likely in the Maratha Landlord dominated areas and neither pieces of evidence are conclusive as to this being the source of Maratha

dominance.

However, thinking through the means by which these two different mechanisms would be having effect leads to a set of testable implications to distinguish between the different potential sources of power. In this section we develop a formal model that embeds both potential means by which Maratha landlord advantages in sustaining a P-C scheme can be sustained and demonstrate formally that these two sources lead to differing predictions for a set of observables. We informally describe the intuition underlying these different implications and then proceed to their estimation.

In each village there are two classes. Workers who primarily generate income from selling labor, denoted by W and Landlords, who hire labor and whose income derives from landholding. Workers are always a numerical majority and we assume that class numbers do not vary across villages.[10] There are $2n$ workers in each village and $1 << n$ 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 and landholdings can vary across villages as reflected in our village survey. Each agent is identified by both class and caste.

For 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.[11] We explore the credibility of such promises below.

Apart from credibility of promises, feasibility of vote trading requires that sufficient benefits be generated for a landlord by his purchasing votes. Here, the public good nature of Panchayat control leads to a free-riding problem. A single landlord has incentive to opt out of political involvement and free-ride on the efforts of the politically active landlords who purchase power and govern in landlord interests. Effective landlord mobilization requires solving this free-riding problem.[12]

[10] The breakdown of village numbers by class is not available in our data.

[11] 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.

[12] 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 is not credible that the other landlords would not move to shore up the lost political support and thereby give up panchayat control. Consequently, though it is theoretically possible to judiciously construct a landlord coalition in such a

We assume that it is solved symmetrically. Since the size of the landlord class is normalized to 1 each landlord is responsible for delivering the votes of n workers. Caste identity, and the ensuing social cohesion it affords, can help in circumventing free-riding. Specifically, we allow that a group of landlords can impose social costs on anyone not contributing to the costs of securing village control, i.e., free-riding landlords 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, C_M, and those lower punishments imposed on members of non-Maratha castes by their caste brethren when they free-ride, $C_N \leq C_M$. Individuals who do not share a caste cannot impose social punishments on each other; $C_0 \equiv 0$.

5.1 Insurance

For simplicity we assume that utility is linear in consumption, and that the default valuation of a unit of consumption is 1. This would generally generate no incentives for insurance. However, insurance benefits can arise if the valuation of consumption varies across states. We assume two possible states. With probability μ, a worker (or worker's family) enters a state of need.[13] In a state of need the worker's (family's) marginal valuation of consumption is $\beta > 1$ and transfers from landlords generate net social surplus. An insurance contract from a landlord to a worker is a promise to transfer an amount S in state of need. Such a state is observable to both landlords and workers but not enforceable by formal/legal mechanisms.[14]

5.2 Incentive compatibility of insurance promises

Since the panchayat system requires only the intermittent delivery of political support (once every five years a vote occurs) political power cannot be withdrawn even if promised insurance is not delivered. To work, proposed insurance transfers must be incentive compatible for landlords. This is the second place where caste cohesion can matter. We assume that a landlord's reneging is socially costly. If landlord i deviates from delivering promised support to worker j of amount S_{ij} in $j's$ state of need, the worker takes the following two punitive actions: he withdraws political support in future

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, and we shall model these directly.

[13] The reciprocal probability leads to the default state.

[14] The right information assumptions to make in a rural village setting.

elections and he socially sanctions the landlord. As for the social sanctioning available *between* landlords, this is denoted C_M if both are Maratha, it is $C_N < C_M$ if both are non Marathas but co-caste, and it is $C_0 = 0$ if they do not share a caste.[15]

For insurance transfers to be incentive compatible, necessarily

$$S_{ji} \leq C_i + C_j. \tag{3}$$

where C_i, denotes direct social sanction from the worker and C_j, is the induced free-riding social sanction from other landlords for both j and $i = N$, M or 0.

5.3 The cost of a vote

A worker selling his vote evaluates outcomes assuming the vote ensures landlords pursue policies in their own interests, as opposed to the default panchayat outcome without vote trading where pro-poor policies are pursued. The cost of a worker's vote depends on the worker's caste and that of the landlord involved in the vote buying. Rationality of vote trading requires that for worker j: $U_j^W(L) \geq U_j^W(W)$, where U denotes the net present value of utility and the term in parantheses refers to the group controlling the panchayat; the subscript $j \in \{M, N\}$ refers to j's caste, and superscript W denotes his worker status.

If the worker is non-Maratha and the landlords are Maratha, then in addition to insurance benefits, the landlords can also offer network access which we assume is also valued linearly in utility metric of amount X.

So, not selling his vote ensures pro-poor programs, P, but leads to no insurance and no trading network access for non-Marathas:

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

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

If voting for the landlords' candidate, programs are shut down, but insurance is received, and network benefits arise $d_{ji} = 1$ if either the worker is Maratha, $j = M$, or the landlord who he supports is; $i = M$. Otherwise $d_{ji} = 0$.

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

[15] Note that withdrawal of worker's political support will not lead to overall Panchayat control reverting to workers. However, it will lead to sanctioning by other landlords since he 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.

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

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

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

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

Only if this condition holds is vote trading beneficial to both workers and landlords.[16] The landlord's incentive compatibility condition (3) must hold.[17]

We summarize:

Proposition: *Clientilist vote trading in a village occurs between landlords of caste j and workers if and only if there exist at least n workers under which both condition* (3) *and condition* (5) *hold.*

Moreover, the two different explanations for Maratha political dominance (Sociological versus Caste Networks) affect the likelihood of sustaining a clientilist outcome through distinct channels and lead to contradictory implications:

[16] What's going on in this condition? The $\beta > 1$ is the benefit of providing insurance. It's always a good thing to provide as it is a transfer from low valuers to high in the right state, so the higher the value of β the easier this condition is to satisfy. The probability of the need state occuring, μ, cancels out of the condition. If it's high then good for workers, if low good for landlords, one comes at the expense of hte other. The government pro-poor programs, P, do not come into the village with vote trading. That's inefficient from a village perspective, so the greater the value of these, the harder is the condition to satisfy. The greater the value of output gained $p(e(L) - e(W))$ the better it is to vote trade. This value will generally exceed the cost $c(e(L)) - c(e(W))$, why? because in an efficiency wage world we are way short of first best effort allocation, so pushing it higher is good. The value of network access is also good for the deal, and it is efficient to extend. It comes at no cost to the Maratha landlords and generates benefits for non-Maratha peasants.

[17] 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.

Corollary 1: *Caste enters condition* (3) *only via the 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.*

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.*

Proof of these corollaries is direct by inspecting the conditions.

If Maratha social cohesion is the root cause of Maratha land dominance leading to power, then the factors favoring Maratha landlord dominance will be most pronounced in villages that are also Maratha populous. Such villages should then be more likely to sustain a vote-trading deal between landlords and workers. Consequently we should find that increasing the Maratha population in Maratha landlord villages should negatively affect panchayat 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.

The converse should happen if Maratha networks are the source of Maratha land dominance leading to Maratha political power. Network advantages are most pronounced when Maratha landlords trade votes with non-Maratha peasants. Consequently, increasing the Maratha population in Maratha landlord dominated villages should make vote-trading less likely to occur. Accordingly the interaction between Maratha population and Maratha land dominance 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.

In summary the Maratha advantages due to social cohesion should be most pronounced when Marathas are trading votes with Maratha workers. Maratha landlord dominance should then be more likely in those villages where the proportion of Maratha workers is higher. Alternatively, if caste networks are relatively important then the advantage of Maratha landlords is greatest when buying the votes of non-Maratha workers. Then Maratha landlord dominance should be less likely to yield political power as the proportion of the worker population that is non-Maratha increases. The econometric implication of this reasoning is:

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 Social Cohesion explanation and the converse sign according to the Caste Networks explanation.*

We can test this directly by interacting Marartha Landlord and Maratha Populations in our baseline regressions.

6 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 7, 8, and 9 present the results obtained by including the interaction term in all of the previous regressions, with the coefficient of interest corresponding to λ_5 (θ_4) in the household (village) level regressions.

Table 7 first presents the results for the governance indicators. As we saw in the first set of regressions, 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 7 come down overwhelmingly in favor of Maratha networks being the key factor in explaining this. Consider Revenues (rows 1-3) 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 at the 10% level on two of them.

Rows 4-12 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. 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.

Table 7 - Estimations of Gram Panchayat Measures with Interaction

Dependent Variable	Coefficient (θ_3) Prop. Maratha	Coefficient (θ_2) MLD	Coefficient (θ_4) MLD*Prop. Maratha	Observations
Revenue (1)	-271.3 (279.4)	-184.9 (99.0)*	178.8 (267.2)	204
Revenue (2)	-7.3 (7.5)	-14.1 (5.1)***	15.3 (8.2)*	290
Expenditure	-5.7 (7.1)	-12.6 (4.9)***	13.0 (7.8)*	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 (0.64)*	-1.25 (0.41)***	1.48 (0.78)*	275
BPL Programs (2)	-0.30 (0.24)	-0.48 (0.15)***	0.61 (0.29)**	275
EGS (2)	0.05 (0.09)	-0.12 (0.04)***	0.15 (0.11)	275
EGS (3)	0.03 (0.17)	0.20 (0.11)*	-0.23 (0.22)	4710
CEO Meetings	2.89 (4.05)	-3.47 (1.07)***	-0.79 (4.17)	290
MP Meetings	-0.31 (2.77)	-3.96 (1.98)**	1.97 (1.82)	290
DC Meetings	-2.77 (1.30)**	-2.61 (0.92)***	2.56 (1.33)*	290

Notes: MLD refers to Maratha Land Dominance. 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 4 for all other variables. Regression disturbance terms are clustered at the village level.for the hosuehold-level regressions.

Consider now Table 8. The social capital measures are in the first 6 rows. As before answers to these reflect higher levels in MLD villages. As the caste network explanation suggests, the effects of MLD 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 Sociological explanation for Maratha dominance, and surprising on a priori grounds.

Rows 7-13 suggest the reason this may be occuring. 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, Rows 14-17, also reflect the networks explanation. All castes are more likely to want collective and non-targetted expenditures in MLD villages, but this is mitigated by increases in the proportion of the village that is Maratha.

Another means of getting at 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 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 higher proportions 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 8 strongly supports 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 the theory of dominance based on networks suggests, this is less likely to occur the larger the proportion of the MLD village that is Maratha.

Table 8 - Estimations of Social Capital, Inter-Caste Relations, Collective Village Life, and Voting with Interactions

Dependent Variable	Coeff. (λ_4) Prop. Maratha	Coeff. (λ_3) MLD	Coeff (λ_5) MLD*Prop.Mara	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 5. 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 somone 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). 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 houshold voted for a candidate due to a personel 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.

Economic variables also line up precisely as predicted by the Maratha networks model. 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.[18] 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 the impossibility of mismeasured land productivity explaining the interaction term here.

[18] 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 general equilibrium effect of reduced programs in Maratha land villages. We can test this alternative explanation by analyzing the effects of Maratha land on wages for individuals who report having insurance and those who do not. According to the Maratha network theory 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 9 indicates, the network theory is again supported. Individuals both with, and without insurance, report lower wages in MLD villages, and this is mitigated by Maratha population numbers.

Table 9 - Estimations of Wages, Yields, and Trading Relations with Interactions

Dependent Variable	Coeff. (λ_4) Prop. Mara	Coeff.(λ_3) MLD	Coefficient (λ_5) MLD*Prop.Mara	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 6. 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 partime 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.

As we have seen above, the interaction term between Maratha land dominance and Maratha population numbers enters in a way that is strongly consistent with the predictions of the network explanation for Maratha dominance. A further direct test of this explanation is to add a similar 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 estimatons in Table 9 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.

6.1 Non-linear Interaction Effects

In this section we explore further the significant 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 for when Marathas dominate the population as well, i.e., the are also the singlest 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 greatly undo the effect of Maratha land dominance. Why? In such villages, control of the Panchayat 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 Maratha network theory explanation, only increases the majority and is a waste.

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 40% or more, were driving the interaction effects of the previous section. Hence it is through several iterations that we have settled on the results of this section.

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 A2 in Appendix B presents the results for the various dependent variables. The results are again consistent with the Maratha networks explanation. For most variables the interaction terms 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 Marathat landlord dominance are undone – hence the coefficient on the interaction term being opposite sign to the direct effect when Maratha population is "large".

7 Conclusion

To be completed

8 Appendix A

8.1 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 input use are largely fixed through the crop cycle. However, the quality of crop obtained depends critically on good labor input and dilligence 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 chararcterize 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, $\overline{u}$, as depending positively on the incidence of these programs. For simplicity let this take two values, $\overline{u}(W)$ when Workers control the panchayat and actively seeks out these programs, and $\overline{u}\,(L)$ when Landlords control it and such programs are shut down. These are

taken as given when worker and landlord play the labor/production game.

8.2 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

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

The term $u(w)$ is increasing and concave, $c(e)$ is increasing and convex, and $\overline{u}(x)$ 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 $\overline{u}(W) > \overline{u}(L)$.

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

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

implying.

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

Substituting this in, the ptimization problem becomes:

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

With a FOC that implies:

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

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

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

Proof: At e^* :

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

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

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

rearranging:

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

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

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

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

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

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

9 Appendix B

Table A1 - Estimations of Public Goods and GP Funds

Dependent Variable	(θ_3 or λ_4) Prop.Mara	(θ_2 or λ_3) MLD	(θ_4 or λ_5) MLD*Prop.Mara	Obs
Electricity (% households) [Low Castes]	-14.0 (15.1)	-6.9 (6.9)	9.8 (17.4)	537
Public Taps (per capita) [Low Castes]	-0.24 (0.09)	0.02 (0.08)	0.03 (0.12)	520
Public Toilets (per capita) [Low Castes]	0.01 (0.02)	-0.01 (0.005)*	-0.01 (0.02)	529
Public Wells (per capita) [Low Castes]	-0.03 (0.03)	-0.04 (0.01)**	0.07 (0.03)**	512
Street Lights (per capita) [Low Castes]	0.10 (0.09)	-0.03 (0.05)	-0.11 (0.14)	544
Good Road [Low Castes]	-0.66 (0.86)	-0.14 (0.36)	1.28 (0.92)	532
Improvements (last 5 years) [Low Castes]	-0.37 (0.61)	0.15 (0.31)	0.37 (0.71)	554
Electricity (% households) [Marathas]	11.4 (14.6)	3.8 (8.8)	-18.0 (14.6)	542
Public Taps (per capita) [Marathas]	0.04 (0.20)	-0.09 (0.16)	-0.12 (0.21)	542
Public Toilets (per capita) [Marathas]	0.02 (0.02)	-0.005 (0.02)	0.01 (0.03)	542
Public Wells (per capita) [Marathass]	0.28 (0.16)	0.10 (0.06)	-0.33 (0.19)*	542
Street Lights (per capita) [Marathas]	-0.13 (0.14)	-0.15 (0.09)	0.11 (0.16)	542
Good Road [Marathas]	0.07 (0.79)	0.25 (0.56)	0.20 (0.90)	542
Improvements (last 5 years) [Marathas]	-0.19 (0.78)	-0.15 (0.43)	0.84 (0.82)	542
Beneficiaries of GP funds (by Low Castes):				
Powerful Villagers	0.08 (0.39)	-0.03 (0.18)	0.14 (0.46)	4608
Panchayat Members	0.26 (0.46)	0.18 (0.19)	-0.07 (0.51)	4608

Notes: Refer to notes of Table 4. The last two rows report the results from a multinomial logit estimation where the reference category is funds are targeted appropriately (village, or low status).

Table A2 - Estimations with Non-Linear Interactions

Dependent Variable	Coefficient (φ_3 or ψ_2) MLD	Coefficient ($\varphi_5$or ψ_4) MLD*(Prop. Maratha > 0.35)	Observation
EGS	-0.52 (0.15)***	0.43 (0.21)*	7725
DC Meetings	-2.59 (0.90)***	2.05 (0.83)***	290
Revenue	-13.13 (4.55)***	9.12 (4.55)*	290
Expenditure	-11.86 (4.44)***	7.87 (4.32)*	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

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