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Does Political Affirmative Action Work, and for Whom? Theory and Evidence on India's Scheduled Areas

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Abstract

Does political affirmative action undermine or promote development, and for whom? We examine Scheduled Areas in India, which reserve political office for the historically disadvantaged Scheduled Tribes. We apply a new theoretical framework and dataset of 217,000 villages to evaluate the overall impact of affirmative action on development, as well as its distributional consequences for minorities and non-minorities. Examining effects on the world's largest employment program, the National Rural Employment Guarantee Scheme, we find that reservations deliver no worse *overall* outcomes, that there are large gains for targeted minorities, and that these gains come at the cost of the relatively privileged, not other minorities. We also find broader improvements in other pro-poor policies, including a rural roads program and general public goods. Contrary to the expectations of affirmative action skeptics, our results indicate that affirmative action can redistribute both political and economic power without hindering overall development.

Keywords: Affirmative Action, Electoral Quota, Reservation, Scheduled Areas, Scheduled Tribes, Scheduled Castes, NREGS, PMGSY, Employment

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1 Introduction

Many countries have adopted political affirmative action with the express aim of raising the voice of marginalized communities in how governments function. This paper asks how improvements in descriptive representation might impact economic welfare. Studying this question is of particular import where poor populations rely on large-scale government welfare programs such as in the case of the Benazir Income Support Program in Pakistan that provides 5.4 million poor women income supplements as a safety net, the Supplemental Nutrition Assistance Program in the United States that helps 46 million low-income individuals purchase groceries every month, and the National Rural Employment Guarantee Scheme (NREGS) in India, the world's largest employment program that we examine in this study.

Does descriptive representation achieved through affirmative action deliver improved welfare for marginalized communities, or does restricting representation prove self-defeating in that it damages the economic prospects of the populations it was designed to politically empower? We study electoral quotas, an affirmative action policy that directly yields descriptive representation and is implemented in over 100 countries,[1] and ask two related, yet under-explored questions: do electoral quotas improve or hinder development; and how are the benefits (and costs) of electoral quotas distributed in society?

Prior evidence is mixed and does not offer clear theoretical expectations. Focusing on minorities explicitly targeted under an electoral quota, some studies, which we review below, show strong positive welfare effects, while others report no improvements. We organize and extend hypotheses from previous work in a novel theoretical framework that enables an explicit accounting of how electoral quotas affect the extensive margin of program implementation (that is, the overall size of the pie) *and* the intensive margin (the distribution of the pie) for targeted disadvantaged groups, non-targeted disadvantaged groups, and for the

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See Bird (2014); Long (2019).

comparatively privileged groups under the status quo. This exercise allows a fuller understanding of the trade-offs involved in the implementation of affirmative action policies. A *solidarity* hypothesis predicts that shared interests and experiences between minority groups should lead to positive program spillovers from quota-targeted to non-targeted minorities. A *crowding-out* hypothesis predicts that gains for a quota targeted minority will come at the cost of other groups, particularly non-targeted minorities. And, a *performance* hypothesis predicts better outcomes for targeted minorities and unchanged outcomes for others, or, at the very least, negative outcomes for others that do not outweigh gains for targeted minorities.

This paper examines a large electoral quota in India that brought increased descriptive representation to well over 100 million citizens. Shortly after Independence from the British in 1947, the Indian parliament declared certain regions in the country as Scheduled Areas (SA), a designation linked to the protection of a historically-disadvantaged category of minority groups, the Scheduled Tribes (ST). From 2000, under the Panchayat Extension to Scheduled Areas (PESA) Act, India's national parliament implemented a dramatic electoral quota in Scheduled Areas requiring that all chairperson positions in three tiers of local government councils, as well as at least half the seats on each of those councils, be reserved for individuals from the Scheduled Tribes.

Why does understanding the impact of this electoral quota matter? First, the quota has received no systematic quantitative analysis despite the fact that it is present in half of India's states and covers nearly half of the territory within those states. Second, the quota targets ST, who are considered to be among the most economically vulnerable and politically excluded groups in India. Third, the permanence of the Scheduled Areas quota is qualitatively different from population-based quotas that rotate over time. Scholars have argued that rotation is an impediment to long-term quota success (Dunning and Nilekani, 2013; Bhavnani, 2009).

Isolating the causal effect of Scheduled Areas is not straightforward. Indeed, comparing

SA to non-SA using data from the 2001 Indian Census shows that they differ on a number of dimensions. By employing a geographic regression discontinuity (RD) design similar to Dell (2010), we absorb variation that correlates with geographic space, allowing for a comparison of villages lying just on one or the other side of the border between non-Scheduled and Scheduled Areas. In other words, control (non-Scheduled) villages appear similar to treated (Scheduled) villages except that in treated areas candidates for local offices are restricted to ST individuals, whereas in control areas these restrictions are not in place.

We first examine the impacts of Scheduled Areas using data from NREGS, a flagship federal program in India with an annual cost of approximately US$6 billion. Each year, the social protection scheme officially guarantees 100 days of minimum-wage employment for every rural household in India. We study program delivery to rural populations in 2013, up to 12 years after the first implementation of PESA. We do this by creating a new dataset with 217,144 villages that combines official NREGS implementation data with an original spatial dataset of Scheduled Area status. The scale and depth of these data, which permit us to evaluate both the extensive *and* intensive margins of program delivery, are a substantial advance on existing work on affirmative action and economic development.[2]

Results show that NREGS delivery improves substantially for the targeted minorities (ST), who receive 24.1 percent more workdays in Scheduled Areas. Improvement appears to come primarily at the cost of work for non-minorities, who receive 12.5 percent fewer workdays. We find no evidence that the quota causes a change in employment for the non-targeted, historically disadvantaged minorities (SC). Our evidence thus offers support for the *crowding out* and *performance* hypotheses, but not for the *solidarity* hypothesis. Overall, the results indicate that the delivery of government programs in Scheduled Areas are no

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[2]While Jensenius (2015), Pande (2003), and Das, Mukhopadhyay and Saroy (2017) conduct similar exercises, our detailed data help to disaggregate the non-targeted group into meaningful categories of SC and non-minorities, allowing us to study the causal effect of reservations on both efficiency and redistribution.

worse than in non-Scheduled Areas.

Are these effects specific to NREGS? We evaluate broader impacts of Scheduled Areas by examining a second large-scale development scheme as well as outcomes from the 2011 Census. The 2011 Census reveals higher employment for women in Scheduled Areas, particularly those who are underemployed. Data also show improved provision of public goods that is likely to benefit disadvantaged communities. We also observe increased rural road connectivity from the Pradhan Mantri Gram Sadak Yojana (PMGSY) village roads program. These improvements are consistent with the results from NREGS, insofar as they reflect a higher responsiveness to the needs of marginalized communities.

To what extent are the results we observe the function of an electoral politics mechanism? We provide four pieces of evidence. First, qualitative evidence from Indian historical studies, as well as quantitative evidence from the PMGSY program and the Indian Census, show that villages on opposite sides of the Scheduled and non-Scheduled border were very similar on a host of dimensions prior to the implementation of PESA between 2000 and 2010. Second, the quota is most effective where the targeted group is a relatively small proportion of the local population   where we would expect a quota to have the largest marginal impact, given the target group's lower pre-quota bargaining power. Third, the effects of the quota are reduced in areas of overlap with quotas for state-level ST legislators. Fourth, the impact of the quota is largest when it constitutes the greatest shock to political representation: that is, following the first election.

This paper makes theoretical, empirical, and policy contributions. The theoretical contribution is to explicitly lay out hypotheses on the trade-offs of affirmative action on targeted and historically disadvantaged, non-targeted and disadvantaged, and non-targeted and non-disadvantaged identity-based groups, and combine them into a unified framework. Empirically, our unique data allow us to test these hypothesis in the context of three critical, village-level data sources   the largest rural employment scheme in the world, a national rural roads development program, and public goods and economic measures from the census

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of the world's largest democracy, India. From a policy perspective, all too often policy-makers and analysts treat parallel pro-poor economic and political efforts in isolation. By considering their interaction, we hope to advance our understanding of how politics can be made to work for inclusive development.

2   Theory and Hypotheses

In this section, we review conflicting findings and draw hypotheses from existing work on the effects of political affirmative action on government functioning.

2.1   Extensive Margin (Size of the Pie)

Given the same resources and institutional design, do electoral quotes positively or negatively affect the *overall* efficacy of government programs? Implementation of government programs would suffer if quota politicians are less competent than non-quota politicians (Jensenius, 2017). Jensenius (2015) presents qualitative evidence that SC quota politicians are viewed as inexperienced and referred to as "weak", "inefficient", and "useless" (p.202). Deshpande and Weisskopf (2014) document how some oppose affirmative action policies due to a belief that they result in less qualified individuals and worse performance. Bertrand, Hanna and Mullainathan (2010) find that students admitted under quotas see an increase in income, but these gains are more than offset by losses in earnings for individuals displaced by the quota.

Conversely, implementation could improve if quota politicians work harder for their constituents. Chin and Prakash (2011) report that ST quotas, but not SC quotas, result in lower levels of overall poverty. Deshpande and Weisskopf (2014) find that a greater proportion of high-level SC/ST employees in the Indian Railways is correlated with both increased productivity and growth. Evidence also suggests that women exert more effort and outperform men when positions of political influence are available to them (Beaman et al., 2010;

Volden, Wiseman and Wittmer, 2013). Das, Mukhopadhyay and Saroy (2017) argue that in the presence of asymmetric group sizes, affirmative action can improve the efficiency of outcomes. Finally, government performance could remain unchanged if quota politicians perform no better or worse than non-quota politicians, as Bhavnani and Lee (2018) find for Indian bureaucrats.

2.2   Intensive Margin (Distribution of the Pie)

We now turn to the impact of affirmative action on targeted and non-targeted historically disadvantaged communities, and more privileged communities. While theoretical examinations predict positive results for **targeted minorities**, existing research from India on electoral reservations has found mixed effects. Besley, Pande and Rao (2007), Duflo and Chattopadhyay (2004), and Beaman et al. (2010) show that reservations for SC/ST and women improve the welfare of direct beneficiaries. Other work, such as Dunning and Nilekani (2013) and Jensenius (2015), find no overall effect of electoral quotas on targeted groups. Unlike our case, one explanation for weak effects in the literature is the rotating nature of quotas in these contexts, which limits politicians' incentives to target benefits along ethnic lines.

We expect targeted minorities to benefit under affirmative action. Less clear is what we should expect for **non-targeted** groups. We draw three hypotheses from existing literature for why gains for targeted minorities may alternatively result in positive, negative, or no spillovers to other groups.

Solidarity Hypothesis: *Non-targeted minorities* may experience positive spillovers from quotas targeting other minorities. Studies have found that minority politicians may carry intrinsic motivations   absent electoral motivations   to help individuals with whom they identify (Broockman, 2013; Adida, Davenport and McClendon, 2016; Singh, 2015). They may also share policy preferences with other minorities: Kaufmann (2003) writes that African Americans and Latinos in the U.S. "share objective circumstances [and] interests" (2003,

p.199) and may have a 'minority group consciousness'. Consistently, Adida, Davenport and McClendon (2016) show that African Americans respond positively not only to co-ethnic but also to co-minority (Latino) political cues.

Under this hypothesis, therefore, minority groups not targeted by the quota should also benefit from improved program implementation. Some evidence from India is consistent with this prediction: SC reserved councillors increase village expenditures in a manner that benefits both SC and ST in their village (Palaniswamy and Krishnan, 2012).

These theories are largely silent on the expected effects on *non-minorities*. While one can extrapolate that this group will not benefit under this hypothesis because of a lack of solidarity with targeted minorities, it is unclear if they will be worse off or remain at the status quo. As a consequence, there are also no clear predictions on what happens to outcomes on the extensive margin.

Crowding Out Hypothesis: Gains in descriptive representation for one minority group may come at the expense of benefits for *non-targeted minorities*, especially where targeted and non-targeted minorities are in competition. Meier et al. (2004) examine changes in representation among African-Americans and Latinos and find that improvements in administrative and teaching positions for one group are associated with losses for the other. Expectations of inter-caste competition and negative spillover effects are captured by Khosla (2011), who argues that as "different castes vie to capture NREGS benefits, they limit the access of other caste groups" (p.65).

Under this hypothesis, quotas could leave outcomes for *non-minorities* unchanged especially if targeted minorities still live under social pressure from non-minorities, or where non-minorities are not in competition for the same goods. Alternatively, if competition for resources exists, and if non-minority groups do not retain full control over their distribution, in a weaker version of the hypothesis, non-minority groups could suffer losses.[3] Extant evi-

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[3]Studies also indicate that individuals may be willing to forgo economic gains where they

dence is limited: Jenkins and Manor (2017) note that there is no systematic evidence from India that asks if participation of 'non-poor' in NREGS crowds-out the 'genuinely poor' (p. 168). Overall, critics of affirmative action cite concern that negative spillovers will outweigh any benefits to the targeted group.

Performance Hypothesis: Unlike the previous hypotheses that examined the relationship between various groups on the basis of solidarity or competition, the performance hypothesis simply states that improvements for a targeted minority may come without necessarily incurring costs on other groups, if, for instance, quota politicians exert more effort than non-quota politicians. Beaman et al. (2010) consider the effects of a quota for women on a non-targeted minority group, Muslims, and find that improved outcomes for women do not appear to crowd out benefits for Muslims. Iyer and Mani (2012) find that quotas for women increase reporting of crimes against women but do not appear to affect reporting for crimes against men. Since the spirit of this hypothesis is to make a claim about the net effects of the quota, a weaker version of the hypothesis would state that potentially positive effects on the targeted minority are greater than or equal to any negative spillovers to other groups.

Table 1: Summary of Predictions

Hypotheses	Overall	Empirical Implications: Benefits for...		
		Targeted Minority (ST)	Non Targeted Minority (SC)	Non SC/ST
Solidarity	?	↑	↑	¬↑
Crowding Out	¬↑	↑	↓	¬↑
Performance	¬↓	↑	?	?

might come with social costs under an out-group leader, which could lead non-minority groups to opt out of competition (Akerlof and Kranton, 2010; Moffitt, 1983). The design of NREGS, however, makes this unlikely; see Section 3.4.1.

2.3 Intersecting Identities

We also investigate whether reservations have differential effects, for women and men, for several reasons. First, NREGS mandates that one-third of workers be women, and that women and men be paid equal wages. Dutta et al. (2014) find that 48% of NREGS workers are women, which is approximately twice the share of women in other casual wage work. If quotas improve program implementation, then positive effects may be particularly strong for women.

Second, minority politicians elected under quotas may be more or less responsive to women. Cassan and Vandewalle (2017) report that high caste women are less politically active than low caste women, and therefore reservations for women result in more lower caste women elected to office. Flipping this argument in our case may suggest that reservations will encourage greater participation among women.

Alternatively, men may do better where there are ST reservations. If ST are particularly in need of NREGS work, and bureaucrats are more likely to provide work for men than women, then gains in NREGS, in Scheduled Areas, may be concentrated among men. Dutta et al. (2014) report that this type of rationing is pervasive with NREGS work in poorer states.

3 Context: Identity, Quotas, & Development in India

The Indian government has instituted numerous forms of political quotas since Independence. In the political arena, the constitution provides dramatic guaranteed representation through quotas for individuals from the Scheduled Tribes (ST), Scheduled Castes (SC), Other Backward Classes (or Other Backward Castes, OBC), and/or women in the national parliament, state legislatures, and from 1993 in the country's three-tier system of local government

councils, called *Panchayat Raj*.[4]

We focus in this paper on India's *Scheduled Areas*, a government institution targeting tribal populations that has not yet been subject to systematic quantitative analysis. Scheduled Areas cover over 100 million citizens across nine Indian states   Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Maharashtra, Madhya Pradesh, Jharkhand, Odisha, and Rajasthan.

The demarcation of Scheduled Areas has changed little since the initial formulation during the pre-Independence period. British authorities first provided a list of 'Aboriginal Tribes' and 'Semi-Hinduised Aboriginal Tribes' in the Census of 1872 (Corbridge, 2002, 64) and implemented special institutions targeting these tribes udner the Scheduled Districts Act of 1874. Following Independence in 1947, the new Indian state identified Scheduled Areas in the Fifth Schedule of the Constitution, with minor differences from the British Scheduled Districts Act. The government justified Scheduled Areas specifically as a means to improve representation and welfare for Scheduled Tribes (ST) through special programs and institutions such as the state-level Tribes Advisory Council.[5]

The Constitution assigns responsibility for adding, subtracting or modifying Scheduled Areas to the President in consultation with the relevant state's Governor. In 1962, the Dhebar Commission proposed that an area should be eligible to become a Scheduled Area according to four, relatively vague, criteria: i) Preponderance of tribals in the population; ii) Compact and reasonable size; iii) Under-developed nature of the area; and iv) Marked disparity in economic standards of the people. In practice there has been no exact formula

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[4]While religion is an additional important identity category, since Independence the Muslim minority group has been excluded from political quotas.

[5]We focus on the Fifth Schedule that governs the majority of Scheduled Areas in India. An additional Sixth Schedule of the Constitution details the administration of tribal areas in four northeastern states. For more information, see Appendix A.3.

for updating or adjusting the previous notification or de-notification of Scheduled Areas in India, and these Areas have remained remarkably stable since their initial formulation (see Appendix A3).

3.1 Panchayat Extension to Scheduled Areas

Despite government commitments to promote ST interests in Scheduled Areas, villages on opposing sides of the Scheduled Areas border show few differences on observables or over-time trends prior to the implementation of the local-level political quotas that we study in this paper (see Sections 5.2 and 7.1). Indeed, additional legislation instituting political quotas were designed in large measure to give Scheduled Areas teeth. The Panchayats Extension to Scheduled Areas Act of 1996 (PESA) mandated that *all* chairperson positions at the three levels of local government, and at least 50% of all seats on these councils, be reserved for ST individuals. Hence, when local elections were next held   as early as 2000 for Rajasthan and as late as 2010 for Jharkhand   these reforms gave a tremendous positive shock to the local-level political representation of Scheduled Tribes in India. Unlike other quotas in India that rotate by constituency and over time, the quotas in Scheduled Areas introduced with PESA remain fixed.

3.2 Quotas and Political Conflict: A Case Study of Jharkhand

By way of more detail, we provide a case analysis of the state of Jharkhand that has arguably the most politically charged and turbulent path to local elections with quotas in Scheduled Areas. Even in this politically fraught case, the actual boundaries of the Scheduled Areas have remained relatively unchanged. While Jharkhand passed an amendment in 2001 to allow for PESA-compliant panchayat elections, a legal challenge postponed elections. Only after a decision by the Indian Supreme Court in 2010, upholding the constitutional status

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of identity-based quotas in India, were local elections held in Jharkhand in 2010.[6]

Although the state of Jharkhand was created in part to better represent tribal populations in the state of Bihar, the actual Scheduled Areas within this region did not change. The Scheduled Areas assigned as part of the Indian Constitution's Fifth Schedule remained almost entirely consistent through the Bihar Scheduled Areas Regulation of 1969 and re-notification again in 1977 and 2007. The only changes were the addition to the Scheduled Areas of a single block   Bhandaria of Garhwa district   in 1977; and the Scheduling of two village-clusters, both within Satbarwa block, in 2007.[7]

3.3   Comparisons Across Indian Identity Categories

ST are not the only historically disadvantaged minority category in India, nor the only category targeted via special legislation. Others include the Scheduled Castes, Other Backward Classes (OBC), and women. While OBC also receive mandated representation in local government outside of Scheduled Areas in India, on average, and in taking India as a whole, SC and ST communities in existing literature are considered the most stigmatized, economically vulnerable and politically excluded communities.

The Indian government has acknowledged the vulnerable position of SC and ST communities and accordingly regularly groups SC and ST together for the purposes of special legislation.[8] Outside of Scheduled Areas that privilege ST, since 1992 all local government

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[6]Union of India And Others v. Rakesh Kumar And Others. Supreme Court of India, January 12, 2010.

[7]Appendix A.6 provides further discussion on what constitutes a Scheduled Tribe and the Scheduled Areas in Jharkhand.

[8]SC and ST categories first gained some preferential representation in the Government of India Act of 1935, officially sanctioned in the Constitution via Constitution (Scheduled Castes) Order, 1950 and The Constitution (Scheduled Tribes) Order, 1950. National Com-

councils across the country restrict local council leadership positions for SC and ST, using identical quotas in proportion to their local population that rotate every election cycle (see Duflo and Chattopadhyay (2004); Dunning and Nilekani (2013)).

Both popular and academic writing often describe SC and ST in tandem as examples of minority groups that are the poorest and most vulnerable throughout the country. The Indian government even studies the development of individuals from both groups together via the elite, national government appointed, Planning Commission.[9] For these reasons, we consider outcomes for SC a useful comparison to ST outcomes   as both groups are similarly vulnerable, yet enjoy very different political opportunities in Scheduled Areas. Appendix A provides more details about political quotas in India and SC and ST identity categories.

3.4   Local Government and Development

Local government panchayat institutions in India are responsible for two key aspects of development: welfare schemes and infrastructure, each of which provide local public goods (see Besley, Pande and Rao (2007)). Existing literature identifies roads, sanitation, electricity, water, telephones, school and health facilities, irrigation, and communication as important development sectors for measuring performance of panchayat institutions (Cassan and Vandewalle, 2017; Munshi and Rosenzweig, 2015). Our empirical goal is to measure how political reservations affect the implementation of government programs.

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missions for SC and ST were instituted via Articles 338 and 338A respectively. Legislation was passed to protect individuals from both identity categories from violence in 1989 by means of The Scheduled Castes and Scheduled Tribe - Prevention of Atrocities Act.

[9]See for instance `http://planningcommission.gov.in/aboutus/taskforce/inter/inter_sts.pdf`.

3.4.1   The National Rural Employment Guarantee Scheme (NREGS)

As our key outcome, we chose NREGS, India's largest development program and the largest employment program in the world. NREGS and rights-based policies in India build on prior legislation on decentralization and devolution of power to local government agencies. (Kapur and Nangia, 2015) classify this welfare scheme as part of the lowest tier of social protection in India that covers the vast majority of workers in the country (up to 94 percent) (p. 76-77). Together with other programs like Public Distribution System and the National Social Assistant Program, NREGS is a risk-coping, instead of risk-mitigating, program that provides protection to those already at risk.

The scheme officially guarantees 100 days of minimum-wage employment to every rural household in the country, with no eligibility requirements. Though increases in welfare spending in general might come at the expense of other spending priorities, NREGS funding comes primarily from federal and state budgets. Accordingly, local politicians who do not take full advantage of the NREGS program are effectively "leaving money on the table."[10] Jenkins and Manor (2017) document how NREGS has helped improve the lives of the poorest in India.

Recent research shows that village-level politics are likely to play an outsized role in the distribution of NREGS benefits (Marcesse, 2017).[11] Local-level council chairpersons   whose seats are reserved for ST under the Scheduled Areas quota   have both the capacity and discretion to significantly alter the quality of NREGS implementation and the distribution of NREGS benefits (Besley, Pande and Rao, 2007; Dasgupta and Kapur, 2017; Dunning and Nilekani, 2013; Dutta et al., 2014; Sukhtankar, 2017; Marcesse, 2018).

Local-level authorities are responsible for selecting projects through collective deliber-

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[0]We discuss concerns related to leakage in Appendix F.

See Appendix A.2 for details on the specific responsibilities of local government under NREGS and how local governments, nevertheless, rely on a network of local agents.

ation in village assemblies, selecting program beneficiaries, implementing at least 50% of all works (in terms of total cost), maintaining and transmitting records to higher authorities to process payments, and responding to citizens appeals for work (Sukhtankar, 2017; Dunning and Nilekani, 2013; Marcesse, 2018; Besley, Pande and Rao, 2007; Munshi and Rosenzweig, 2015). In turn, NREGS has bolstered the legitimacy and efficacy of local governments (Sukhtankar, 2017; Jenkins and Manor, 2017). While NREGS implementation remains uneven (see Figure 1), the scheme's implementation carries political rewards - with research showing good NREGS performance is an 'election winning device' in local politics (Maiorano, 2014, p. 95).

The effects of Scheduled Areas on NREGS outcomes that we identify could be a result of these supply-side factors, but also changes in demand for services that differ by identity category. For example, ST might feel more comfortable in requesting work when an ST politician is elected. Research has shown that demand and supply for NREGS work are a product of a large ecosystem that includes informal institutions, bureaucrats, and collective deliberation (Dutta et al., 2014; Khosla, 2011; Marcesse, 2018). Thus, we interpret changes in NREGS outcomes as being driven by both demand and supply mechanisms, both of which would follow changes in representation and which are thus consistent with our conceptualization in Section 2.

Still, prior research indicates that that the binding constraints on NREGS implementation are not demand-side but are driven almost entirely by supply-side factors (Khosla, 2011). Dutta et al. (2014) write that "unmet demand for work is the single most important policy-relevant factor in accounting for this gap between actual performance and the scheme's potential" (p. xxv). Jenkins and Manor (2017) write that while NREGS promises jobs on demand, "many, if not most, poor rural people have little or no experience of making direct demands on authority figures (p. 69)." Similarly, Marcesse (2018) argues that demand itself is affected by incentives of supply agents.

Further, due to the design of NREGS, it is unlikely that electoral quotas will lead individ-

uals, including the status-quo privileged groups (as might otherwise be predicted by results from Akerlof and Kranton (2010); Moffitt (1983)), to reduce their demand for work. This is because NREGS targets poor households and individuals, in rural areas, with work   such as digging ditches and building wells   that is "physically taxing, of uncertain duration, and provides no employment benefits" (Dutta et al., 2014, 14). NREGS was designed for those most in need of work, and as a last resort. Put differently, "By insisting that participants do physically demanding manual work at a low wage rate, workfare schemes such as MGNREGS aim to be self-targeted...nonpoor will not want to do such work, and poor people will readily turn away from the scheme when better opportunities arise" (Dutta et al., 2014, 5,40). a

3.4.2   Beyond NREGS: Rural Roads and Other Public Goods

In addition to welfare schemes, we take two approaches to evaluate broader impacts on public goods. First, we examine impacts of Scheduled Areas on PMGSY, the Prime Minister's Village Road Program. This program was established in 2000 to connect rural villages to the all-weather road network by focusing on constructing and upgrading feeder roads that either did not exist or were unpaved (Asher and Novosad, 2019a). As of 2001 only about half of the 600,000 villages in India were connected to such roads. Importantly, "100 percent funding for construction [under this program was provided] by the Central Government" (ILO, 2015).

As with NREGS, local politicians are critical to PMGSY's implementation, whereby a standardized planning process is in place that incorporates representatives from district, block, and village councils. In fact, the key role of local governments in helping carry out construction and maintenance of roads at the local level has been inspired by their success doing the same under NREGS (ILO, 2015).

Finally, we take a more systematic approach to studying effects on public goods outcomes by using data from the 2011 Indian Census   roughly ten years following the implementation of PESA.

4   Data Construction

To systematically assess how the Scheduled Areas political quota affects development outcomes, we construct a village level dataset for the nine states that have Scheduled Areas. We begin by using the Socioeconomic High-resolution Rural-Urban Geographic Dataset for India (SHRUG) (Asher and Novosad, 2019*b*). This dataset allows us to track the same villages over three different Census waves: 1991, 2001, and 2011. SHRUG includes limited Census data from these waves and data on the PMGSY roads program.

While SHRUG provides information at the village level, NREGS outcomes are measured at the village-cluster (*gram panchayat*) level. We use a new dataset as a matching directory for village and village-cluster data, and then apply fuzzy matching methods to combine SHRUG and NREGS into a single dataset. We next add information on reservations: both on whether a village falls within or outside of the Scheduled Areas, and whether a village falls within an Assembly Constituency that is reserved for ST, for SC, or not reserved. Our final step is to merge the combined dataset with spatial data, as well as with a more complete set of Census variables than was available from SHRUG, on villages from the 2001 and 2011 Indian Censuses. These additional Census data were procured from InfoMap India.

Outcome Variables   We use data on three central outcomes of interest from NREGS in 2012-2013: *Jobcards* are the total number of identification documents issued to prospective workers before they can request to be hired under the program; *Worked* are the number of households that received work under the program in the year; and *Workdays* measures the total number of days worked by individuals under the program. These measures were collected at the lowest level for which they are recorded, the village cluster, from the official NREGS portal. Critically, NREGS data provides all three outcomes for ST, for SC, for those who are neither SC nor ST, and for men and women, separately. Figure 1 shows that there is considerable variation in program implementation across India.

We supplement our main analysis by considering effects of the quota on employment
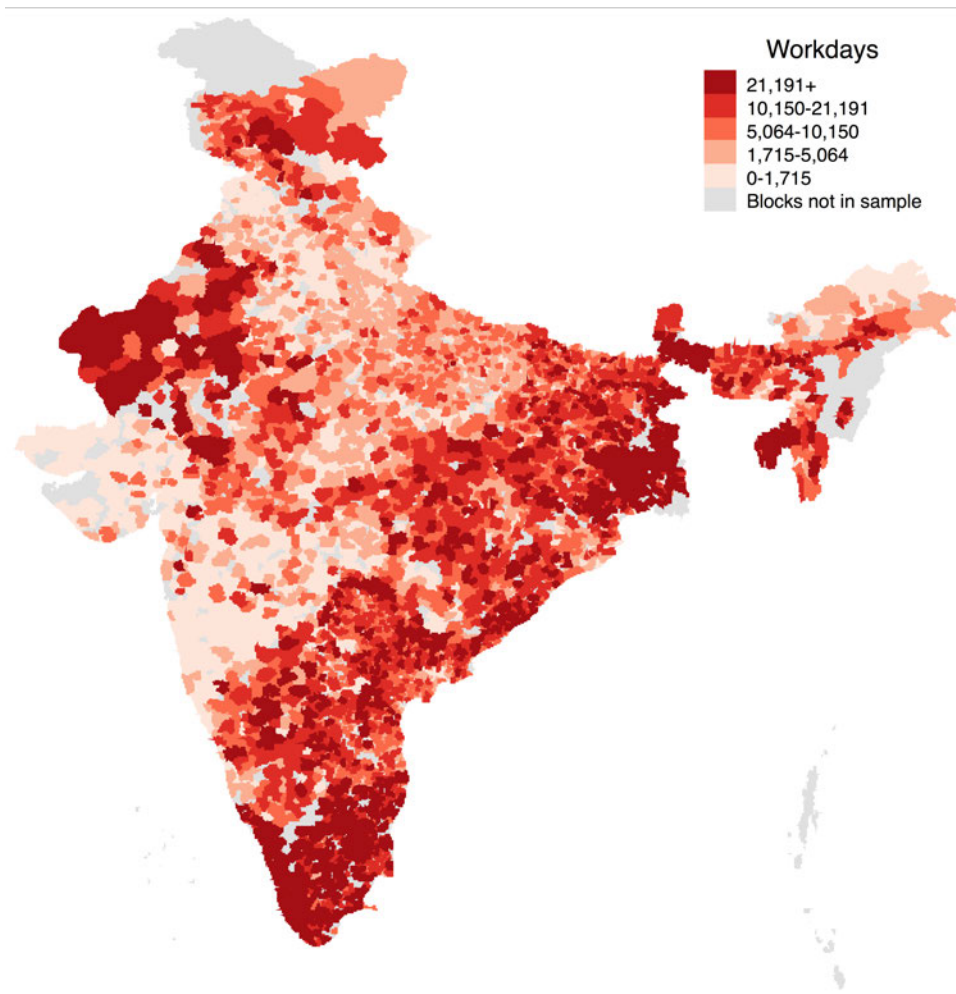
Figure 1: **Variation in 2013 NREGS Workdays Across India**

(sourced from the 2011 Census), road construction under the PMGSY program (from SHRUG), and on public goods provision (2011 Census, but only available for a subset of villages, called market villages).

Scheduled Areas   Our key independent variable is an indicator for whether a *village* is or is not part of the Scheduled Areas. We obtained information on Scheduled Areas status from the Government of India's Ministry of Tribal Affairs. See Appendix B.2 for data sources. States release official documents either listing specific villages as Scheduled or, where all villages within a block or district are Scheduled, the names of those blocks and districts. While two states list individual village names (Andhra Pradesh and Rajasthan), the remaining states list block and district names.

To remain consistent in our coding strategy across states, and to avoid human error that was more likely to occur had we manually coded each village as Scheduled or not in the two states that released information at this level, we elected to code an entire block as Scheduled if *any* village was designated as Scheduled within the block. Empirically, this approach is conservative because, while it accurately codes Scheduled Areas when all villages in a district and block are inside the treatment area, it codes some untreated villages within a block as treated that is, the resulting bias will be in the direction of zero. Our coding is illustrated spatially in Figure 2.[12]

Control Variables   Our control variables, as well as the variables we use to evaluate sorting and over-time changes, are sourced from the Census (for 1991, from SHRUG, and for 2001, from the 2001 Census shape files).

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[2]See Figure A4 for validation that our SA identification is done accurately and is more granular than government maps.
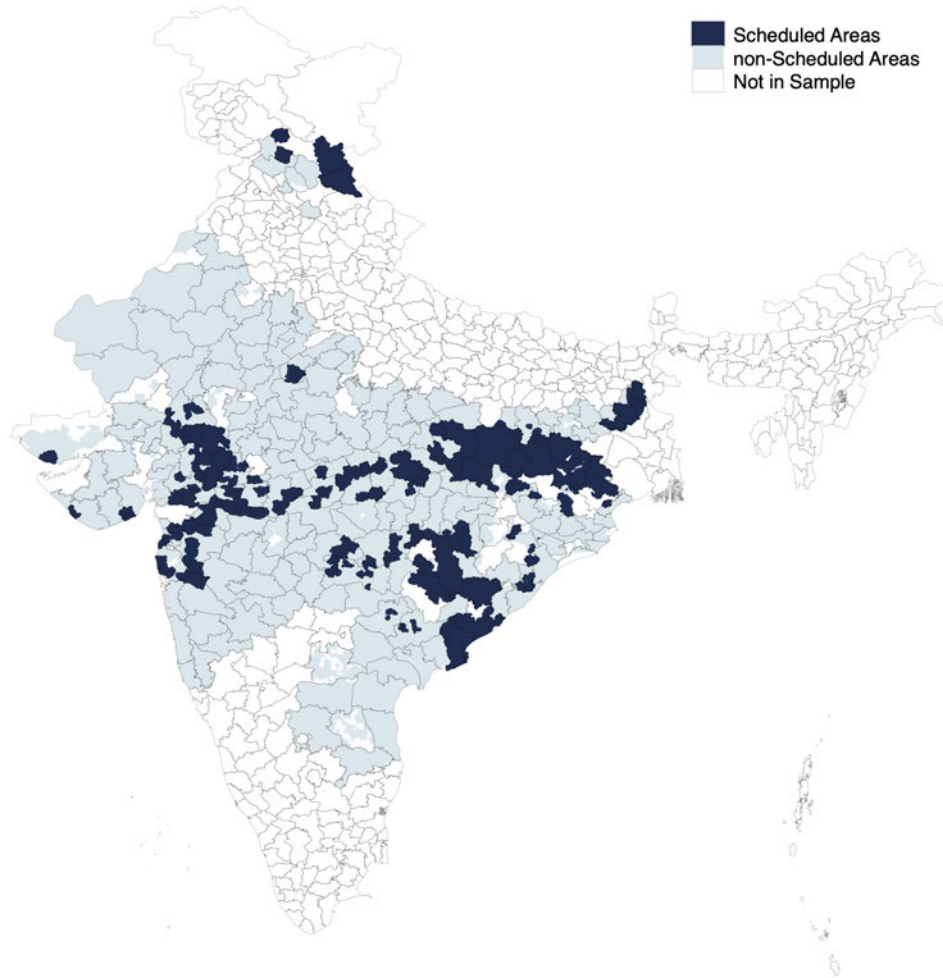
Figure 2: **Scheduled Areas in India** - Unit is the block. Outlined regions refer to district boundaries.

4.1 Summary Statistics

We combine 1991, 2001, and 2011 census data with NREGS data, Scheduled Areas coding, and data on the PMGSY roads program. The dataset successfully matches approximately 217,000 of the 274,026 villages (79%) in the sample. 19 percent of the villages in our data are coded as belonging to a Scheduled Area. ST comprise about 28 percent of the population, while SC are only 13 percent of the population. Non-minorities form the remaining 59 percent. Appendix C.1 presents summary statistics.

5 Empirical Strategy

5.1 Geographic Regression Discontinuity

Consider two proximate villages lying on opposite sides of the Scheduled/non-Scheduled boundary. If they are sufficiently similar on observable characteristics, we can say that the only difference between the two villages is that one village lies in a Scheduled Area, while the other is in a non-Scheduled Area. We approximate this thought experiment with a geographic regression discontinuity design that restricts attention to villages geographically proximate to a boundary dividing Scheduled Areas and other areas within a state.[13] We use the following specification:

$$y_{vgs} \quad \gamma Scheduled\ Area_{vgs} + a_s + f(X_{vgs}, Y_{vgs}) + Z'_{vgs}\phi + \epsilon_{vgs} \quad (1)$$

$$\forall\ v\ \ s.t.\ \ X_{vgs}, Y_{vgs} \in (\ \ h, h)$$

where y_{vgs} refers to outcomes for village v in gram panchayat g and state s. The official NREGS portal only releases data at the gram panchayat level. In NREGS regressions, all villages in the same gram panchayat are assigned the same outcome value, whereas for Census

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[3]Appendix D.1 also presents simple OLS comparisons for main results.

2011 and PMGSY, y varies at the village level. Although treatment is assigned at the village level, we cluster standard errors at the gram panchayat level throughout the paper. This has the benefit of correcting for outcome inter-dependence within the gram panchayat in the NREGS analysis.

Scheduled Area$_{vgs}$ is the treatment variable that equals 1 if a village is coded as being in a Scheduled Area, and 0 otherwise. Outcomes that are left-skewed are logged such that γ can be interpreted in percentage terms. State fixed effects a_s account for any state level shocks, including the different timing of PESA implementation. $f(X_{vgs}, Y_{vgs})$ is a flexible smooth function in two dimensions, latitudes (X) and longitudes (Y).[14] Adding these geographic controls helps the regression absorb spatial trends that might be superfluously driving results.

For each village, we calculate distance in kilometers h to a Scheduled Areas border within the same state so that we may compare villages that provide the closest approximation to random assignment. Based on bandwidth selection algorithms (see Appendix Table A18) we take a conservative bandwidth of 10 kilometers as our standard bandwidth (h). 10km is about one-fifth the size of the median distance (54.4km), and about one-ninth the mean distance (91.3km), from the border in the data (see Figure A8). Last, we include a vector of all village-level Census 2001 indices as well as 1991 and 2001 SC and ST population shares, Z'_{vgs}.

Throughout the analysis, we conduct various robustness tests, including varying bandwidths and functional forms, considering alternate transformations of outcomes, and accounting for spatial spillovers.

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[4]Following Dell (2010), our main specifications use the functional form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$.

5.2 Analysis of Balance with Census Data

With pre-treatment census data at the village level from 2001 and population data from 1991, we analyze balance by evaluating if *Scheduled Area* predicts census variables. To manage the vast number of 2001 census variables, we collapse the 140 variables into 14 substantively meaningful indices by taking the simple mean of their standardized values. We describe this process in Appendix G.

Overall, we find that the geographic RD model yields good balance between Scheduled and non-Scheduled Areas. While we are able to tell the two groups apart in some cases statistically because of the large sample size, the substantive differences across Scheduled and non-Scheduled Areas are small: they remain below 0.1 standard deviations for all but three indices (see Appendix Table A10). Only differences for water, urbanization, and banking indices exceed 0.10 standard deviations, but even in these cases, the differences stay below 0.22. More substantively, the differences we do observe tend toward zero as the bandwidth of analysis shrinks (see Appendix Figure A6). In addition, for all variables we can trace across the 1991 and 2001 census waves, there is little reason to believe that the baseline differences are trending differently over time in Scheduled versus non-Scheduled Areas (see Appendix Figure A7), indicating that controlling for level differences between Scheduled and non-Scheduled Areas may be sufficient. Accordingly, in our analysis we control for *all* fourteen 2001 indices, both imbalanced and balanced.

6 The Impact of Scheduled Areas

6.1 Effects on NREGS

Table 2 presents the main results on NREGS outcomes. The first column shows treatments effects at the extensive margin, while the remaining three columns decompose this effect across ST, SC and Non-SC/ST categories.

Our first finding is that NREGS outcomes improve substantially for STs. As shown in column 2, 20.7% ($p < 0.01$) more job cards are issued to STs in Scheduled Areas. This result carries forward to the number of households that receive work during the year through NREGS the coefficient reflects a 20.3% ($p < 0.01$) increase. Overall, the number of workdays STs receive increases by 24.1% ($p < 0.01$), a jump of about 1,040 more days of work. Second, there is strong evidence that non-SC/STs are the main losers, as shown in column 4. Not only does this group receive 9.8% ($p < 0.01$) fewer job cards in Scheduled Areas, they also suffer a reduction in the number of households employed (8.6%, $p < 0.05$) as well as the total number of workdays (12.5%, $p < 0.01$). Third, we find no evidence that SCs are worse off under Scheduled Areas: the point estimates on all variables are substantively small and are not statistically distinguishable from zero. Finally, putting these results together in column 1, there is no evidence that Scheduled Areas affect the extensive margin of program implementation the *total* amount of work remains the same across Scheduled and non-Scheduled Areas, as the point estimates on outcomes are small, ranging from 1% on workdays to 0% on jobcards.[15]

6.2 Intersecting Identities: Decomposing Gender Effects

Do marginalized women comparatively benefit from Scheduled Areas? While "one aim of [NREGS] was to encourage women from poor households to under take work" (Jenkins and Manor, 2017, p. 174), checking this for NREGS is difficult as the data do not decompose

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[5]In Appendix D we show that our results are robust to a number of tests, including various functional forms, bandwidths, transformations of outcomes, and controls for the number of matched villages. Appendix F shows there is no evidence for two alternative explanations: that discrepancies in reporting, and that differences in reliance on centralized government between Scheduled and non-Scheduled Areas account for identified effects.

Table 2: **The Effect of Scheduled Areas on NREGS (10 km RD)**

	(1) Total	(2) STs	(3) SCs	(4) Non SCs/STs
Panel A: Log Jobcards				
Scheduled Areas	0.000	0.207***	0.038	0.098***
	(0.014)	(0.025)	(0.031)	(0.024)
Control Mean (Unlogged)	652.979	259.373	92.768	300.838
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel B: Log Households Worked				
Scheduled Areas	0.009	0.203***	0.017	0.086***
	(0.023)	(0.029)	(0.032)	(0.029)
Control Mean (Unlogged)	220.579	98.339	29.806	92.435
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel C: Log Workdays				
Scheduled Areas	0.010	0.241***	0.009	0.125***
	(0.035)	(0.046)	(0.053)	(0.045)
Control Mean (Unlogged)	9748.164	4306.585	1259.986	4181.593
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. Standard errors clustered by GP.

outcomes by both identity *and* gender.[16]

We make some progress by analyzing the effects of Scheduled Areas on employment prospects by gender and types of workers in the 2011 Census. These data provide employment statistics across two categories defined by the Census: "main workers," who were employed more than 183 days, or about 6 months, in the 12 months preceding the Census, and "marginal workers," who were employed for less than 183 days.

If a large portion of individuals are solely employed through NREGS, we should expect primary gains among marginal workers due to the 100 NREGS workday maximum per household. However, individuals might also supplement their NREGS work which would make it reasonable to expect effects among main workers. Indeed, prior work shows that

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[6]Nevertheless, Appendix Table A20 presents results by gender for workdays under NREGS (the only outcome for which gender decomposed data are available) and shows that there are no key differences at least at the extensive margin across gender.

NREGS has positive effects on private sector employment by raising the rural reservation wage (Muralidharan, Niehaus and Sukhtankar, 2017). In addition, 70 percent of NREGS work occurs during the lean season, additively bringing new labor into the market (Jenkins and Manor, 2017, p. 170).

We observe three results in Table 3. First, consistent with the extensive margin results on NREGS, there is no effect on average employment. Second, women experience about 2.5 percent gains in employment, while men are worse off by 1.9 percent. Third, relative to the other gender, the primarily beneficiaries of Scheduled Areas are 'marginal' women workers, whose employment increases by 3%, while the primary losers are 'main' men workers.[17]

Table 3: **Effects on Employment (10 km RD, Census 2011)**

	(1) Total	(2) Women	(3) Men
Panel A: Log # Overall Workers			
Scheduled Areas	-0.007	0.025*	-0.019**
	(0.010)	(0.013)	(0.010)
Control Mean (Unlogged)	552.0	231.9	319.9
# GPs	13277	13277	13277
# Villages	32522	32522	32522
H_0: $\gamma(2)$ - $\gamma(3)$ 0			$p < 0.000$
Panel B: Log # Main Workers (> 183 days)			
Scheduled Areas	-0.018	0.002	-0.021
	(0.018)	(0.020)	(0.017)
Control Mean (Unlogged)	377.6	128.0	249.5
# GPs	13277	13277	13277
# Villages	32522	32522	32522
H_0: $\gamma(2)$ - $\gamma(3)$ 0			p 0.104
Panel C: Log # Marginal Workers (< 183 days)			
Scheduled Areas	0.001	0.030	-0.011
	(0.022)	(0.022)	(0.021)
Control Mean (Unlogged)	173.9	103.9	70.0
# GPs	13277	13277	13277
# Villages	32522	32522	32522
H_0: $\gamma(2)$ - $\gamma(3)$ 0			$p < 0.001$

Notes: $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. Standard errors clustered by GP. Additional controls include outcome baseline measures from the 2001 Census.

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[7]Appendix E.4 shows several robustness exercises.

How do we interpret these results? Control means show that women are more likely to be employed as marginal workers than are men, suggesting that they work fewer days of the year on average. The treatments effects indicate that it may be these types of underemployed workers who benefit the most in Scheduled Areas, suggesting the possibility that ST women benefit more from the increase in average ST workdays.

6.3   Effects on the Rural Roads Program (PMGSY)

Are there implications of instituting electoral quotas beyond the effects we observe on NREGS and employment in general? Finding evidence of broader impacts will improve our confidence that the institution of Scheduled Areas improved the lives of poor communities. It would also help allay the concern that changes in NREGS come at the cost of changes in other programs.[18]

We first consider impacts on the PMGSY roads program. Column 1 of Table 4 shows that villages in Scheduled Areas are about three percentage points more likely to have completed roads through the program using our geo RD specification.

An important feature of the PMGSY data is the time variation in road construction, which, along with state-by-state variation in the implementation of PESA elections, affords us the opportunity to study the impacts of Scheduled Areas on roads before and after the introduction of electoral quotas. Using village, year, and year since PESA elections fixed effects, a difference-in-differences strategy allows us to consider within-village changes in PMGSY implementation over time. We find that post-PESA elections, Scheduled Areas villages in our geo RD sample (column 2) are 1 percentage point more likely to have a PMGSY road, an effect of about 20%. This percentage increases to nearly 5% (an increase of

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[8]For example, quota politicians may prefer NREGS relative to other priorities because NREGS allows them to perpetuate patronage through handout of state resources (Marcesse, 2017).

Table 4: **The Effect of Scheduled Areas on Rural Roads (PMGSY)**

		Road	1	
Outcome:				
Model:	Geo RD	Diff-in-Diff	Diff-in-Diff	
Sample:	10km	10km	Full	
	(1)	(2)	(3)	
Scheduled Areas	0.029***			
	(0.004)			
Sch Areas × Post PESA Election		0.010***	0.048***	
		(0.003)	(0.002)	
Non-Scheduled Mean	0.127	0.051	0.056	
# GPs	13338	13338	74120	
# Villages	32641	32641	217144	
# Observations	32641	456974	3040016	
Geo RD Controls	Yes	-	-	
Village FE	No	Yes	Yes	
Year FE	No	Yes	Yes	
Year of PESA FE	No	Yes	Yes	

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered by GP.

over 80%) using the full dataset of villages. Figure 3 additionally shows that road sanctioning increased in Scheduled Areas soon after the introduction of elections but not before. Effects on the completion of roads followed after a few years.

6.4   Impacts on Public Goods

Guided by the literature on the responsibilities of local governments in India detailed in Section 3.4, we also evaluate the effect of Scheduled Areas more broadly on public goods using data from the 2011 Census. We construct six mean indices that take the average of binary indicators on the presence of particular public goods in a village, such as whether there is a gravel road. These indices measure the average provision of roads, water, irrigation, electricity, communication, and education. Similarly, an overall public goods index averages all individual public goods indicator variables.

Overall, the results presented in Figure 4 show that public goods provision in Scheduled Areas improved by 2011, particularly in terms of road, water, communication, and education

Figure 3: The Effect of the Introduction of PESA Election on PMGSY Roads
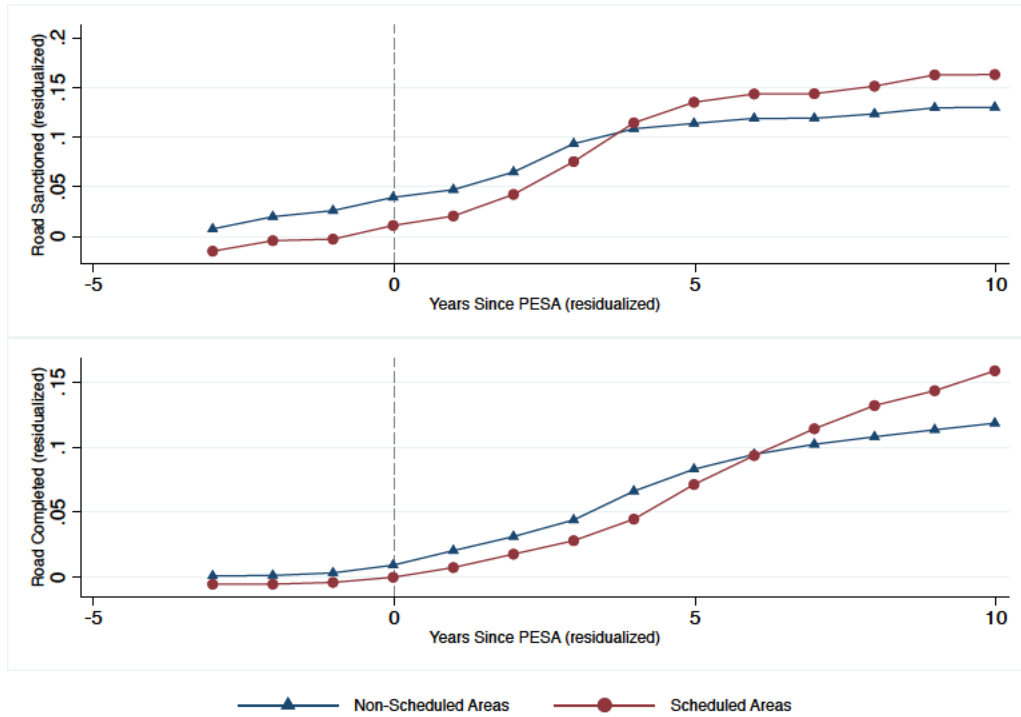
Notes: This figure plots binned means of PMGSY roads by Scheduled Area status on a dataset of all villages that is residualized for village fixed effects.

access. The results on roads are consistent with our earlier results: we see positive treatment effects on the most local kinds of roads, gravel roads, projects that are targeted specifically by the NREGS program. We also see improved access to all-weather roads which is consistent with the PMGSY results.[19]

6.5 Discussion: Bringing the Results Together

In light of these results, we return to the competing hypotheses suggested by the literature that we summarized in Table 1. First, we consider the NREGS results which allow us to study distribution of resources across identity categories. We do not find any evidence for the **Solidarity Hypothesis**: increased descriptive representation for one minority group,

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[9]Appendix E.5 presents several robustness exercises.

Figure 4: **The Effect of Scheduled Areas on Public Goods (Census 2011).**
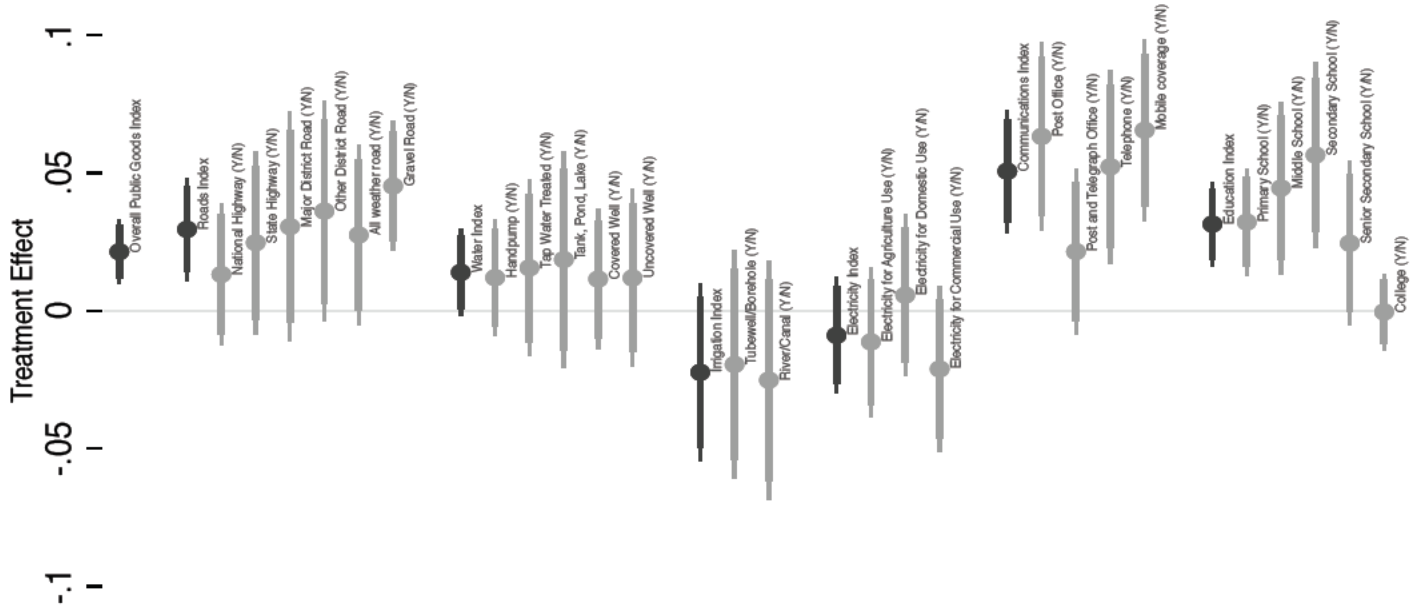
STs, does not appear to *improve* outcomes for a non-targeted minority group, SCs. We find support for the **Crowding Out Hypothesis** to the extent that there is negative substitution away from the residual non-SC/ST group, which is consistent with the aims of programs designed to redistribute economic and political power. Importantly, there is no evidence for outcomes worsening for SCs or at the extensive margin.

The NREGS results are also consistent with the weak version of the **Performance Hypothesis**. At the extensive margin, we find that NREGS implementation is no worse in Scheduled as compared with non-Scheduled Areas. Evidence on overall employment, PMGSY, and public goods outcomes from the 2011 Census show improvements across the board, results consistent with the strong version of the performance hypothesis.

How might we square these contrasting results? One interpretation consistent with results and the literature (for example, Duflo and Chattopadhyay (2004)) is that marginalized politicians empowered under Scheduled Areas invest more in policies prioritized by their communities. We observe employment gains for the most vulnerable: women marginal workers. Similarly, Scheduled Areas have positive effects on the PMGSY program that aimed to grant

market access to poor rural communities, and on public goods outcomes that are most important for marginalized groups. In sum, the broader effects we identify may reflect greater investment in the welfare of marginalized communities. In that sense, the broader results are consistent with NREGS findings that Scheduled Areas improve the welfare of ST.

Importantly, the results run contrary to the expectations of affirmative action skeptics: while we do not find that politicians from underrepresented groups outperform other politicians on NREGS, they certainly do not perform worse, and they perform better on a program (PMGSY) where explicit targeting of benefits to marginalized communities is less possible. In addition, gains for the targeted group under NREGS do not come at the expense of similarly marginalized populations.

7 Investigating the Electoral Mechanism

To what extent does an electoral mechanism explain how the Scheduled Areas have improved development outcomes for ST? We present four pieces of evidence in support of an electoral mechanism.

7.1 Scheduled Areas Prior to PESA

Prior to the implementation of electoral quotas, Scheduled Areas and non-Scheduled Areas looked very similar as our geographic RD analysis of the 2001 Census shows in Section 5.2. This analysis mirrors a critical 1995 report by the Indian Parliament-appointed Bhuria Commission, which found little to no devolution of governance and authority to tribal bodies in Scheduled Areas, and argued that tribal populations should enjoy greater self-governance and less governmental administrative interference.

> ... since planned development has been an article of faith with us, it has to be ensured that implementation of the policies and programmes drawn up in tribal interest are implemented in tribal interest. Since, by and large, the politico-

bureaucratic apparatus has failed in its endeavour, powers should be devolved on the people so that they can formulate programmes which suit them and implement them for their own benefits.

Policies following from these findings were made into law via PESA, passed in 1996 and going into effect with state panchayat elections from 2000. In this way, PESA gave the Scheduled Areas teeth that they had theretofore lacked.

7.2 Targeted Minority Electoral Influence

Table 5: **Treatment Effects by ST Plurality versus Minority (10 km RD)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Panel A: Jobcards				
Scheduled Areas	0.012	0.037	-0.052	-0.068*
	(0.017)	(0.030)	(0.044)	(0.035)
ST Minority	0.040*	0.140***	-0.139***	-0.100***
	(0.021)	(0.038)	(0.042)	(0.034)
Scheduled × ST Minority	-0.028	0.383***	0.034	-0.068*
	(0.022)	(0.044)	(0.049)	(0.039)
Control Mean (Unlogged)	652.979	259.373	92.768	300.838
Panel B: Worked HH				
Scheduled Areas	0.015	0.065*	0.004	-0.058
	(0.027)	(0.036)	(0.043)	(0.039)
ST Minority	-0.009	0.055	-0.141***	-0.177***
	(0.037)	(0.044)	(0.041)	(0.042)
Scheduled × ST Minority	-0.013	0.313***	-0.045	-0.062
	(0.037)	(0.048)	(0.047)	(0.045)
Control Mean (Unlogged)	220.579	98.339	29.806	92.435
Panel C: Workdays				
Scheduled Areas	0.023	0.059	0.055	-0.071
	(0.043)	(0.053)	(0.072)	(0.060)
ST Minority	-0.010	0.178**	-0.255***	-0.265***
	(0.061)	(0.071)	(0.073)	(0.068)
Scheduled × ST Minority	-0.074	0.409***	-0.102	-0.120*
	(0.059)	(0.078)	(0.081)	(0.072)
Control Mean (Unlogged)	9748.164	4306.585	1259.986	4181.593
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. Standard errors clustered by GP.

Prior work suggests that quota effects are largest where the targeted minority group constitutes a large share of the population (Chin and Prakash, 2011; Jensenius, 2015; Pande, 2003; Das, Mukhopadhyay and Saroy, 2017). For instance, Jensenius (2015) reports that some SC politicians want to divert funds to SC constituents but do not do so "because they are scared of being branded as 'too SC''' (p.203) by the majority of voters who are non-SC and on whose votes they depend. Alternatively, while it is true that STs retain the most power when they have both a high share of population and electoral reservations, theoretically, the *introduction* of quotas should have the greatest *marginal* impact in places where STs did not possess as much electoral strength initially. To test this, we create an indicator variable for whether ST are a non-plurality:

$$ST\ Minority_v \quad ST\ Plurality_v \quad \mathbb{1} \cdot (ST\ pop_v < max(SC\ pop_v, non\ SC/ST\ pop_v))$$

Table 5 presents heterogeneous effects with our standard RD specification. There are two findings. First, for each of the three main outcomes of interest, we find that Scheduled Areas have a larger positive effect for ST in places where ST comprised an electoral minority prior to the implementation of PESA. The result suggests that the electoral quota may be most effective at improving the lives of groups that see the greatest increase in their electoral strength due to the quota. Second, as before, the negative spillover on the residual non-SC/ST category is also more pronounced in these areas.

7.3   Quota Overlap

A certain proportion of State Assembly seats across India are reserved for minorities including ST and SC based on population (Jensenius, 2012). Although the higher-level quotas are not randomly assigned, we can use them to investigate quota overlap at different levels of government. On the one hand, multiple quota politicians should reinforce the effect of political quotas by improving potential coordination between politicians who share an

identity. On the other hand, there could exist some diminishing returns to quota politician effort because of credit claiming difficulties and free riding problems (Gulzar and Pasquale, 2017).

While our main results are robust to controlling for the incidence of Assembly Constituency level ST reservation (see Appendix Table A31), in Table 6 we interact these higher level reservations in the latest election before 2013 with the Scheduled Areas treatment indicator to study if overlapping Assembly Constituency reservations moderate effects on program implementation. The results show that Scheduled Areas reservations and Assembly Constituency reservations for ST, separately, improve NREGS program implementation tremendously for ST. However, when the two quotas overlap, the overall implementation of the program is less than the separate parts, suggesting that there exist some ceiling effects.[20] Overall, the results are consistent with program implementation varying with political institutions.

7.4 Local Elections in Scheduled Areas

Consistent with the historical discussion above, patterns in the data also show that the introduction of PESA is an important driver in differences between Scheduled Areas and non-Scheduled Areas. We already presented corroborating evidence of the importance of PESA's introduction for the PMGSY program in Figure 3. In contrast, because we only observe NREGS outcomes at a single point in time, we lack any within-state variation in PESA introduction when considering these outcomes. With this limitation in mind, in Appendix Table A28 we interact the Scheduled Areas indicator with the number of elections between 2000 and 2012 that have taken place in a state under PESA: either one, two, or three. We find that the main results hold up but the magnitude decreases over time.

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[20]Interestingly, we find that when the Assembly Constituency reservation is for SC, there are no negative quota overlap effects for ST (see Appendix Table A32).

Table 6: **Additional Quota in Assembly Constituency (10 km RD)**

	(1) Total	(2) ST	(3) SC	(4) Non-SC/ST
Panel A: Job Cards				
Scheduled Areas	-0.012	0.405***	-0.089*	-0.128***
	(0.019)	(0.041)	(0.046)	(0.031)
AC Reserved, ST	0.200***	0.876***	-0.109**	-0.140***
	(0.017)	(0.035)	(0.044)	(0.031)
Scheduled X AC Reserved, ST	-0.015	-0.482***	0.103*	0.074
	(0.027)	(0.051)	(0.062)	(0.046)
Control Mean (Unlogged)	652.979	259.373	92.768	300.838
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel B: Households Worked				
Scheduled Areas	0.019	0.388***	-0.100**	-0.111***
	(0.033)	(0.049)	(0.048)	(0.042)
AC Reserved, ST	0.454***	0.914***	0.012	0.053
	(0.030)	(0.040)	(0.044)	(0.041)
Scheduled X AC Reserved, ST	-0.096**	-0.465***	0.137**	0.033
	(0.044)	(0.060)	(0.063)	(0.057)
Control Mean (Unlogged)	220.579	98.339	29.806	92.435
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel C: Workdays				
Scheduled Areas	-0.054	0.419***	-0.165**	-0.196***
	(0.051)	(0.076)	(0.078)	(0.060)
AC Reserved, ST	0.595***	1.289***	-0.011	0.092
	(0.047)	(0.061)	(0.073)	(0.061)
Scheduled X AC Reserved, ST	-0.029	-0.520***	0.292***	0.101
	(0.068)	(0.093)	(0.105)	(0.085)
Control Mean (Unlogged)	9748.164	4306.585	1259.986	4181.593
# Blocks	626	626	626	626
# Villages	32641	32641	32641	32641

Notes: $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. Standard errors clustered by GP.

This may be consistent with quotas having the greatest marginal impact for the targeted minority in the first election, where quotas constitute a shock to political representation. In subsequent elections, as members of the targeted minority "catch up" to other groups, and as quota politicians learn the intricacies of the position, quota politicians may distribute more benefits to other groups and deliver overall gains.

8 Conclusion

Policymakers often treat economic and political efforts in isolation. We show that political affirmative action and development programs may serve as complementary levers to deliver better outcomes for marginalized communities, at no cost to other minorities, nor to society overall.

Our empirical setting is political affirmative action in India, where Scheduled Areas, as well as similar reservations more generally, are hotly debated and politically divisive. Protests and riots have broken out for a myriad of related affirmative action issues — out of fear of reductions in protections for SC and ST throughout India, in anticipation of the implementation of elections in Scheduled Areas, by groups agitating for inclusion in identity categories targeted by quotas, and in an effort to extend Scheduled Areas into new jurisdictions (AlJazeera, 2018; Singh, 2018; ETBureau, 2018; Iyengar, 2015). Despite their importance, scale, and salience, Scheduled Areas remain understudied in political science and related disciplines. To our knowledge, this paper provides the first systematic evaluation of this institution.

We propose a novel theoretical framework comprising *solidarity*, *crowding-out*, and *performance* hypotheses to understand the systematic effects of political affirmative action across groups. To test these, we build a new large-scale dataset combining administrative data on the largest employment program in the world, a rural roads program, as well as public goods from the Indian Census. We find that quotas deliver no worse outcomes overall and that gains for targeted minorities come at the cost of the relatively privileged, rather than other historically disadvantaged groups. More broadly, improvements in other pro-poor policies, including a rural roads program and general public goods, further attest to the complementary impacts of political affirmative action and pro-poor economic development.

Effects appear to operate through an electoral mechanism. They appear strongly (1) after the introduction of local elections with reservations for minorities, (2) where the quota is theoretically most likely to have the largest marginal impact — that is — in places where

the targeted minority group was previously least powerful), and (3) where there is no overlap with other quotas targeting the same minority.

What are the implications of our results on debates surrounding affirmative action? Skeptics routinely argue that open competition in the political sphere brings the best politicians to the fore. However, our results show that quota politicians perform no worse than status-quo politicians. This suggests that status-quo institutions may prevent equally qualified individuals from marginalized communities from running for office and more effectively representing their communities.

What are the long-term consequences of electoral affirmative action? Our study measures impacts up to 12 years after implementation of the institution and finds large positive effects for the targeted minority. One concern for the longer term is that fixed political affirmative action may develop its own unequal political structures by simply replacing which identity group is on top. Efforts that helpfully redistribute political power initially could create long-run political monopolies. We consider this to be an important open question to be explored in the future.

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Online Appendix (Not for Publication)

A   Background

A.1   Authors' Summary of Extant Work

Table A1: Authors' Summary of Past Work

Pape	Q o a Ta ge s	Q o a Leve	E ec s o Ta ge ed M o es	Sp ove E ec s	Ce a O co es	# Obse va o s
D g a d N eka (20 3)	SC/ST	V age	No	N/A	Repo ed pa c pa o we a e p og a s	5 2 g a pa c aya s (GPs)
Je se s (20 5)	SC	S a e	No	No e	L e acy e p oy e v age a e es	896 s a e co s e ces
Pa de (2003)	SC/ST	S a e	Yes	Nega ve	Ove a spe d g spe d g o ed ca o we a e	5 9 s a e-yea
C a d P akas (20)	SC/ST	S a e	O y ST	Pos ve	Pove y eas es	627 s a e-yea
Pa asa a y Rao a d Pa a swa y (20 7)	Wo e	V age	Yes	Nega ve	Pa c pa o co ve sa o s a e espo s ve ess	50 v ages
Bes ey Pa de a d Rao (2007)	SC/ST	V age	Yes	N/A	Gove e a s e s o o se o ds	20 GPs (527 v ages)
D flo a d C a opad yay (2004)	Wo e SC/ST	V age	Yes	N/A	Co s e po cy p e e e ces gov spe d g	265 GPs
Ba d a Mook e ee a d To ado (20 0)	SC/ST	V age	Yes	Pos ve	Ho se o d be e s wa e e p oy e e c	57 GPs (89 v ages)
Pa a swa y a d K s a (20 2)	SC	V age	Yes	Pos ve	Spe d g	80 GPs (225 v ages)
B av a (2009)	Wo e	S a e	Yes	N/A	E ec o a o co es	8 e ec o wa ds
Bea a e a (20 0)	Wo e	V age	Yes	No e	I ves e d k g wa e	97 v ages
Bes ey Pa de a d Rao (2005)	SC	V age	Yes	N/A	Ho se o d be e ca ys a s	522 v ages
C a c a d (20 4)	SC	V age	Yes	N/A	Soc a a des o s s e eo ypes	64 GPs
D g (20 0)	SC/ST	V age	Yes	N/A	Po ca a des a d p e e e ces	200 GPs

A.2 Role of Local Institutions in NREGS Implementation

The Panchayati Raj Institutions have a significant role to play in the implementation of a number of local development activities and program as shown in Figure A1. The degree and nature of their effort therefore is an important contribution to this significant variation across even local areas. See Figures A1 and A2 for details of the role of local government institutions in NREGS delivery.

Figure A1 shows that Panchayati Raj Institutions are responsible for planning, beneficiary selection, implementation, and monitoring and evaluation aspects of NREGS implementation. Similarly, Figure A1 shows that the Gram Panchayat is an important node for NREGS implementation that, nevertheless, rests in a wider networks of important agents.

Table 2: PRI Roles in Flagship Programmes

Sl.No.	Scheme	Planning	Beneficiary Selection	Implementation	Monitoring and Evaluation
1.	MGNREGS	✓	✓	✓	✓
2.	Backward Regional Grant Fund	✓		✓	✓
3.	Public Distribution System		✓		✓
4.	Shelter		✓	✓	
5.	Education		✓	✓	✓
6.	Health	✓		✓	✓
7.	Sanitation	✓	✓	✓	✓
8.	Electricity				✓
9.	Drinking Water	✓	✓	✓	✓
Source: India Rural Development Report 2012-13 by IDFC					

Figure A1: **PRI Duties (source: (ILO, 2015))**
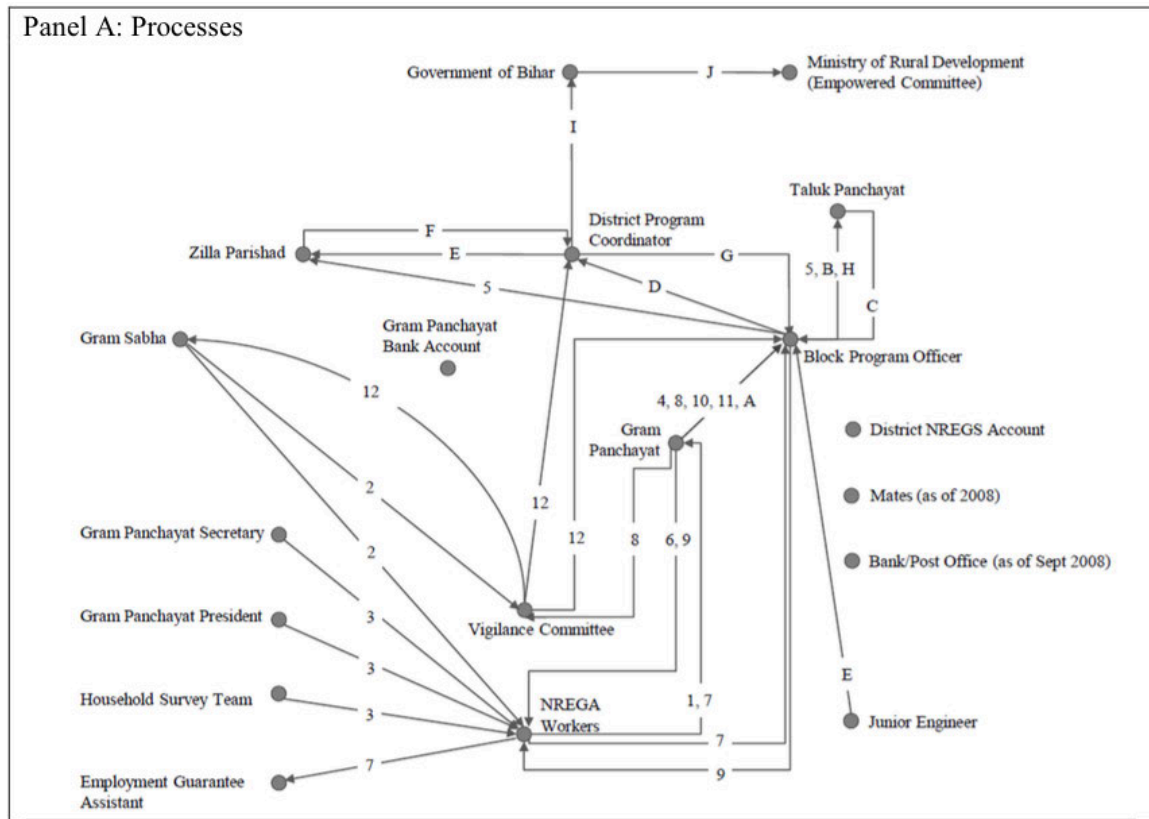
Panel A: Processes

Panel A: Processes

Implementation process

1. Adult household members apply for registration.
2. Gram sabha verifies and mobilizes applications for registration and elects the members of the Vigilance and Monitoring Committee.
3. A household survey is performed for the identification of households that are willing to register for employment cards.
4. The gram panchayat sends a copy of the registration to the block program officer.
5. The block program officer reports to the taluk and zilla parishad.
6. The gram panchayat issues employment cards to registered households.
7. Adult household members apply for work at the gram panchayat or present themselves to the employment guarantee assistant (EGA). The EGA records the application in the employment register. The employment application via the block program officer is a "fallback" option only.
8. The gram panchayat informs (1) the block program officer about new work applications and (2) the Vigilance and Monitoring Committee about estimates regarding the work, time frame, and quality parameters.
9. The gram panchayat and block program officer assign employment.
10. The gram panchayat informs the block program officer about the employment allotments made.
11. The gram panchayat informs the block program officer about the start of work, and the block program officer issues registered Muster Rolls.
12. Upon completion of the work, the Vigilance and Monitoring Committee prepares the report and submits it to the gram sabha, the block program officer, and the district program coordinator.

Planning process

A. The gram panchayat forwards the development plan and priorities to the block program officer.
B. The block program officer scrutinizes and approves the gram panchayat–specific proposals and sends the consolidated gram panchayat proposals to the taluk panchayat.
C. The taluk panchayat sends the approval of the shelf of gram panchayat proposals.
D. The block program officer forwards the shelf of gram panchayat proposals to the district program coordinator.
E. The district program coordinator consolidates the block plans and prepares the labor budget. The junior engineer assists the block program officer and develops and approves technical estimates. These are sent to the zilla parishad, which approves the block-wise shelf of projects and the labor budget.
F. The zilla parishad informs the district program coordinator about the approval.
G. The district program coordinator reports the approved projects to the block program officer.
H. The block program officer forwards a copy of the block plan to the gram panchayats.
I. The district program coordinator forwards the labor budget to the Government of Bihar.
J. The Government of Bihar forwards the labor budget to the Ministry of Rural Development.

Figure A2: NREGS Implementation (source: Raabe, Sekher and Schiffer (2010))

A.3 Background on Political Quotas in India

Political quotas restrict the representation or leadership of government bodies. The government body may be a local or national administrative body, an elected local council, a state parliament or a national-level parliament.[21] While quotas most commonly target citizens (e.g. for positions as bureaucrats) or leadership positions (in councils or parliaments), quotas may also target particular geographic areas (e.g. with provisions for local autonomy).

Even prior to Indian Independence, the British government implemented quotas for individuals from particular ethnic identity categories. The Morley-Minto reforms in 1909 established separate electorates for Muslims. In 1919, the Mont-Ford reforms tied this 'quota' inversely to the proportion of Muslims in a given province (Rudolph and Rudolph, 2010, 560-561). Beyond political quotas for the national parliament, state parliaments, local government, Fifth Schedule Areas, several other types of political quotas exist in India. Broadly similar to the Fifth Schedule, the Indian Constitution's Sixth Schedule allows for the creation of Autonomous Councils. These councils for Scheduled Tribe communities, typically at the district or village levels, provide some legislative, administrative and judicial powers in areas now and formerly contained within the state of Assam (Chaudhury, 2005).[22]

Another example of a territorial quota is the delimitation of electoral boundaries. In both the national (*Lok Sabha*) and state (*Vidhan Sabha*) parliaments, the shape and number

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[2] While not strictly meeting the definition of a type of government policy, political parties may also implement quotas. See for instance Mala Htun who analyzes why quotas for women are more likely to be utilized in parties but ethnic quotas more likely to be designed for legislatures (Htun, 2004).

[22] Reforms under the Sixth Schedule, also targeting the welfare of ST, according to our research, have been less consistent over time and space. Further we have been thus far unable to gather systematic data on the Autonomous District Councils at the heart of the Sixth Schedule, though we do believe this an area ripe for systematic research.

of electoral constituencies in a given area are determined by the size of the local population. Electoral redistricting was completed following every decennial census in 1952, 1963, 1973, and after a nearly three-decade delay, again in 2002 (Iyer and Reddy, 2013).[23] Even the linguistic reorganization of states, based on the States Reorganisation Act of 1956, can be considered a quota that generated state boundaries based on the relative linguistic homogeneity of a particular area (Tillin, 2013, Chapter 2).

For ordinary individuals, quotas influence individual's access to state education, government employment, and even rights to land. Reservations set aside places for individuals from the Scheduled Castes, Scheduled Tribes, women, in some states for individuals from Other Backward Classes, and even some religious groups (Corbridge, 2000; Galanter, 1984). Even land rights can be considered a type of quota. In Jharkhand for instance, customary laws such as the Chotanagpur Tenancy Act and the Santhal Parganas Tenancy Act both restrict land sales to individuals who are not associated with Scheduled Tribes (Sundar, 2005; Upadhya, 2009).

A.4   Background on Tribes in India

Early accounts of 'tribal' populations listed these groups as savages: animistic, violent, brutal, barbaric, wild. The *Fifth Report of the House of Commons* in 1812 described the inhabitants of Chotanagpur as a 'savage race, differing extremely in appearance, religion. British officials constructed Chotanagpur's 'tribes' through the lenses of 18th and 19th C. Victorian

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[23]In 1977 delimitation was halted following complaints that delimitation according to population size incentivized certain population control policies. New legislation froze electoral boundaries in 1977 until delimitation was once again completed in 2002 Iyer and Reddy (2013, 5-6).

anthropology of racial types socio-cultural evolution (Damodaran, 2011, 58-59).[24] These administrator's conceptualizations, built not only on travelers' reports and racial theory but also their readings of sacred Hindu texts informed these constructions (Radhakrishna, 2011, 45-46).

British observers also made reference to the relative seclusion of Chotanagpur communities with references to the jungle, forest, inhospitable forest, wilderness and so-called 'primitive places.' S.C Roy wrote that Mundas settled in "primeval forests ... unmolested in their isolated mountain fastness ... walled off from the outside walls by chains of wooded hills" (1970: 60-61). As an example, anthropologist Verrier Elwin just after the end of the 19th C. proposed a system of national parks in order to preserve cultures of the Munda, Ho, Oraon and so on (Radhakrishna, 2011, 53).[25] Perceptions of Chotanagpur's 'tribes' roughly shifted from at first a wild savage to a 'noble' savage, and eventually to indigenous groups that needed to be protected from Aryan (then Hindu) invaders. In this way the British colonial government saw itself as "protectors of wild yet innocent tribals against rapacious outsiders" (Gupta, 2011a, 97). This shift followed the growth of 19th C. humanitarianism in Europe and the growth of missionaries in Chotanagpur.

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[24]British officials such as Colonel Tickell and Ricketts in the 1840s-1850s, administrators W.W. Hunter and E. Dalton in late 19th C. and anthropologists S.C. Roy and Elwin Verrier around 1910, had all written of distinct Munda, Ho and Oraon communities. See (Damodaran, 2011; Gupta, 2011a,b; Galanter, 1984; Guha, 1996; Radhakrishna, 2011) for more on how British officials documented 'tribal' populations.

[25]Despite these accounts 19th C. reports of British officials and anthropologists make clear that communities in Singhbhum were not isolated but regularly interacted with groups in northern Jharkhand (Corbridge, Jewitt and Kumar, 2004).

A.5   Scheduled Tribes

India's 'tribal' identity category was first codified, with corresponding separate adminis-trative areas specified, during the British Colonial period. Scholars have identified these 'tribal' groups (or *adivasi*) by (a) their descent from particular lineages (Sundar, 2009), (b) pre-colonial systems of administration, and/or (c) well-defined land arrangements and rights (Gupta, 2011*a,b*). Despite regular mention of these factors, scholars agree that there has been little clear definition or criteria as to what constitutes a 'tribe' (Béteille, 1974, 1986; Dhebar, 1962; Corbridge, Jewitt and Kumar, 2004; Corbridge, 2002; Galanter, 1984).

Both prior to and following Indian Independence, leaders of the country have failed to systematically define what constitutes a 'tribe' (or 'Scheduled Tribe'). Definitions that have been given are vague, imprecise, and unclear   suggesting that lists of 'tribes' or ST were often reflected the political convenience of whomever administered the region. Despite numerous studies by Colonial administrator-anthropologist and close attention paid to the so-called 'tribes' of Chotanagpur, relatively little effort was given to writing rules for distinguishing a tribe or tribal from the rest of the population.[26] British authorities first provided a list of 'Aboriginal Tribes' and 'Semi-Hinduised Aboriginal Tribes' in the Census of 1872 (Corbridge, 2002, 64). Census Commissioner H.H. Risley described a tribe as follows:

> A tribe as I find in India is a collection of families or groups of families bearing a
> common name which as a rule does not denote any specific occupation; generally
> claiming common descent from a mythical or historical ancestor and occasionally
> from an animal, but in some parts of the country held together by the obligations
> of blood-feud than by the tradition of kinship; usually speaking the same language

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[26]Chotanagpur is a region of Eastern India covering parts of the states of Jharkhand, Chhattisgarh, Odisha and West Bengal   a region with some of the largest tribal populations in India and a region geographically proximate to the Colonial capital of Calcutta (today Kolkata).

and occupying, professing, or claiming to occupy a definite tract of country. A tribe is not necessarily endogamous. (H.H. (1903, 514), as quoted in Pati (2011, 4).

In 1911, The Imperial Gazetteer of India provided a striking similar definition: "A collection of families bearing a common name, speaking a common dialect, occupying or professing to occupy a common territory and is not usually endogamous though originally it might have been so" (Nazer, 2004, 1). These definitions provide tremendous leeway for colonial officers to assign groups however they like. When J.H. Hutton, Indian Census Commissioner in 1931, sought to provide a list of 'tribes' he aimed to utilize the basis of "soul-substance" (Corbridge, Jewitt and Kumar, 2004, 30).

Despite the lack of clear criteria identifying so-called Tribals, special institutions were put in place for their protection with the Scheduled Districts Act of 1874. This territorial designation led to legislation with the aim of protecting tribals rights to their land, for instance through the Chotanagpur Tenancy Act of 1908. Upon Indian Independence from the British, the new constitution continued these policies of special administration in what were to become renamed "Scheduled Areas."[27]

In 1951 the First Report of the Commissioner for Scheduled Castes and Scheduled Tribes admitted that no precise method for identifying Scheduled Tribes had been created to date (Report 1951: 11). The report went on to note four characteristics identify a tribal: "tribal origin, primitive way of life, remote habitation, and general backwardness in all respects" (Report 1951: 109-111). Subsequent Commissions focused on Scheduled Castes and Scheduled Tribes reinforced the idea that little new information, methods of categorization or

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[27]Under the Fifth Schedule of the Indian Constitution (1947), Scheduled Areas were created to allow customary practices and autonomy of Scheduled Tribes in these regions. By order of the President, a list of Scheduled Tribes and a list of Scheduled Areas was produced in 1950.

codification guided what constituted or defined either Scheduled Tribes or Scheduled Areas. Sociologist Andre Beteille has written, "lists of Indian tribes were in fact drawn up, with or without benefit of clear and consistent definitions" (Béteille, 1986, 299), and, "it cannot be too strongly emphasized that the list reflects the demands more of administrative and political circumstance than of academic or logical rigour" (Béteille, 1974, 62).

Indian Government officials even admitted the lack of definitions. According to the Dhebar Commission in 1961, "the term tribe is nowhere defined in the Constitution and in fact there is no satisfactory definition anywhere" (1962: 1). The Lokur Committee wrote when revising the list of Scheduled Tribes in 1965: "I have looked for indications of primitive traits, distinctive culture, geographic isolation, shyness of contact with the community at large and backwardness" (Galanter, 1984, 152).[28]

According to the Indian Constitution, Scheduled Areas are to define in those areas with a large fraction of the population belonging to a Scheduled Tribe. But this mapping of Scheduled Tribes to Scheduled Areas is equally unclear. Officially, according to the Fifth Schedule of the Constitution the President has the right to Schedule or De-schedule Areas and does so in consultation with Governors of Indian states. The Dhebar Commission of 1962 proposed a Scheduled Area be identified according to the following four, relatively vague, criteria.[29]

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[28]Galanter notes this rough definition was reused in 1976: "this language is utilized almost verbatim by the Home Minister more than 10 years later in the debate about revision of the list" (1984: 152, fn. 143).

[29]In the mid-1970s the Twenty-Fourth Report of the Commissioner for Scheduled Castes and Scheduled Tribes proposed a clearer rule that areas with more than fifty-percent Scheduled Tribe population should be Scheduled Areas (Commissioner for Scheduled Castes and Scheduled Tribes, N.d., 117). But as we will show below, no such 50% threshold exists in terms of defining Scheduled Areas.

1. Preponderance of tribals in the population

2. Compact and reasonable size

3. Under-developed nature of the area

4. Marked disparity in economic standards of the people

While academic research and popular accounts discussing the Scheduled Areas have focused on political quotas, Scheduled Areas and PESA have several additional features intended to benefit ST. These include the establishment of state-level Tribes Advisory Councils intended to advocate on behalf of ST, restrictions over the sale of land, in an effort to prevent alienation of land by ST, as well as, within villages, reinforcing a given village's *gram sabha* (a sub-*gram panchayat* body), as an important unit of local decision-making.

Appendix Figure A3 below shows while the probability that an area is demarcated as a Scheduled Area is rising in the share of the ST population, there is no discontinuous jump in Scheduled Areas status where Scheduled Tribes constitute more than 50% of a village's total population. We see a similar continuity in the probability if we conduct an RD on whether the village has an ST plurality.

A.6 Case Study: The State of Jharkhand

A.6.1 Who is an ST?

After Independence the Government of Bihar made a clear break from historical laws giving uniform but distinct rights to the whole of Jharkhand. By means of the Scheduled Areas Order 1950 and the Scheduled Tribes Order 1951, the Government of Bihar effectively halved the amount of territory defined as Scheduled Areas and substantially shrunk the number of groups classified as ST. While the British Census of Chotanagpur in 1872 listed 31 aboriginal and 31 semi-aboriginal groups, the Scheduled Tribes Order of 1951 listed 30 such ST communities. According to Corbridge, according to the Census of 1951, "just 31.15% of
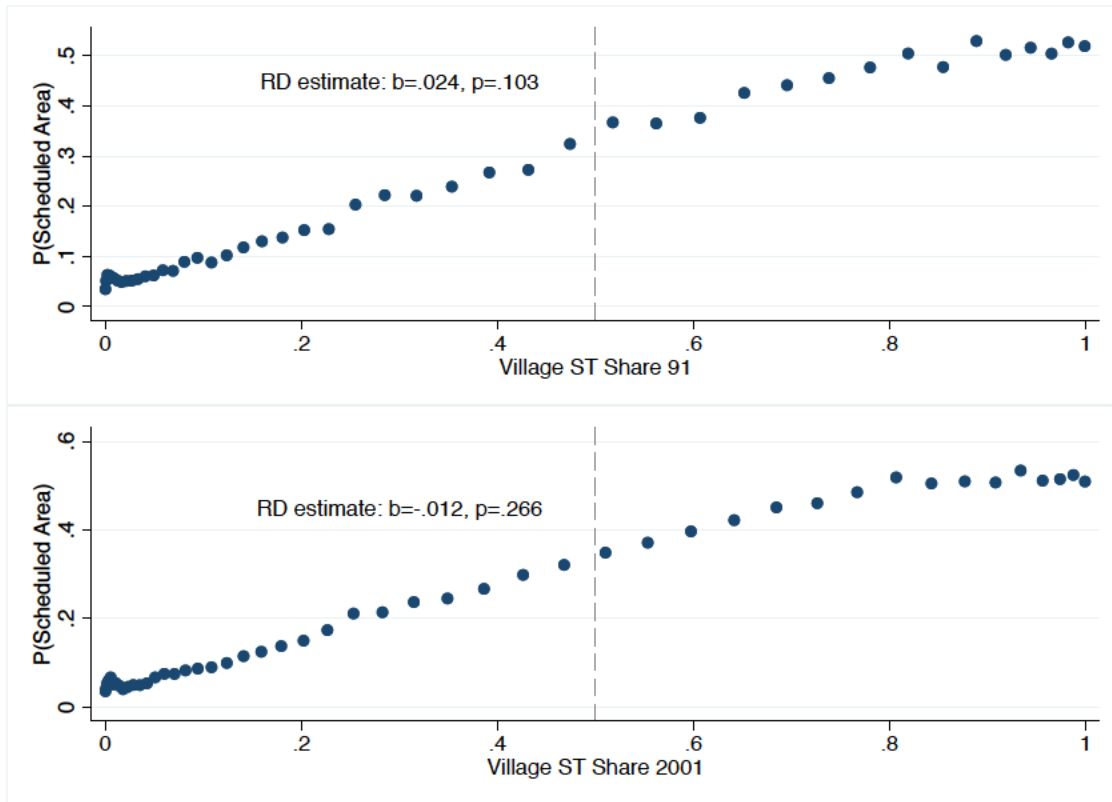
Figure A3: Assignment of Scheduled Areas Status

Notes: This figure shows how a village's ST population share (in 1991 and 2001) affects its likelihood of receiving Scheduled Areas status. Results attest to the haphazard assignment of Scheduled Areas, as they show that there is not a discontinuous jump in Scheduled Areas status where Scheduled Tribes constitute more than 50% of a village's total population.

the population of Chota Nagpur, and 44.67% of that of Santal Parganas was made up of Scheduled Tribals. Had the Census takers adopted the definitions used by the British in 1872, the percentage figures would have been 45.79% and 55.21% respectively" (Corbridge, Jewitt and Kumar, 2004, 64).[30]

A.6.2 Which Areas are Scheduled?

In practice, in Jharkhand today, most Scheduled Areas are assigned at the unit of district but some blocks are assigned as Scheduled Areas within Nonscheduled districts and some village-clusters are Scheduled within Nonscheduled blocks. With reference to earlier suggested criteria for which regions should be Scheduled: Jharkhand does not follow the fifty-percent rule as a criterion for Scheduling Areas. With no modifications in scheduling at the district-level, the Scheduled Areas assigned for Jharkhand (then Bihar) in 1950 have remained almost completely unchanged to present.[31] The Scheduled Areas of Jharkhand were re-affirmed after being assigned in 1950 in the Bihar Scheduled Areas Regulation of 1969 and again in 1977 and 2007.

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[30]It is not exactly clear why certain groups were re-classified or if there was a clear methodology taken. Corbridge argues that some because some " 'aboriginals' had gained employment in the mining or industrial sectors was taken as evidence of their 'detribalisation"' (Corbridge, Jewitt and Kumar, 2004, 64). Possibly the Government of Bihar thought de-scheduling some communities and areas would diminish the possibility that the mineral-rich region of Jharkhand would gain independent statehood.

[3] The only exceptions are the Scheduling of Bhandaria block of Garhwa district in 1977 and the Scheduling of two village-clusters, both within Satbarwa block in 2007.

B Data Construction

B.1 Creating an all-India dataset with NREGS, census, and election data sources

Because we hope this dataset and our procedures will be of use to other researchers we describe this process in detail:

1. Download the Socioeconomic High-resolution Rural-Urban Geographic Dataset for India (SHRUG), including available data from 1991-2011 Censuses and keys to match villages ($N \approx 647,000$) with 2001 and 2011 raw Census shape files (Asher and Novosad, 2019b).[32]

2. Download and combine village-cluster unit state datasets on NREGS from the MGN-REGA Public Data Portal.[33]

3. Build a village/village-cluster directory by downloading and combining individual block-level directory files from from the Ministry of Drinking Water and Sanitation.[34]

4. Extract and combine Census shape files using ArcGIS, to form spatially referenced (longitudes and latitudes) datasets of villages in the 2001 and 2011 Indian Censuses.[35]

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[32]The SHRUG dataset may be accessed at: `https://doi.org/10.7910/DVN/DPESAK`.

[33]The MGNREGA Public Data Portal may be accessed at: `mnregaweb4.nic.in/netnrega/dynamic2/dynamicreport_new4.aspx`.

[34]We access the data from `http://indiawater.gov.in/imisreports/nrdwpmain.aspx` at the National Rural Drinking Water Programme, Ministry of Drinking Water and Sanitation (Ministry of Drinking Water and Sanitation, 2014).

[35]We obtained Census data from New York University and Stanford University libraries, which licensed the data from InfoMap India (`https://www.mlinfomap.com/`).

5. Homogenize district and state names from NREGS dataset to the Water Ministry directory using a listing of all changes in district names and alternate spellings.[36] This allows matching of the NREGS dataset more efficiently.

6. Fuzzy match SHRID village names to the directory, and then NREGS village-cluster names to the directory. The directory provides a common reference for the two datasets.[37]

7. Add Scheduled Areas reservation status to the village dataset (see Appendix B.2 for more on Scheduled Areas reservation status construction).

8. Add assembly constituency-candidate level electoral records to the village dataset by locating each village within an assembly constituency using the village's latitude and longitude.[38]

9. Merge the dataset with Census 2001 and Census 2011 data using match keys from the SHRID dataset.

B.2   Identifying Scheduled Areas

Data on Scheduled Areas status was obtained from the government of India's Ministry of Tribal Affairs. The websites from which we obtained data in 2014 for eight of the nine states

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[36]For this, we rely on a compilation of all name changes between 2001 and 2011 available from (Statoids, N.d.), at `http://www.statoids.com/yin.html`.

[37]We used Stata's `reclink` command to carry out the fuzzy match. Other commands commonly used to fuzzy match string variables such as `soundex` are not useful in the Indian context because they rely on phonetic merging.

[38]Election data was downloaded from Election Commission of India (2014), at `http://eci.nic.in/eci_main1/ElectionStatistics.aspx`. We used the Spatial Join command in ArcGIS to carry out this procedure.

Table A2: **Balance Table: Matched Villages Across India**

	Difference	p-value	Unmatched	Matched
Scheduled Areas	0.002	0.181	57457	216569
Population Index (Shrug, 1991-2001)	0.036	0.000	42765	213059
Minority Index (Shrug, 1991-2001)	-0.000	0.937	42765	213059
Public Goods Index (Shrug, 1991-2001)	0.116	0.000	42754	213048
Vulnerable Index (Shrug, 1991-2001)	-0.074	0.000	44197	213404

Notes: This table presents balance on variables that appear in both 1991 and 2001 Census waves between villages we are able to match in our dataset and those that remain unmatched. The 'Difference' column represents the effect of Matched on each outcome in rows. Importantly, matched villages are not more likely to be Scheduled Areas than are unmatched villages.

in our sample have since been retired, though they can be accessed today using Internet archive website The Wayback Machine. Below, we provide original links, as well as links that can still be used today to access the sites, for each of the eight states.

Andhra Pradesh

- Original link: `http://tribal.nic.in/Content/ScheduledAreasinAndhraPradeshSSAreas.aspx`

- Archive link: `https://web.archive.org/web/20140818090711/http://tribal.nic.in:80/Content/ScheduledAreasinAndhraPradeshSSAreas.aspx`

Gujarat

- Original link: `http://tribal.nic.in/Content/ScheduledAreasinGujarat.aspx`

- Archive link: `https://web.archive.org/web/20140818090722/http://tribal.nic.in:80/Content/ScheduledAreasinGujarat.aspx`

Jharkhand

- Original link: `http://tribal.nic.in/Content/ScheduledAreasinBiharSSAreas.aspx`

- Archive link: `https://web.archive.org/web/20140818090717/http://tribal.nic.in:80/Content/ScheduledAreasinBiharSSAreas.aspx`

Himachal Pradesh

- Original link: `http://tribal.nic.in/Content/ScheduledAreasinHimachalPradeshSSAreas.aspx`

- Archive link: `https://web.archive.org/web/20140818090727/http://tribal.nic.in:80/Content/ScheduledAreasinHimachalPradeshSSAreas.aspx`

Maharashtra

- Original link: `http://tribal.nic.in/Content/ScheduledAreasinMaharashtraSSAreas.aspx`

- Archive link: `https://web.archive.org/web/20140818090843/http://tribal.nic.in:80/Content/ScheduledAreasinMaharashtraSSAreas.aspx`

Madhya Pradesh

- Original link: `http://tribal.nic.in/Content/ScheduledAreasinMadhyaPradeshSSAreas.aspx`

- Archive link: `https://web.archive.org/web/20140818090732/http://tribal.nic.in:80/Content/ScheduledAreasinMadhyaPradeshSSAreas.aspx`

Odisha

- Original link: `http://tribal.nic.in/Content/ScheduledAreasinOrissaSSAreas.aspx`

- Archive link: `https://web.archive.org/web/20140818090738/http://tribal.nic.in:80/Content/ScheduledAreasinOrissaSSAreas.aspx`

Rajasthan

- Original link: `http://tribal.nic.in/Content/ScheduledAreasinRajasthanSSAreas.aspx`

- Archive link: `https://web.archive.org/web/20140904021414/http://tribal.nic.in/Content/ScheduledAreasinRajasthanSSAreas.aspx`

Information on Scheduled Areas in all states, including the ninth in our sample, Chhattisgarh, may also be found in Annexure-II of "Statistical Profile of Scheduled Tribes in India (2013)," released by the Ministry of Tribal Affairs Statistical Division and accessible here: `https://tribal.nic.in/ST/StatisticalProfileofSTs2013.pdf`.

B.2.1 Verifying our Identification of Scheduled Areas and our spatial (longitudes and latitudes) data

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To verify that we correctly identified Scheduled Areas, and more generally that our spatial (longitudes and latitudes) data are accurate, we can compare our map of Scheduled Areas that we generated using our data (Figure 2) to an official government map.[39] In Figure A4, we reproduce our map and compare it to the government map. We can see that our map closely matches the government map, but that ours provides more fine-grained information, bolstering our confidence in our data collection methods.

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[39]This map can be accessed at `http://pesadarpan.gov.in/en_US/fifth-schedule-areas/-/asset_publisher`

Figure A4: Validating Spatial Data and Scheduled Area Identification

(a) Our Map
(Coding at Block Level)

(b) Government Map
(Coding at District Level)
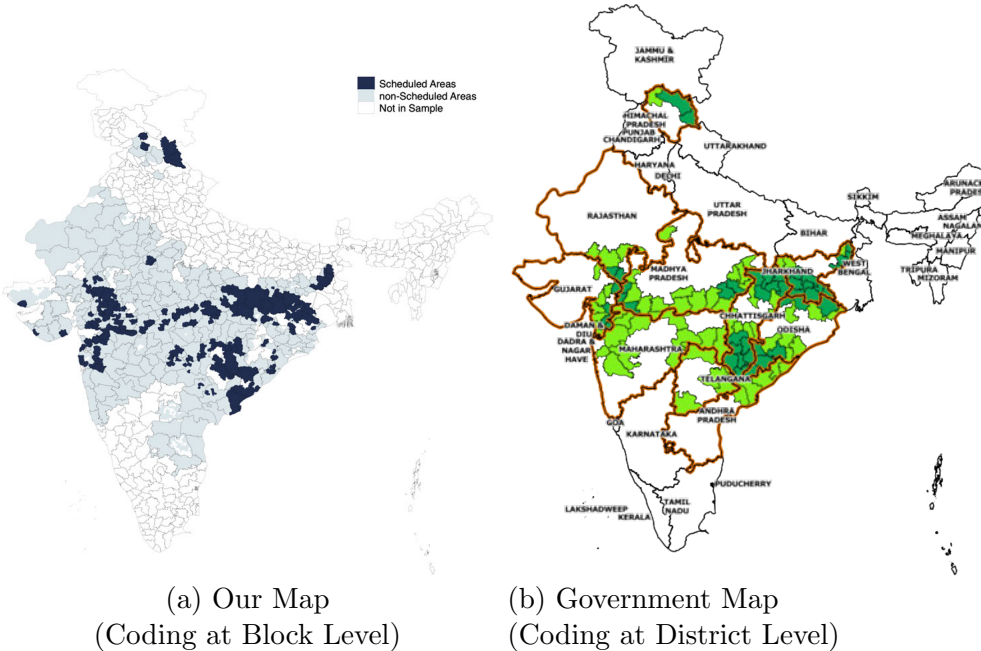
C Summary Statistics, Balance, and Sorting

C.1 Summary Statistics

Table A3: **Summary Statistics for 2001 and 1991 Census Datat**

	(1) non Scheduled Areas		(2) Scheduled Areas		(3) Simple Difference	
	mean	sd	mean	sd	b	t
Population Index (Census, 2001)	0.06	0.89	0.08	0.92	0.02*	(1.86)
Minority Index (Census, 2001)	0.01	0.91	0.00	0.95	0.02	(1.58)
Vulnerable Pop Index (Census, 2001)	0.08	0.79	0.05	0.77	0.03***	(3.04)
Education Index (Census, 2001)	0.05	0.85	0.06	0.92	0.01	(0.94)
Medical Facilities Index (Census, 2001)	0.02	1.11	0.02	1.09	0.01	(0.54)
Water Index (Census, 2001)	0.04	0.89	0.31	0.92	0.26***	(25.75)
Communications Index (Census, 2001)	0.07	0.98	0.18	0.92	0.11***	(10.28)
Banking Index (Census, 2001)	0.00	1.20	0.10	0.58	0.10***	(10.19)
Road Index (Census, 2001)	0.03	0.97	0.05	0.89	0.03***	(2.73)
Urbanization Index (Census, 2001)	0.06	1.48	0.22	0.57	0.16***	(13.57)
Irrigation Index (Census, 2001)	0.12	0.68	0.14	0.66	0.02***	(2.67)
Agricultural Worker Index (Census, 2001)	0.02	0.96	0.01	0.98	0.01	(0.88)
Marginal Worker Index (Census, 2001)	0.10	1.05	0.12	1.06	0.02*	(1.73)
Non Agricultural Worker Index (Census, 2001)	0.08	0.77	0.10	0.77	0.01*	(1.71)
Share SC (Census, 1991)	0.09	0.14	0.07	0.12	0.02***	(16.35)
Share SC (Census, 2001)	0.09	0.14	0.07	0.12	0.02***	(15.46)
Share ST (Census, 1991)	0.48	0.39	0.58	0.37	0.11***	(25.31)
Share ST (Census, 2001)	0.47	0.38	0.58	0.37	0.11***	(25.20)
Village Longitude	79.47	4.72	79.56	4.81	0.08	(1.57)
Village Latitude	21.88	2.01	21.90	1.96	0.01	(0.56)
Bandwidth (in Kilometers)	4.87	2.87	4.36	2.79	0.51***	(16.33)
AC Reserved, ST	0.46	0.50	0.61	0.49	0.15***	(27.96)
ST Majority	0.49	0.50	0.61	0.49	0.12***	(22.09)
Observations	18375		14266		32641	

Notes: This table presents summary statistics on 2001 and 1991 Census variables for treated and un treated units using our 10 km geographic regression discontinuity specification on the same sample as in our main analyses. Column 1 presents the mean and standard deviation of variables in non Scheduled Areas, column 2 presents the mean and standard deviation of variables in Scheduled Areas, and Column 3 presents the difference (column 1   column 2) and t statistic from a two sample t test.

Table A4: **Summary Statistics: NREGS and Census 2011 Employment Outcomes**

	(1) non Scheduled Areas		(2) Scheduled Areas		(3) Simple Difference	
	mean	sd	mean	sd	b	t
Logged (Workdays + 1)	8.06	2.51	8.10	2.66	0.04	(1.52)
Logged (Workdays ST + 1)	6.34	3.16	6.86	3.15	0.52***	(14.77)
Logged (Workdays SC + 1)	4.84	3.12	4.66	3.15	0.18***	(5.14)
Logged (Workdays Others + 1)	6.68	2.76	6.42	2.87	0.27***	(8.45)
Workdays	9748.16	10499.24	11467.71	15104.98	1719.54***	(11.60)
Workdays ST	4306.59	6367.91	6851.69	12279.96	2545.10***	(22.52)
Workdays SC	1259.99	2130.40	1139.16	2032.10	120.82***	(5.22)
Workdays Others	4181.59	6448.20	3476.85	5384.62	704.74***	(10.75)
Total Workers	5.85	1.05	5.83	1.06	0.02	(1.33)
Total Workers Men	5.30	1.04	5.25	1.06	0.04***	(3.79)
Total Workers Women	4.89	1.22	4.94	1.17	0.05***	(3.69)
Main Workers	5.15	1.51	5.07	1.59	0.07***	(4.25)
Main Workers Men	4.78	1.45	4.70	1.53	0.09***	(5.24)
Main Workers Women	3.76	1.74	3.75	1.77	0.02	(0.80)
Marginal Workers	4.20	1.71	4.24	1.69	0.04**	(2.08)
Marginal Workers Men	3.28	1.62	3.30	1.60	0.02	(1.24)
Marginal Workers Women	3.64	1.72	3.71	1.69	0.07***	(3.88)
Other Workers	3.01	1.58	2.87	1.64	0.15***	(8.07)
Other Workers Men	2.72	1.60	2.56	1.65	0.16***	(8.69)
Other Workers Women	1.80	1.25	1.76	1.26	0.04***	(2.77)
Observations	18375		14266		32641	

Notes: This table presents summary statistics on NREGS and 2011 Census employment outcome vari ables for treated and untreated units using our 10 km geographic regression discontinuity specification on the same sample as in our main analyses. Column 1 presents the mean and standard deviation of variables in non Scheduled Areas, column 2 presents the mean and standard deviation of variables in Scheduled Areas, and Column 3 presents the difference (column 1   column 2) and t statistic from a two sample t test.

Table A5: **Summary Statistics and Balance for 2011 Public Goods Analysis**

	(1)		(2)		(3)	
	non Scheduled Areas		Scheduled Areas		Simple Difference	
	mean	sd	mean	sd	b	t
Population Index (Census, 2001)	0.77	1.69	1.01	1.96	0.23***	(3.25)
Minority Index (Census, 2001)	0.71	1.58	0.93	1.83	0.23***	(3.41)
Vulnerable Pop Index (Census, 2001)	0.19	0.76	0.11	0.79	0.08***	(2.76)
Education Index (Census, 2001)	0.64	1.69	0.81	1.96	0.17**	(2.36)
Medical Facilities Index (Census, 2001)	0.68	2.80	0.91	2.49	0.23**	(2.23)
Water Index (Census, 2001)	0.30	0.77	0.68	0.84	0.39***	(12.24)
Communications Index (Census, 2001)	0.44	1.40	0.50	1.47	0.06	(1.11)
Banking Index (Census, 2001)	0.41	1.52	0.46	1.29	0.05	(0.98)
Road Index (Census, 2001)	0.09	1.09	0.08	0.93	0.01	(0.24)
Urbanization Index (Census, 2001)	0.08	1.52	0.32	0.60	0.23***	(5.64)
Irrigation Index (Census, 2001)	0.21	0.96	0.29	1.12	0.08**	(2.07)
Agricultural Worker Index (Census, 2001)	0.76	1.60	1.01	1.74	0.25***	(3.86)
Marginal Worker Index (Census, 2001)	0.04	1.00	0.01	0.91	0.06	(1.59)
Non Agricultural Worker Index (Census, 2001)	0.45	1.54	0.55	1.54	0.10*	(1.66)
Share SC (Census, 1991)	0.11	0.12	0.09	0.10	0.02***	(5.11)
Share SC (Census, 2001)	0.11	0.12	0.09	0.10	0.02***	(4.47)
Share ST (Census, 1991)	0.35	0.34	0.44	0.36	0.08***	(6.01)
Share ST (Census, 2001)	0.36	0.34	0.44	0.35	0.08***	(6.20)
Observations	1632		1117		2749	

Notes: This table presents summary statistics on 2001 and 1991 Census variables for treated and un treated units using our 10 km geographic regression discontinuity specification on the same sample as in our analysis on 2011 public goods (Census market villages). Column 1 presents the mean and standard deviation of variables in non Scheduled Areas, column 2 presents the mean and standard deviation of vari ables in Scheduled Areas, and Column 3 presents the difference (column 1 column 2) and t statistic from a two sample t test.

Table A6: **Summary Statistics for 2011 Census Market Village Outcomes**

| | (1) | | (2) | | (3) | |
| | non Scheduled Areas | | Scheduled Areas | | Simple Difference | |
	mean	sd	mean	sd	b	t
Overall Public Goods Index	0.51	0.21	0.55	0.19	0.04***	(5.52)
Roads Index	0.49	0.25	0.52	0.23	0.04***	(3.84)
All Weather Road (Y/N)	0.78	0.41	0.83	0.38	0.04***	(2.93)
National Highway (Y/N)	0.08	0.28	0.09	0.29	0.01	(0.75)
State Highway (Y/N)	0.18	0.38	0.21	0.41	0.03**	(2.04)
Major District Road (Y/N)	0.39	0.49	0.42	0.49	0.03	(1.62)
Other District Road (Y/N)	0.62	0.49	0.67	0.47	0.05***	(2.89)
Gravel Road (Y/N)	0.87	0.34	0.91	0.28	0.04***	(3.69)
Water Index	0.53	0.21	0.56	0.19	0.03***	(4.04)
Handpump (Y/N)	0.89	0.31	0.91	0.28	0.02**	(2.16)
Tap Water Treated (Y/N)	0.30	0.46	0.37	0.48	0.07***	(3.92)
Tank, Pond, Lake (Y/N)	0.49	0.50	0.48	0.50	0.02	(0.86)
Covered Well (Y/N)	0.16	0.37	0.21	0.41	0.05***	(3.26)
Uncovered Well (Y/N)	0.79	0.40	0.82	0.38	0.03*	(1.80)
Irrigation Index	0.39	0.36	0.41	0.36	0.02	(1.43)
Tubewell/Borehole (Y/N)	0.42	0.49	0.43	0.50	0.02	(0.79)
River/Canal (Y/N)	0.37	0.48	0.39	0.49	0.03	(1.33)
Electricity Index	0.70	0.38	0.72	0.36	0.02*	(1.71)
Electricity for Agriculture Use (Y/N)	0.67	0.47	0.71	0.46	0.03*	(1.87)
Electricity for Domestic Use (Y/N)	0.85	0.36	0.87	0.33	0.02*	(1.73)
Electricity for Commercial Use (Y/N)	0.57	0.49	0.59	0.49	0.02	(0.91)
Communications Index	0.46	0.34	0.54	0.34	0.08***	(6.20)
Post Office (Y/N)	0.33	0.47	0.43	0.49	0.10***	(5.37)
Post and Telegraph Office (Y/N)	0.24	0.43	0.32	0.47	0.08***	(4.45)
Telephone (Y/N)	0.53	0.50	0.60	0.49	0.07***	(3.67)
Mobile Coverage (Y/N)	0.75	0.43	0.83	0.38	0.08***	(5.00)
Education Index	0.47	0.26	0.53	0.25	0.05***	(5.36)
Primary School (Y/N)	0.90	0.30	0.95	0.22	0.05***	(4.71)
Middle School (Y/N)	0.74	0.44	0.82	0.38	0.08***	(4.95)
Secondary School (Y/N)	0.45	0.50	0.54	0.50	0.09***	(4.42)
Senior Secondary School (Y/N)	0.25	0.43	0.29	0.46	0.05***	(2.73)
College (Y/N)	0.03	0.18	0.04	0.19	0.01	(0.83)
Observations	1632		1117		2749	

Notes: This table presents summary statistics on 2011 public goods Census variables for treated and untreated units using our 10 km geographic regression discontinuity specification on the same sample as in our analysis on 2011 public goods (Census market villages). Column 1 presents the mean and standard deviation of variables in non Scheduled Areas, column 2 presents the mean and standard deviation of variables in Scheduled Areas, and Column 3 presents the difference (column 1 column 2) and t statistic from a two sample t test.

Table A7: **Summary Statistics for Assembly Constituency (AC) ST Reservation, Scheduled Areas**

	(1) non ST Reserved		(2) ST Reserved		(3) Simple Difference	
	mean	sd	mean	sd	b	t
Population Index (Census, 2001)	0.09	1.04	0.07	0.84	0.02	(1.30)
Minority Index (Census, 2001)	0.12	0.97	0.08	0.93	0.21***	(12.58)
Vulnerable Pop Index (Census, 2001)	0.17	0.83	0.02	0.72	0.18***	(13.55)
Education Index (Census, 2001)	0.11	1.04	0.03	0.84	0.08***	(5.06)
Medical Facilities Index (Census, 2001)	0.01	1.28	0.05	0.95	0.05***	(2.75)
Water Index (Census, 2001)	0.37	0.81	0.26	0.98	0.11***	(7.26)
Communications Index (Census, 2001)	0.22	0.97	0.15	0.89	0.07***	(4.51)
Banking Index (Census, 2001)	0.08	0.62	0.11	0.56	0.03***	(2.75)
Road Index (Census, 2001)	0.04	0.99	0.06	0.81	0.02	(1.51)
Urbanization Index (Census, 2001)	0.06	0.49	0.33	0.60	0.27***	(29.51)
Irrigation Index (Census, 2001)	0.17	0.69	0.13	0.64	0.05***	(4.19)
Agricultural Worker Index (Census, 2001)	0.12	0.94	0.06	1.00	0.18***	(10.84)
Marginal Worker Index (Census, 2001)	0.18	1.12	0.08	1.01	0.11***	(5.76)
Non Agricultural Worker Index (Census, 2001)	0.04	0.89	0.13	0.68	0.09***	(6.70)
Population Perc SC (1991)	0.09	0.15	0.05	0.10	0.04***	(17.35)
Population Perc SC (2001)	0.09	0.15	0.05	0.09	0.04***	(19.85)
Population Perc ST (1991)	0.42	0.39	0.68	0.33	0.26***	(41.56)
Population Perc ST (2001)	0.42	0.38	0.68	0.32	0.26***	(42.32)
Village Longitude	81.71	5.22	78.20	3.97	3.52***	(42.89)
Village Latitude	22.04	2.25	21.80	1.75	0.24***	(6.78)
Bandwidth (in Kilometers)	4.39	2.78	4.34	2.80	0.06	(1.20)
Observations	5525		8741		14266	

Notes: This table presents summary statistics on 2001 and 1991 Census variables for Scheduled Areas villages with (ST Reserved) and without (non ST Reserved) overlapping AC level ST reservations using our 10 km geographic regression discontinuity specification on the same sample as in our analyses. Column 1 presents the mean and standard deviation of variables in non ST reserved areas, column 2 presents the mean and standard deviation of variables in ST reserved areas, and Column 3 presents the difference (column 1 column 2) and t statistic from a two sample t test.

Table A8: **Summary Statistics for Assembly Constituency (AC) ST Reservation, Non-Scheduled Areas**

	(1) non ST Reserved		(2) ST Reserved		(3) Simple Difference	
	mean	sd	mean	sd	b	t
Population Index (Census, 2001)	0.00	1.00	0.13	0.72	0.13***	(9.99)
Minority Index (Census, 2001)	0.09	0.88	0.08	0.94	0.18***	(13.02)
Vulnerable Pop Index (Census, 2001)	0.08	0.84	0.08	0.72	0.01	(0.46)
Education Index (Census, 2001)	0.05	0.87	0.05	0.83	0.00	(0.22)
Medical Facilities Index (Census, 2001)	0.02	1.30	0.01	0.84	0.01	(0.38)
Water Index (Census, 2001)	0.06	0.86	0.03	0.93	0.03**	(2.17)
Communications Index (Census, 2001)	0.02	1.01	0.18	0.93	0.20***	(14.11)
Banking Index (Census, 2001)	0.03	0.67	0.04	1.61	0.07***	(3.84)
Road Index (Census, 2001)	0.01	0.95	0.07	0.98	0.09***	(5.98)
Urbanization Index (Census, 2001)	0.05	0.76	0.20	2.01	0.25***	(10.77)
Irrigation Index (Census, 2001)	0.08	0.66	0.17	0.69	0.09***	(9.27)
Agricultural Worker Index (Census, 2001)	0.04	0.97	0.00	0.95	0.04**	(2.55)
Marginal Worker Index (Census, 2001)	0.08	1.04	0.12	1.06	0.04**	(2.39)
Non Agricultural Worker Index (Census, 2001)	0.00	0.91	0.18	0.56	0.17***	(15.79)
Population Perc SC (1991)	0.11	0.15	0.07	0.13	0.05***	(22.33)
Population Perc SC (2001)	0.11	0.15	0.06	0.12	0.05***	(22.49)
Population Perc ST (1991)	0.30	0.34	0.68	0.33	0.39***	(77.89)
Population Perc ST (2001)	0.30	0.33	0.68	0.33	0.38***	(77.62)
Village Longitude	80.21	5.06	78.61	4.12	1.59***	(23.48)
Village Latitude	22.00	2.13	21.74	1.84	0.26***	(8.81)
Bandwidth (in Kilometers)	4.96	2.87	4.77	2.86	0.20***	(4.69)
Observations	9937		8438		18375	

Notes: This table presents summary statistics on 2001 and 1991 Census variables for non Scheduled Areas villages with (ST Reserved) and without (non ST Reserved) overlapping AC level ST reservations using our 10 km geographic regression discontinuity specification on the same sample as in our analyses. Column 1 presents the mean and standard deviation of variables in non ST reserved areas, column 2 presents the mean and standard deviation of variables in ST reserved areas, and Column 3 presents the difference (column 1 column 2) and t statistic from a two sample t test.

C.2   Balance

Table A9: **Balance Table - OLS**

	Difference	p-value	GPs	Villages
Population Index (Census, 2001)	-0.084	0.000	72521	207221
Minority Index (Census, 2001)	0.034	0.000	72521	207221
Vulnerable Pop Index (Census, 2001)	-0.068	0.000	72521	207221
Education Index (Census, 2001)	-0.024	0.000	72521	207221
Medical Facilities Index (Census, 2001)	0.007	0.211	72521	207221
Water Index (Census, 2001)	0.207	0.000	72521	207221
Communications Index (Census, 2001)	-0.199	0.000	72521	207221
Banking Index (Census, 2001)	-0.125	0.000	72521	207221
Road Index (Census, 2001)	-0.005	0.520	72521	207221
Urbanization Index (Census, 2001)	0.156	0.000	72521	207221
Irrigation Index (Census, 2001)	-0.186	0.000	72521	207221
Agricultural Worker Index (Census, 2001)	0.021	0.004	72521	207221
Marginal Worker Index (Census, 2001)	0.100	0.000	72521	207221
Non-Agricultural Worker Index (Census, 2001)	-0.079	0.000	72521	207221
Share SC (Census, 1991)	-0.097	0.000	72521	207221
Share SC (Census, 2001)	-0.099	0.000	72521	207221
Share ST (Census, 1991)	0.433	0.000	72521	207221
Share ST (Census, 2001)	0.429	0.000	72521	207221

Notes: This table presents balance between treated and untreated units using our OLS specification on the same sample as our OLS analysis (see Appendix D.1). Standard errors are clustered at the gram panchayat (GP) level. Controls include state fixed effects. The 'Difference' column presents the treatment effect of Scheduled Areas on each Index in rows.

Table A10: **Balance Table - 10 km RD**

	Difference	p-value	GPs	Villages
Population Index (Census, 2001)	-0.024	0.035	13338	32641
Minority Index (Census, 2001)	0.020	0.103	13338	32641
Vulnerable Pop Index (Census, 2001)	-0.025	0.025	13338	32641
Education Index (Census, 2001)	0.003	0.773	13338	32641
Medical Facilities Index (Census, 2001)	0.011	0.376	13338	32641
Water Index (Census, 2001)	0.214	0.000	13338	32641
Communications Index (Census, 2001)	-0.092	0.000	13338	32641
Banking Index (Census, 2001)	-0.116	0.000	13338	32641
Road Index (Census, 2001)	-0.000	0.997	13338	32641
Urbanization Index (Census, 2001)	0.156	0.000	13338	32641
Irrigation Index (Census, 2001)	-0.016	0.069	13338	32641
Agricultural Worker Index (Census, 2001)	0.003	0.795	13338	32641
Marginal Worker Index (Census, 2001)	0.023	0.132	13338	32641
Non-Agricultural Worker Index (Census, 2001)	-0.011	0.253	13338	32641
Share SC (Census, 1991)	-0.022	0.000	13338	32641
Share SC (Census, 2001)	-0.021	0.000	13338	32641
Share ST (Census, 1991)	0.110	0.000	13338	32641
Share ST (Census, 2001)	0.109	0.000	13338	32641

Notes: This table presents balance between treated and untreated units using our 10 km geographic regression discontinuity specification on the same sample as in our main analyses. Standard errors are clustered at the gram panchayat (GP) level. Controls include state fixed effects and a geographic control function. The 'Difference' column presents the treatment effect of Scheduled Areas on each Index in rows.

Table A11: **Balance Table on 2001 Census for 2011 Market Villages - 10 km RD**

	Difference	p-value	GPs	Villages
Population Index (Census, 2001)	0.002	0.974	2223	2749
Minority Index (Census, 2001)	0.060	0.292	2223	2749
Vulnerable Pop Index (Census, 2001)	-0.044	0.136	2223	2749
Education Index (Census, 2001)	0.097	0.128	2223	2749
Medical Facilities Index (Census, 2001)	0.061	0.565	2223	2749
Water Index (Census, 2001)	0.309	0.000	2223	2749
Communications Index (Census, 2001)	-0.060	0.162	2223	2749
Banking Index (Census, 2001)	-0.079	0.125	2223	2749
Road Index (Census, 2001)	-0.041	0.312	2223	2749
Urbanization Index (Census, 2001)	0.193	0.000	2223	2749
Irrigation Index (Census, 2001)	-0.035	0.317	2223	2749
Agricultural Worker Index (Census, 2001)	-0.000	0.995	2223	2749
Marginal Worker Index (Census, 2001)	0.032	0.365	2223	2749
Non-Agricultural Worker Index (Census, 2001)	0.040	0.451	2223	2749
Share SC (Census, 1991)	-0.018	0.000	2223	2749
Share SC (Census, 2001)	-0.015	0.000	2223	2749
Share ST (Census, 1991)	0.090	0.000	2223	2749
Share ST (Census, 2001)	0.090	0.000	2223	2749

Notes: This table presents balance between treated and untreated units using our 10 km geographic regression discontinuity specification on the same sample as in our analysis on 2011 public goods (Census market villages). Standard errors are clustered at the gram panchayat (GP) level. Controls include state fixed effects and a geographic control function. The 'Difference' column presents the treatment effect of Scheduled Areas on each Index in rows.
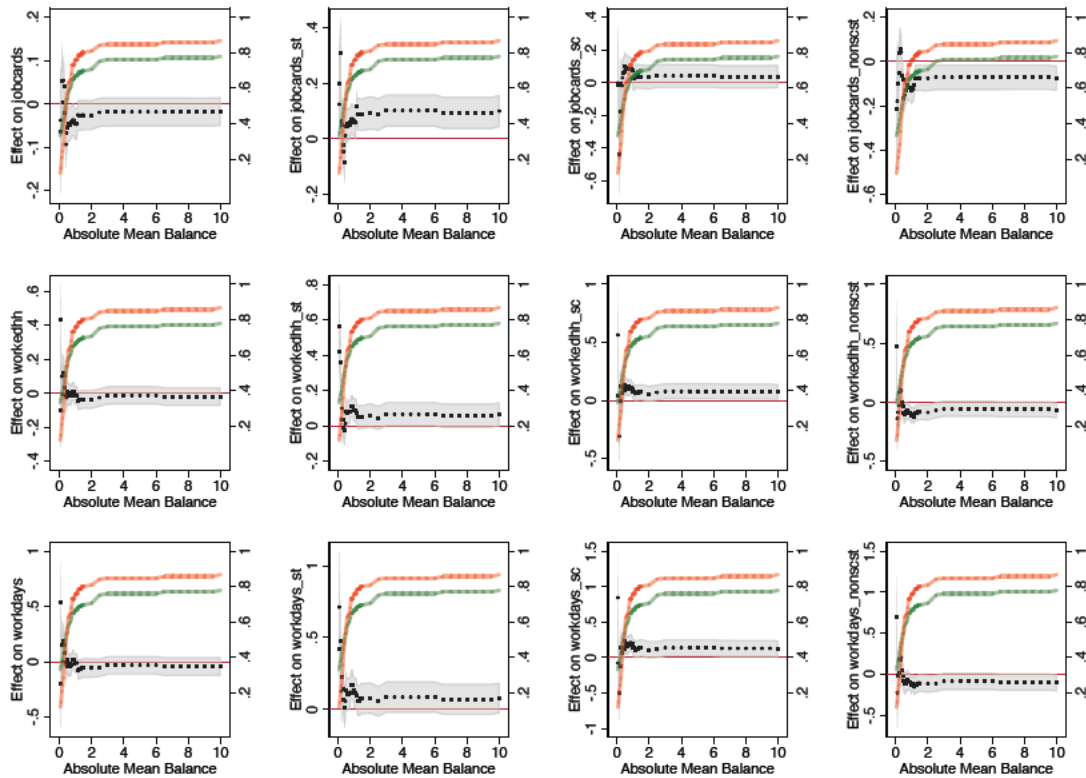
Figure A5: **Geographic RD Balance**

Notes: This figure probes the robustness of main treatment effects when the sample is restricted to various degrees of imbalance in pre treatment Census 2001 indices. We proceed as follows: first we calculate a mean index of all 14 Census 2001 indices. Then for each district in the data, we calculate the degree of imbalance on this global mean balance index by regressing it on our standard geographic RD regression. Then we rank the districts starting at the least imbalanced on the left of the figures above to most imbalanced as we move towards the right on the x axis. Treatment effects (on the left y axis) are shown by the black dots for each sample while the gray area plots the associated 95 percent confidence interval. The amount of data in each sample is shown on the right y axis. The green line traces the cumulative distribution of districts in the sample as more and more districts are added to the analysis. The red line traces the cumulative density of villages in the analysis. Overall, we see that our results are robust and stabilize even with only 30 percent of the districts in the analysis.
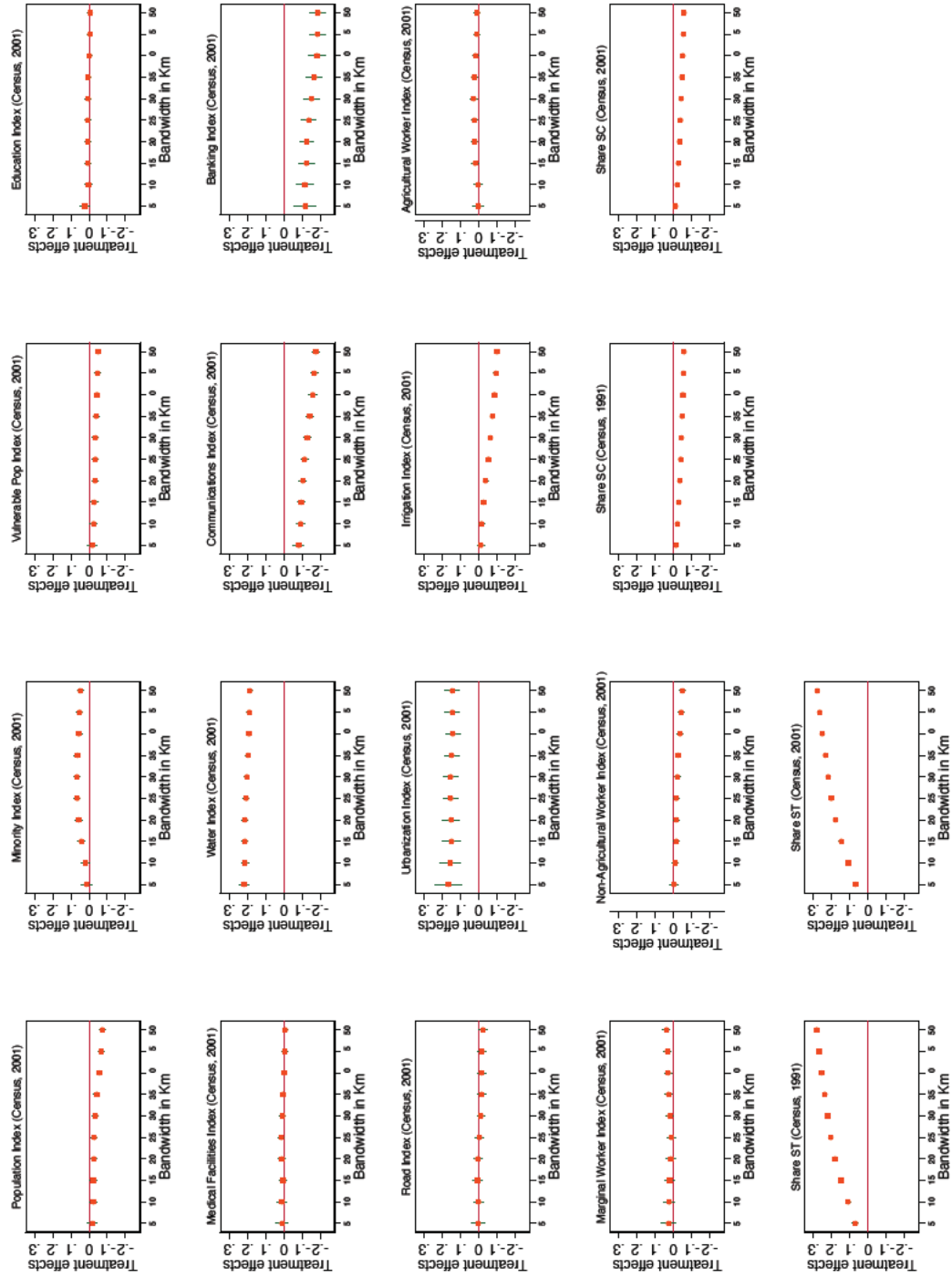
Figure A6: Evolution of 1991 and 2001 Controls Across Different Bandwidths

Notes: This figure shows the treatment effect of *Scheduled Areas* on all 14 indices (as well as 1991 and 2001 population shares) at various bandwidths. We find that the small imbalances that we do observe do not increase, but in most cases tend toward zero, as the bandwidth of analysis shrinks.

C.3 Over-time Changes and Sorting
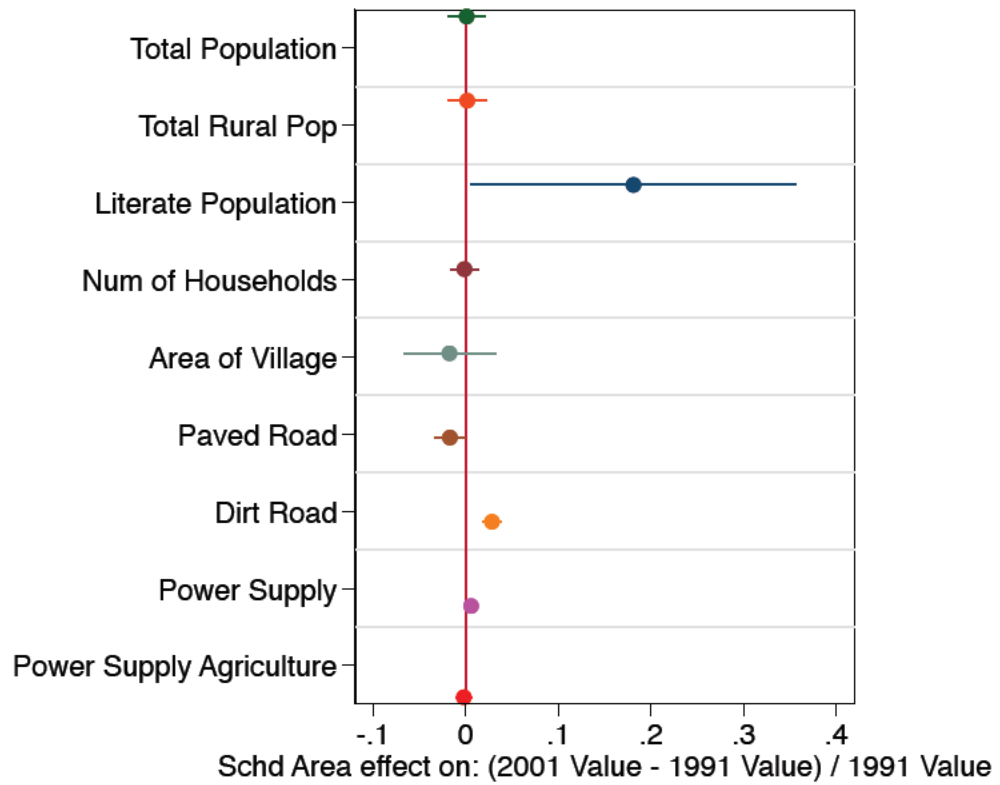
Figure A7: **Over-time Changes Across 1991-2001 Censuses**

Notes: This figure shows the treatment effect of *Scheduled Areas* on over time changes in variables that we are able to track across both the 1991 and 2001 Censuses. We use our 10 km geographic regression discontinuity specification on the same sample as our main analysis. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion and state fixed effects. We find limited evidence of differential over time changes across these variables in Scheduled versus non Scheduled Areas.

Table A12: **Sorting Test**

	(1) Share ST 2001	(2) Share ST 2001	(3) Share ST 2011	(4) Share ST 2011	(5) Share ST 2011
Scheduled Areas	0.099***	0.005***	0.101***	0.006***	0.004***
	(0.006)	(0.001)	(0.006)	(0.001)	(0.001)
ST Share, 1991		0.941***			0.412***
		(0.002)			(0.023)
ST Share, 2001				0.953***	0.557***
				(0.002)	(0.023)
Control Mean	0.474	0.474	0.480	0.480	0.480
# GPs	13338	13338	13338	13338	13338
# Villages	32641	32641	32641	32641	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. This table shows the treatment effect of *Scheduled Areas* on the ST share of the population in different Census years and controlling for different preceding years. We use our 10 km geographic regression discontinuity specification on the same sample as our main analysis. Standard errors are clustered at the gram panchayat (GP) level. Controls include state fixed effects, all 14 baseline indices, and a geographic control function. The table shows that once we account for ST population shares in 1991 and 2001, there remain no substantive differences in ST population across treated and control areas in 2011. We therefore control for 1991 and 2001 ST population shares in all of our reported analysis in the revised manuscript.

C.4 Density of Distance to Threshold
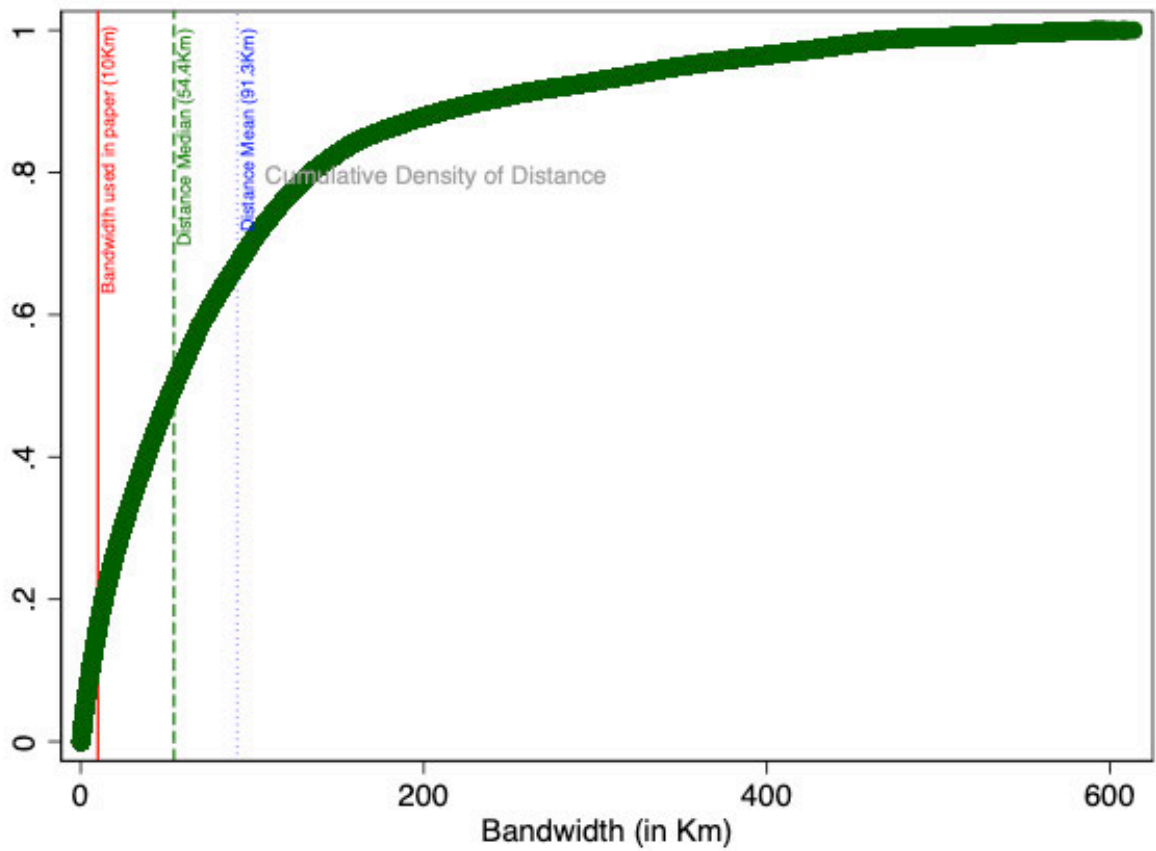
Figure A8: **Cumulative Density of Distance to the Threshold**

Notes: This figure plots the density of observations at different kilometer distances to the geographic regres
sion discontinuity threshold. We include indicators for the bandwidth used in the paper (10 kilometers) and
the mean and median distances to the threshold for reference.

D Additional Results and Robustness of Main Effects

D.1 OLS Main Results

A naive ordinary least squares model compares Scheduled and non-Scheduled villages with state fixed effects and village level controls from the 2001 and 1991 Indian Censuses with the following specification:

$$y_{vgs} \qquad a_s + \gamma Scheduled\ Area_{vgs} + Z'_{vgs}\phi + \epsilon_{vgs} \qquad (2)$$

Table A13: **The Effect of Scheduled Areas on NREGS (OLS)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Panel A: Jobcards				
Scheduled Areas	0.020**	0.596***	-0.436***	-0.347***
	(0.009)	(0.018)	(0.020)	(0.016)
Control Mean (Unlogged)	635.522	118.588	113.634	403.301
# GPs	72521	72521	72521	72521
# Villages	207221	207221	207221	207221
Panel B: Households Worked				
Scheduled Areas	0.119***	0.627***	-0.337***	-0.221***
	(0.014)	(0.020)	(0.021)	(0.019)
Control Mean (Unlogged)	193.144	41.606	37.646	113.892
# GPs	72521	72521	72521	72521
# Villages	207221	207221	207221	207221
Panel C: Workdays				
Scheduled Areas	0.140***	0.794***	-0.524***	-0.264***
	(0.022)	(0.031)	(0.035)	(0.030)
Control Mean (Unlogged)	8660.401	1811.806	1702.934	5145.661
# GPs	72521	72521	72521	72521
# Villages	207221	207221	207221	207221

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion and state fixed effects.

D.2 Functional Form and Bandwidth
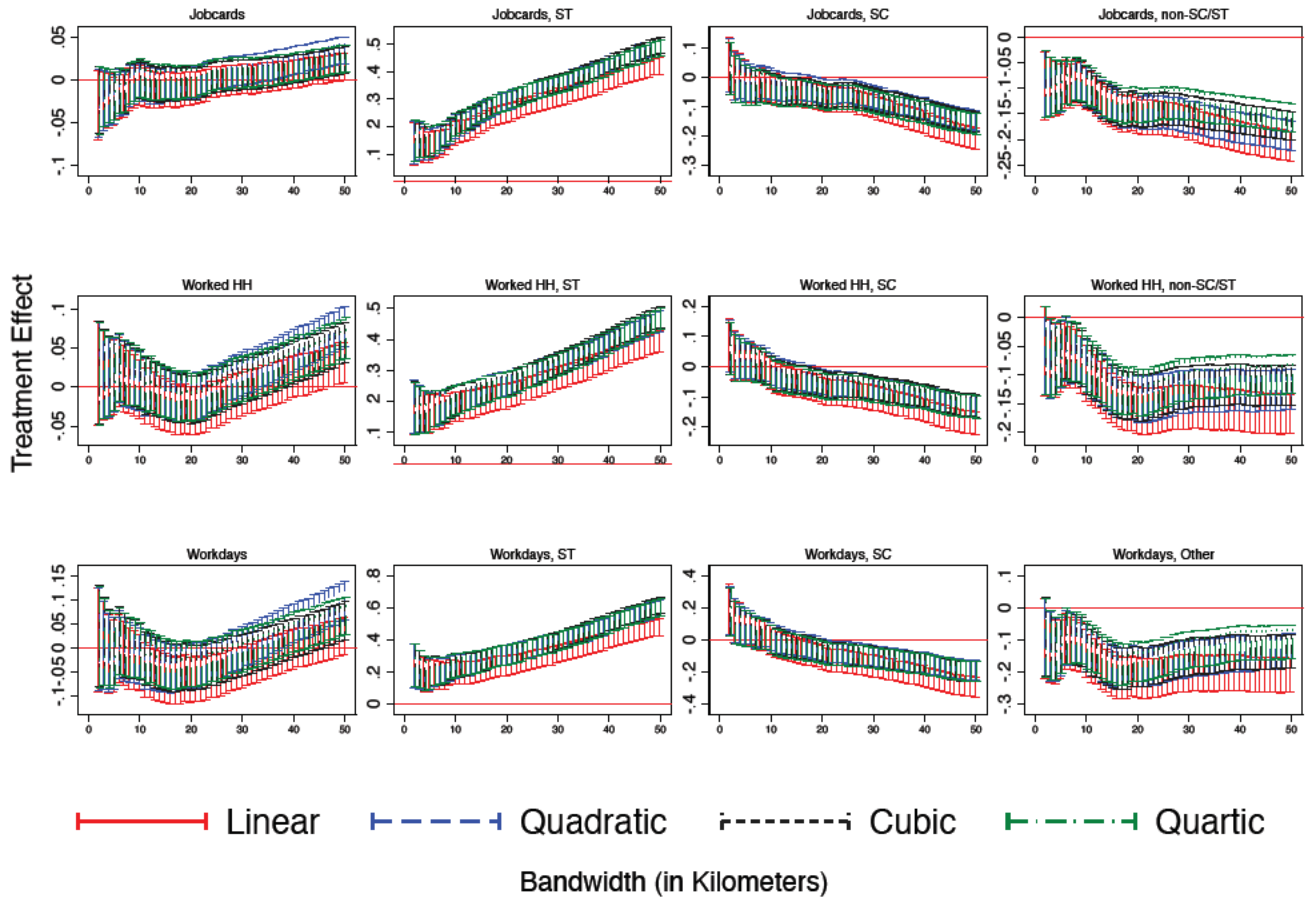
Figure A9: **RD Robustness by Bandwidth and Functional Form**

Notes: Plots results in Table 2 by control function and bandwidth with 90% confidence intervals.

D.3 Controlling for Number of Matched Villages within a GP

One concern with the approach taken for the NREGS analysis could be that the number of villages within each gram panchayat differs between Scheduled and non-Scheduled Areas. Were this the case, then assigning all villages within a gram panchayat the same values could bias our comparison of Scheduled and non-Scheduled Areas. To account for this possibility, we show in table A14 that our main results are robust, both substantively and statistically, when we include fixed effects for the number of gram panchayat villages.

Table A14: **Main NREGS Results with Num Matched Villages per GP FE**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Panel A: Jobcards				
Scheduled Areas	-0.007	0.199***	-0.037	-0.106***
	(0.013)	(0.024)	(0.031)	(0.023)
Control Mean (Unlogged)	652.979	259.373	92.768	300.838
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel B: Households Worked				
Scheduled Areas	-0.001	0.193***	-0.016	-0.094***
	(0.022)	(0.029)	(0.031)	(0.028)
Control Mean (Unlogged)	220.579	98.339	29.806	92.435
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel C: Workdays				
Scheduled Areas	-0.020	0.230***	0.010	-0.133***
	(0.035)	(0.045)	(0.052)	(0.044)
Control Mean (Unlogged)	9748.164	4306.585	1259.986	4181.593
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state and number of GP villages fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$.

D.4 Non-Logged Outcomes

Table A15: **The Effect of Scheduled Areas on NREGS (OLS)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Panel A: Jobcards				
Scheduled Areas	57.547***	140.433***	-28.147***	-54.739***
	(5.851)	(4.646)	(1.933)	(3.862)
Control Mean (Unlogged)	635.522	118.588	113.634	403.301
# GPs	72521	72521	72521	72521
# Villages	207221	207221	207221	207221
Panel B: Households Worked				
Scheduled Areas	58.172***	75.639***	-5.712***	-11.756***
	(3.351)	(2.661)	(0.810)	(1.696)
Control Mean (Unlogged)	193.144	41.606	37.646	113.892
# GPs	72521	72521	72521	72521
# Villages	207221	207221	207221	207221
Panel C: Workdays				
Scheduled Areas	3979.138***	4432.663***	-145.964***	-307.561***
	(231.931)	(177.965)	(41.191)	(97.365)
Control Mean (Unlogged)	8660.401	1811.806	1702.934	5145.661
# GPs	72521	72521	72521	72521
# Villages	207221	207221	207221	207221

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion and state fixed effects.

Table A16: **The Effect of Scheduled Areas on NREGS (10 km RD)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Panel A: Jobcards				
Scheduled Areas	21.815***	45.936***	-6.693**	-17.428***
	(7.878)	(6.141)	(2.702)	(5.626)
Control Mean (Unlogged)	652.979	259.373	92.768	300.838
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel B: Households Worked				
Scheduled Areas	23.230***	30.633***	-1.041	-6.362***
	(4.224)	(3.143)	(1.096)	(2.455)
Control Mean (Unlogged)	220.579	98.339	29.806	92.435
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel C: Workdays				
Scheduled Areas	1706.983***	2118.336***	-39.018	-372.335***
	(269.853)	(203.401)	(49.454)	(129.318)
Control Mean (Unlogged)	9748.164	4306.585	1259.986	4181.593
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$.

Figure A10: **Leverage Plots, Logged and non-Logged Outcomes**

Notes: This figure displays leverage versus squared residual plots for logged and non logged outcomes. The figure shows that residuals shrink under logged outcomes relative to non logged outcomes. Consistent with these results, we observe improved goodness of fit and greater R^2 for our models that use logged outcomes.

D.5 Inverse Hyperbolic Sine Transformed Outcomes

Table A17: **The Effect of Scheduled Areas on NREGS (10 km RD)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Panel A: Jobcards				
Scheduled Areas	-0.002	0.213***	-0.040	-0.105***
	(0.014)	(0.027)	(0.034)	(0.025)
Control Mean (Unlogged)	652.979	259.373	92.768	300.838
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel B: Households Worked				
Scheduled Areas	-0.001	0.212***	-0.016	-0.100***
	(0.025)	(0.032)	(0.036)	(0.032)
Control Mean (Unlogged)	220.579	98.339	29.806	92.435
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel C: Workdays				
Scheduled Areas	-0.021	0.241***	0.006	-0.138***
	(0.038)	(0.048)	(0.057)	(0.048)
Control Mean (Unlogged)	9748.164	4306.585	1259.986	4181.593
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$.
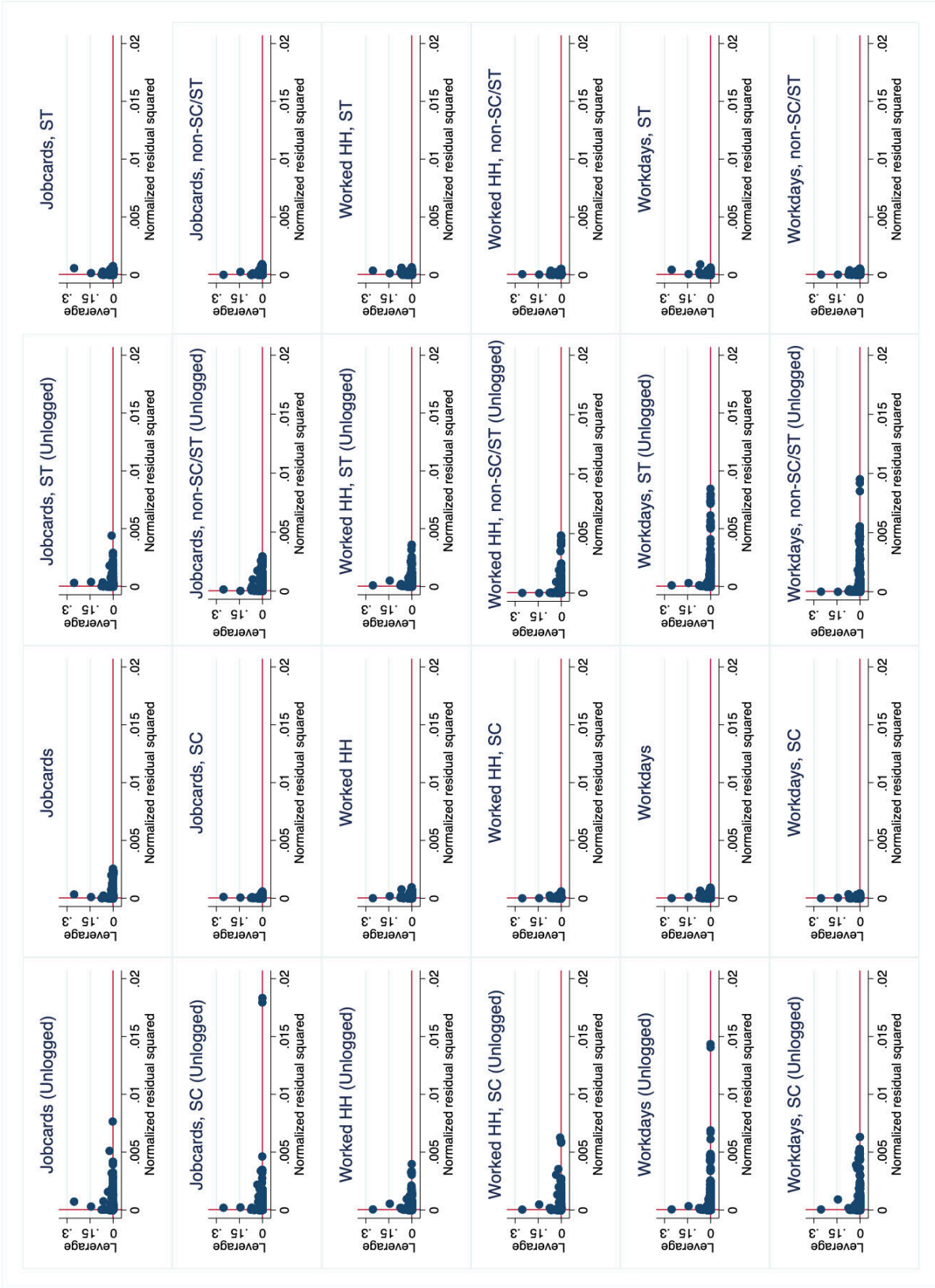
D.6 Optimal Bandwidths by Outcome

Table A18: **Optimal Bandwidths by Outcome**

	Bandwidth	GPs
Jobcards	28.7	217144
Jobcards, ST	23.7	217144
Jobcards, SC	26.4	217144
Jobcards, non-SC/ST	26.1	217144
Worked HH	21.6	217144
Worked HH, ST	26.7	217144
Worked HH, SC	27.1	217144
Worked HH, non-SC/ST	31.7	217144
Workdays	24.0	217144
Workdays, ST	28.0	217144
Workdays, SC	25.9	217144
Workdays, Other	36.0	217144
Workdays, Women	21.6	217144
Workdays, Men	23.9	217144
Jobcards (non-logged)	22.9	217144
Jobcards, ST (non-logged)	20.9	217144
Jobcards, SC (non-logged)	28.0	217144
Jobcards, non-SC/ST (non-logged)	23.7	217144
Worked HH (non-logged)	21.9	217144
Worked HH, ST (non-logged)	24.7	217144
Worked HH, SC (non-logged)	22.8	217144
Worked HH, non-SC/ST (non-logged)	20.6	217144
Workdays (non-logged)	23.5	217144
Workdays, ST (non-logged)	26.3	217144
Workdays, SC (non-logged)	19.2	217144
Workdays, non-SC/ST (non-logged)	26.3	217144
Workdays, Women (non-logged)	24.6	217144
Workdays, Men (non-logged)	20.8	217144

Notes: This table presents optimal bandwidths by outcome variable. We include a geographic control function. Optimal bandwidths are calculated using the Stata package rdrobust (Calonico and Titiunik, 2017). The reported bandwidth is the "MSE optimal point estimation using a common bandwidth on both sides of the cutoff" (Calonico and Titiunik (2017), p. 400). The estimation uses regularization methods, following Imbens and Kalyanaraman (2012).

D.7 Gender NREGS Results

Table A19: **The Effect of Scheduled Areas on NREGS by Gender (OLS)**

	(1) Total	(2) Women	(3) Men
Scheduled Areas	0.140***	0.166***	0.166***
	(0.022)	(0.023)	(0.021)
Control Mean (Unlogged)	8660.401	4363.856	4296.546
# GPs	72521	72521	72521
# Villages	207221	207221	207221
H_0: $\gamma(2)$ - $\gamma(3)$ 0			$p < 0.98$

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village shares, and state fixed effects.

Table A20: **The Effect of Scheduled Areas on NREGS by Gender (10 km RD)**

	(1) Total	(2) Women	(3) Men
Scheduled Areas	-0.010	0.016	0.009
	(0.035)	(0.036)	(0.034)
Control Mean (Unlogged)	9748.164	4032.491	5715.673
# GPs	13338	13338	13338
# Villages	32641	32641	32641
H_0: $\gamma(2)$ - $\gamma(3)$ 0			p 0.707

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$.
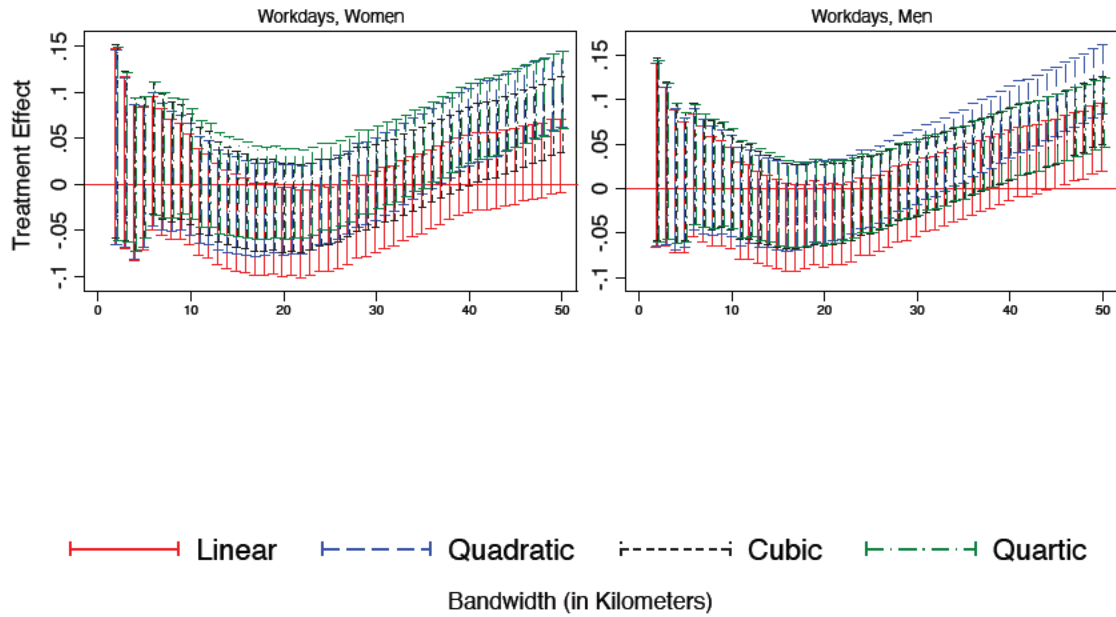
Figure A11: **RD Results by Bandwidth**

Notes: We plot the effect of Scheduled Areas on workdays for women and men at different kilometer band widths and with 90% confidence intervals.

D.8 PMGSY Effects: RD Sample Only

Figure A12: The Effect of the introduction of PESA election on PMGSY Roads (RD Sample)
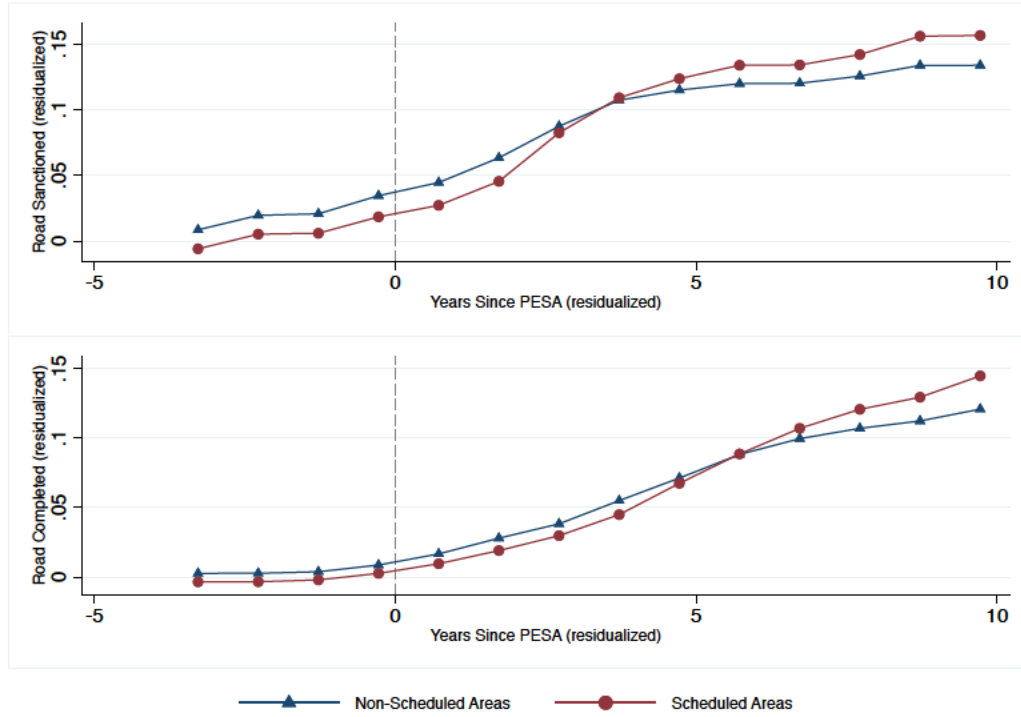
Notes: This figure plots binned means of completed PMGSY roads by Scheduled Area status on a dataset of villages in our RD sample that is residualized for village fixed effects.

D.9 State by State Analysis

Table A21: **Effects on Logged Jobcards (State by State, 10 km RD)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Sch × Andhra Pradesh	0.036	0.455***	-0.675***	-0.876***
	(0.041)	(0.129)	(0.119)	(0.159)
Sch × Chattisgarh	-0.042	0.070	0.062	0.052
	(0.027)	(0.054)	(0.081)	(0.049)
Sch × Gujrat	0.151***	0.495***	-0.148**	-0.118*
	(0.044)	(0.065)	(0.075)	(0.067)
Sch × Himachal Pradesh	-0.522***	0.923***	0.514	-2.905***
	(0.108)	(0.310)	(0.382)	(0.318)
Sch × Jharkhand	0.059***	0.500***	-0.254***	-0.019
	(0.022)	(0.075)	(0.090)	(0.050)
Sch × Maharashtra	-0.159***	0.018	0.018	0.034
	(0.031)	(0.058)	(0.056)	(0.048)
Sch × Madhya Pradesh	-0.057*	-0.116**	0.275***	-0.075*
	(0.031)	(0.045)	(0.057)	(0.042)
Sch × Odisha	0.079**	0.432***	-0.261**	-0.141*
	(0.032)	(0.069)	(0.103)	(0.075)
Sch × Rajasthan	0.136***	0.227*	0.046	0.146
	(0.040)	(0.129)	(0.198)	(0.128)
Controls Unlogged Means:				
Andhra Pradesh	787.9	243.1	145.1	399.6
Chattisgarh	423.5	173.6	30.6	219.4
Gujrat	384.4	212.2	22.6	149.6
Himachal Pradesh	399.1	54.9	90.1	254.1
Jharkhand	985.9	283.5	120.6	581.8
Maharashtra	322.6	125.5	22.6	174.5
Madhya Pradesh	504.8	201.8	95.3	207.7
Odisha	1,107.7	459.6	195.4	452.6
Rajasthan	1,015.7	659.6	37.7	318.4
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Model is run without a constant. The interaction terms reflect the differences from mean control values of outcome in each state. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$.

Table A22: **Effects on Logged Worked HH (State by State, 10 km RD)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Sch × Andhra Pradesh	0.148**	0.473***	-0.560***	-0.731***
	(0.059)	(0.121)	(0.139)	(0.169)
Sch × Chattisgarh	-0.032	0.161**	0.063	0.049
	(0.049)	(0.063)	(0.087)	(0.071)
Sch × Gujrat	0.013	0.140	-0.139**	-0.106
	(0.096)	(0.087)	(0.054)	(0.082)
Sch × Himachal Pradesh	-0.797***	1.002***	0.042	-3.115***
	(0.165)	(0.335)	(0.436)	(0.332)
Sch × Jharkhand	-0.035	0.521***	-0.447***	-0.196***
	(0.051)	(0.100)	(0.100)	(0.069)
Sch × Maharashtra	-0.305***	-0.152***	-0.086**	-0.092
	(0.065)	(0.058)	(0.042)	(0.062)
Sch × Madhya Pradesh	-0.017	-0.049	0.344***	-0.086**
	(0.031)	(0.047)	(0.057)	(0.043)
Sch × Odisha	0.289***	0.595***	-0.115	0.072
	(0.052)	(0.082)	(0.108)	(0.107)
Sch × Rajasthan	0.679***	0.789***	0.712***	0.888***
	(0.077)	(0.134)	(0.187)	(0.157)
Controls Unlogged Means:				
Andhra Pradesh	336.5	117.1	54.4	165.0
Chattisgarh	292.4	120.7	19.2	152.5
Gujrat	68.9	38.0	4.0	26.9
Himachal Pradesh	243.4	29.1	52.5	161.8
Jharkhand	345.1	105.2	41.7	198.2
Maharashtra	66.6	28.6	4.9	33.1
Madhya Pradesh	189.6	90.3	33.9	65.4
Odisha	327.1	160.3	52.9	114.0
Rajasthan	427.9	334.8	10.5	82.6
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Model is run without a constant. The interaction terms reflect the differences from mean control values of outcome in each state. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$.

Table A23: **Effects on Logged Workdays (State by State, 10 km RD)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Sch × Andhra Pradesh	0.257***	0.648***	-1.146***	-1.032***
	(0.087)	(0.200)	(0.265)	(0.287)
Sch × Chattisgarh	0.037	0.193**	0.328**	0.183*
	(0.080)	(0.094)	(0.159)	(0.102)
Sch × Gujrat	-0.077	0.353**	-0.300**	-0.322**
	(0.159)	(0.152)	(0.130)	(0.155)
Sch × Himachal Pradesh	-1.057***	1.352**	0.020	-4.299***
	(0.233)	(0.557)	(0.845)	(0.705)
Sch × Jharkhand	-0.129*	0.506***	-0.580***	-0.243***
	(0.070)	(0.147)	(0.165)	(0.090)
Sch × Maharashtra	-0.419***	-0.227**	-0.170*	-0.072
	(0.110)	(0.111)	(0.093)	(0.115)
Sch × Madhya Pradesh	-0.044	-0.101	0.537***	-0.166**
	(0.049)	(0.070)	(0.090)	(0.068)
Sch × Odisha	0.336***	0.650***	-0.055	0.088
	(0.070)	(0.115)	(0.156)	(0.134)
Sch × Rajasthan	1.257***	1.416***	1.638***	1.659***
	(0.099)	(0.193)	(0.350)	(0.194)
Controls Unlogged Means:				
Andhra Pradesh	18,880.4	6,895.1	2,758.4	9,226.9
Chattisgarh	16,805.7	7,561.1	982.5	8,262.1
Gujrat	2,787.2	1,516.3	161.7	1,109.2
Himachal Pradesh	13,872.1	1,359.6	2,865.9	9,646.7
Jharkhand	15,580.7	4,548.1	1,826.7	9,206.0
Maharashtra	2,845.9	1,225.5	211.8	1,408.6
Madhya Pradesh	7,601.9	3,655.2	1,321.9	2,624.7
Odisha	13,749.2	6,829.8	2,156.7	4,762.7
Rajasthan	16,459.8	12,972.7	420.1	3,067.0
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Model is run without a constant. The interaction terms reflect the differences from mean control values of outcome in each state. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$.

D.10 Conley Standard Errors

Table A24: **Replication of Table 2 Main Effects with Conley SEs (10 km RD)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Panel A: Jobcards				
Scheduled Areas	0.000	0.207***	-0.038	-0.098***
	(0.017)	(0.037)	(0.039)	(0.031)
Panel B: Households Worked				
Scheduled Areas	0.009	0.203***	-0.017	-0.086**
	(0.034)	(0.042)	(0.040)	(0.039)
Panel C: Workdays				
Scheduled Areas	-0.010	0.241***	0.009	-0.125**
	(0.054)	(0.065)	(0.066)	(0.062)

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. We report Conley (1999) standard errors in parentheses. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$.

D.11 District-level Muslim Rural Population Controls

Table A25: **Replication of Table 2 Main Effects on Jobcards (10 km RD)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Panel A: Rural Muslim Population Controls				
Scheduled Areas	-0.011	0.203***	-0.037	-0.120***
	(0.014)	(0.025)	(0.032)	(0.024)
Control Mean (Unlogged)	652.979	259.373	92.768	300.838
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel B: Including Squared Population Term				
Scheduled Areas	-0.011	0.202***	-0.035	-0.120***
	(0.014)	(0.025)	(0.032)	(0.024)
Control Mean (Unlogged)	652.979	259.373	92.768	300.838
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel C: Controlling for Population Terciles				
Scheduled Areas	-0.001	0.206***	-0.035	-0.100***
	(0.014)	(0.025)	(0.031)	(0.024)
Control Mean (Unlogged)	652.979	259.373	92.768	300.838
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$. This table shows that results are robust to controlling for rural Muslim district level population in different forms.

Table A26: **Replication of Table 2 Main Effects on Worked HH (10 km RD)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Panel A: Rural Muslim Population Controls				
Scheduled Areas	-0.020	0.179***	-0.020	-0.112***
	(0.023)	(0.029)	(0.031)	(0.030)
Control Mean (Unlogged)	220.579	98.339	29.806	92.435
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel B: Including Squared Population Term				
Scheduled Areas	-0.024	0.175***	-0.020	-0.115***
	(0.023)	(0.029)	(0.031)	(0.030)
Control Mean (Unlogged)	220.579	98.339	29.806	92.435
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel C: Controlling for Population Terciles				
Scheduled Areas	0.006	0.202***	-0.016	-0.090***
	(0.023)	(0.029)	(0.032)	(0.029)
Control Mean (Unlogged)	220.579	98.339	29.806	92.435
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$. This table shows that results are robust to controlling for rural Muslim district level population in different forms.

Table A27: **Replication of Table 2 Main Effects on Workdays (10 km RD)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Panel A: Rural Muslim Population Controls				
Scheduled Areas	-0.056	0.198***	-0.006	-0.167***
	(0.036)	(0.046)	(0.053)	(0.046)
Control Mean (Unlogged)	9748.164	4306.585	1259.986	4181.593
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel B: Including Squared Population Term				
Scheduled Areas	-0.062*	0.192***	-0.007	-0.172***
	(0.036)	(0.045)	(0.053)	(0.046)
Control Mean (Unlogged)	9748.164	4306.585	1259.986	4181.593
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel C: Controlling for Population Terciles				
Scheduled Areas	-0.015	0.237***	0.010	-0.130***
	(0.035)	(0.046)	(0.053)	(0.045)
Control Mean (Unlogged)	9748.164	4306.585	1259.986	4181.593
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$. This table shows that results are robust to controlling for rural Muslim district level population in different forms.

E   Additional Results and Robustness of Electoral Mechanism

E.1   PESA Elections

Table A28: **The Effect of Scheduled Areas on NREGS by Number of PESA Elections (10 km RD)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Panel A: Jobcards				
Sch Areas × 1 PESA Election	0.062***	0.505***	-0.260***	-0.015
	(0.022)	(0.076)	(0.090)	(0.050)
Sch Areas × 2 PESA Elections	-0.100***	0.108**	-0.096**	-0.123***
	(0.021)	(0.045)	(0.045)	(0.044)
Sch Areas × 3 PESA Elections	0.028	0.175***	0.042	-0.109***
	(0.020)	(0.032)	(0.043)	(0.032)
Control Mean (Unlogged)	652.979	259.373	92.768	300.838
Panel B: Worked HH				
Sch Areas × 1 PESA Election	-0.030	0.527***	-0.451***	-0.189***
	(0.051)	(0.100)	(0.100)	(0.069)
Sch Areas × 2 PESA Elections	-0.170***	0.022	-0.141***	-0.176***
	(0.043)	(0.045)	(0.041)	(0.052)
Sch Areas × 3 PESA Elections	0.095***	0.201***	0.144***	-0.022
	(0.029)	(0.037)	(0.042)	(0.039)
Control Mean (Unlogged)	220.579	98.339	29.806	92.435
Panel C: Workdays				
Sch Areas × 1 PESA Election	-0.122*	0.514***	-0.586***	-0.232***
	(0.070)	(0.147)	(0.165)	(0.090)
Sch Areas × 2 PESA Elections	-0.208***	0.014	-0.244***	-0.190**
	(0.072)	(0.081)	(0.084)	(0.092)
Sch Areas × 3 PESA Elections	0.103**	0.269***	0.264***	-0.071
	(0.046)	(0.057)	(0.068)	(0.059)
Control Mean (Unlogged)	9748.164	4306.585	1259.986	4181.593
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$.

E.2 ST Plurality Information

Table A29 shows the broad coverage of the data in terms of ST plurality status and being declared a Scheduled Area.

Table A29: **Number of Villages (and Gram Panchayats) and ST Share**

Panel A: Number of Observations		
	Scheduled Areas	Non-Scheduled Areas
ST Plurality	8,686 (3,786)	8,954 (4,096)
ST Non-Plurality	5,580 (3,371)	9,421 (5,358)
Panel B: Average ST Share		
	Scheduled Areas	Non-Scheduled Areas
ST Plurality	0.85	0.83
ST Non-Plurality	0.16	0.13

Table A30: **Treatment Effects by ST Majority (10 km RD)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Panel A: Jobcards				
Scheduled Areas	0.006	0.034	-0.055	-0.074**
	(0.018)	(0.031)	(0.046)	(0.036)
ST Non-Majority	0.008	0.235***	-0.059	-0.102***
	(0.021)	(0.039)	(0.043)	(0.035)
Scheduled × ST Non-Majority	-0.012	0.373***	0.037	-0.053
	(0.022)	(0.044)	(0.049)	(0.040)
Control Mean (Unlogged)	652.979	259.373	92.768	300.838
Panel B: Worked HH				
Scheduled Areas	0.007	0.058	0.002	-0.060
	(0.028)	(0.037)	(0.044)	(0.040)
ST Non-Majority	-0.060	0.115**	-0.066	-0.172***
	(0.037)	(0.045)	(0.042)	(0.043)
Scheduled × ST Non-Majority	0.005	0.314***	-0.039	-0.055
	(0.037)	(0.048)	(0.047)	(0.046)
Control Mean (Unlogged)	220.579	98.339	29.806	92.435
Panel C: Workdays				
Scheduled Areas	0.011	0.051	0.056	-0.074
	(0.044)	(0.054)	(0.074)	(0.061)
ST Non-Majority	-0.083	0.265***	-0.133*	-0.270***
	(0.062)	(0.073)	(0.075)	(0.069)
Scheduled × ST Non-Majority	-0.045	0.408***	-0.101	-0.109
	(0.059)	(0.077)	(0.082)	(0.072)
Control Mean (Unlogged)	9748.164	4306.585	1259.986	4181.593
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$. ST Non Majority defined as less than 50% of the village population share.

E.3 AC-level Reservations

Table A31: **Controlling for ST Quota in Assembly Constituency (10 km RD)**

	(1) Total	(2) ST	(3) SC	(4) Non-SC/ST
Panel A: Job Cards				
Scheduled Areas	-0.020	0.136***	-0.031	-0.087***
	(0.014)	(0.025)	(0.032)	(0.024)
AC Reserved, ST	0.194***	0.673***	-0.065*	-0.109***
	(0.014)	(0.027)	(0.035)	(0.026)
Control Mean (Unlogged)	652.979	259.373	92.768	300.838
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel B: Households Worked				
Scheduled Areas	-0.034	0.128***	-0.024	-0.093***
	(0.023)	(0.030)	(0.032)	(0.030)
AC Reserved, ST	0.413***	0.719***	0.069**	0.067*
	(0.025)	(0.031)	(0.035)	(0.034)
Control Mean (Unlogged)	220.579	98.339	29.806	92.435
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel C: Workdays				
Scheduled Areas	-0.070**	0.129***	-0.002	-0.139***
	(0.035)	(0.046)	(0.054)	(0.046)
AC Reserved, ST	0.582***	1.071***	0.111*	0.135***
	(0.038)	(0.048)	(0.058)	(0.050)
Control Mean (Unlogged)	9748.164	4306.585	1259.986	4181.593
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$.

Table A32: **Assembly Constituency SC Reservation Analysis (10 km RD)**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Panel A: Jobcards				
Scheduled Areas	-0.008	0.183***	-0.019	-0.108***
	(0.014)	(0.026)	(0.032)	(0.025)
AC Reserved, SC	-0.103***	-0.293***	0.151**	-0.119***
	(0.026)	(0.067)	(0.063)	(0.037)
Scheduled X AC Reserved, SC	0.128**	0.329***	-0.420***	0.136
	(0.054)	(0.120)	(0.155)	(0.116)
Control Mean (Unlogged)	652.979	259.373	92.768	300.838
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel B: Households Worked				
Scheduled Areas	-0.001	0.192***	0.002	-0.098***
	(0.023)	(0.030)	(0.032)	(0.030)
AC Reserved, SC	-0.154***	-0.230***	0.174**	-0.157**
	(0.058)	(0.080)	(0.081)	(0.064)
Scheduled X AC Reserved, SC	0.081	0.019	-0.353**	0.150
	(0.105)	(0.145)	(0.176)	(0.165)
Control Mean (Unlogged)	220.579	98.339	29.806	92.435
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel C: Workdays				
Scheduled Areas	-0.029	0.222***	0.028	-0.147***
	(0.036)	(0.047)	(0.054)	(0.046)
AC Reserved, SC	-0.278***	-0.380***	0.166	-0.298***
	(0.090)	(0.128)	(0.128)	(0.098)
Scheduled X AC Reserved, SC	0.199	0.003	-0.386	0.270
	(0.149)	(0.222)	(0.285)	(0.222)
Control Mean (Unlogged)	9748.164	4306.585	1259.986	4181.593
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$.

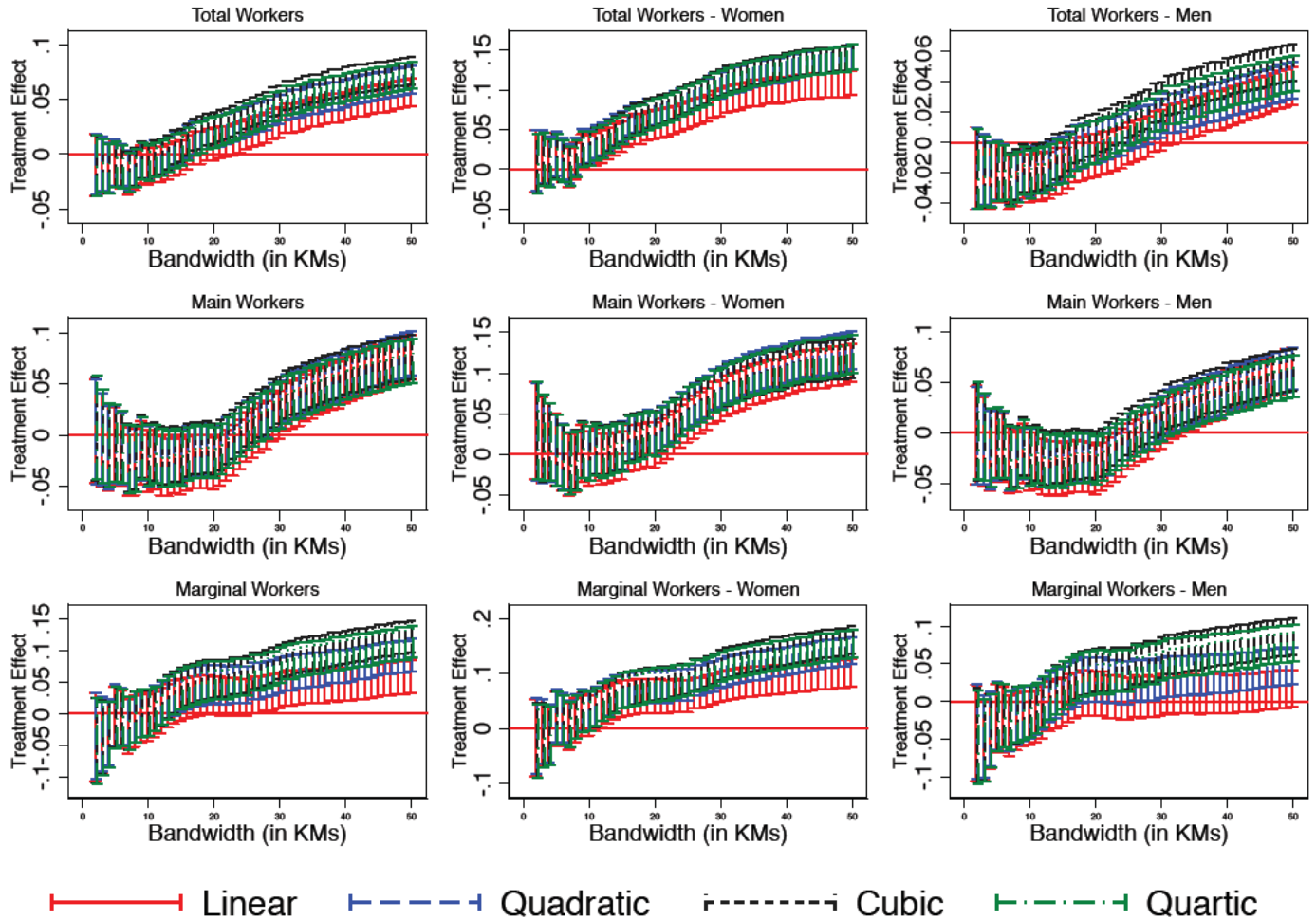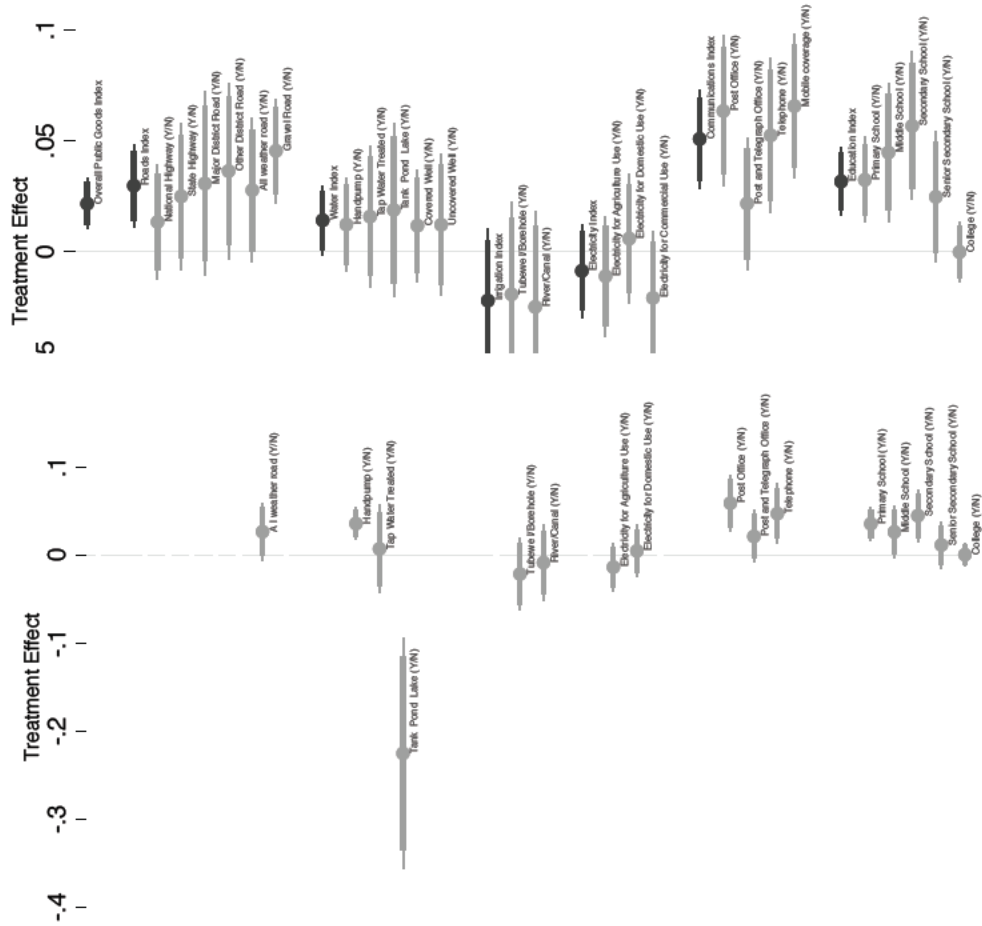## E.4 Robustness of Employment Effects: Census 2011

Figure A13: **The Effect of Scheduled Areas on Employment (Census 2011).** This figure plots results from a Geographic RD model with various control functions in latitudes and longitudes, as well as bandwidth. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion and state fixed effects. Main workers are those employed more than 183 years in the previous year, while Marginal Workers are those employed less than 183 days.

E.5 Effects on Public Goods: 2011 Census

E.5.1 Controlling for Baseline Values

Figure A14: **The Effect of Scheduled Areas on Public Goods (Census 2011).**

Notes: Bottom panel replicates top panel results controlling for 2001 baseline values (subject to data availability).
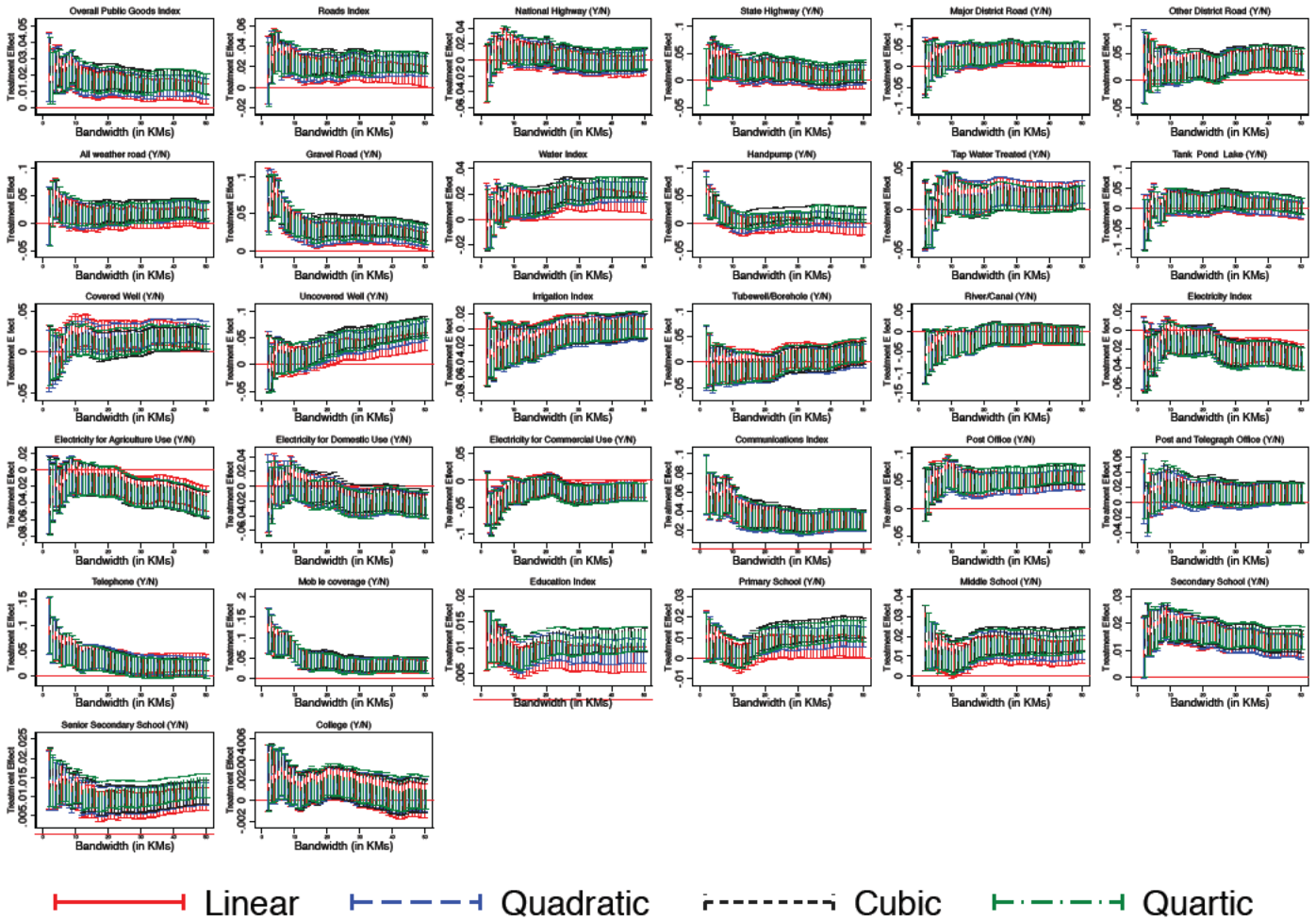
Figure A15: **The Effect of Scheduled Areas on Public Goods (Census 2011).** This figure plots results from a Geographic RD model with a cubic control function in latitudes and longitudes, and a 10 km bandwidth as discussed in the text. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion and state fixed effects.

E.5.2 Regression Analyses

Table A33: **Effects on Roads (10 km RD, Census 2011)**

	(1) Roads Index	(2) National Highway	(3) State Highway	(4) Major District	(5) Other District	(6) All Weather	(7) Gravel
Scheduled Areas	0.030***	0.013	0.025	0.031	0.036*	0.028*	0.045***
	(0.009)	(0.013)	(0.017)	(0.021)	(0.020)	(0.017)	(0.012)
Control Mean	0.487	0.084	0.179	0.392	0.615	0.782	0.868
# GPs	2223	2223	2223	2223	2223	2223	2223
# Villages	2749	2749	2749	2749	2749	2749	2749

Notes: $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$. The index in the first column is a standardized mean of the other variables.

Table A34: **Effects on Water (10 km RD, Census 2011)**

	(1) Water Index	(2) Hand Pump	(3) Tap Water Treated	(4) Tank/Pond /Lake	(5) Covered Well	(6) Uncovered Well
Scheduled Areas	0.014*	0.012	0.016	0.019	0.012	0.012
	(0.008)	(0.011)	(0.016)	(0.020)	(0.013)	(0.016)
Control Mean	0.529	0.890	0.302	0.492	0.165	0.794
# GPs	2223	2223	2223	2223	2223	2223
# Villages	2749	2749	2749	2749	2749	2749

Notes: $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$. The index in the first column is a standardized mean of the other variables.

Table A35: **Effects on Irrigation (10 km RD, Census 2011)**

	(1) Irrigation Index	(2) Tube-well/ Borehole	(3) River/ Canal
Scheduled Areas	-0.022	-0.020	-0.025
	(0.016)	(0.021)	(0.022)
Control Mean	0.390	0.415	0.365
# GPs	2223	2223	2223
# Villages	2749	2749	2749

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$. The index in the first column is a standardized mean of the other variables.

Table A36: **Effects on Electricity (10 km RD, Census 2011)**

	(1) Electricity Index	(2) Agri Use	(3) Domestic Use	(4) Commercial Use
Scheduled Areas	-0.009	-0.011	0.006	-0.021
	(0.011)	(0.014)	(0.015)	(0.015)
Control Mean	0.699	0.673	0.850	0.574
# GPs	2223	2223	2223	2223
# Villages	2749	2749	2749	2749

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$. The index in the first column is a standardized mean of the other variables.

Table A37: **Effects on Communications (10 km RD, Census 2011)**

	(1) Communications Index	(2) Post- Office	(3) Post/Telegraph Office	(4) Telephone	(5) Mobile Coverage
Scheduled Areas	0.051***	0.063***	0.021	0.052***	0.066***
	(0.011)	(0.017)	(0.015)	(0.018)	(0.017)
Control Mean	0.460	0.326	0.238	0.528	0.748
# GPs	2223	2223	2223	2223	2223
# Villages	2749	2749	2749	2749	2749

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$. The index in the first column is a standardized mean of the other variables.

Table A38: **Effects on Education (10 km RD, Shrug Census 2011)**

	(1) Education Index	(2) Primary School	(3) Middle School	(4) Secondary School	(5) Senior Sec School	(6) College
Scheduled Areas	0.031***	0.032***	0.045***	0.057***	0.025	-0.000
	(0.008)	(0.010)	(0.016)	(0.017)	(0.015)	(0.007)
Control Mean	0.475	0.901	0.744	0.450	0.246	0.032
# GPs	2223	2223	2223	2223	2223	2223
# Villages	2749	2749	2749	2749	2749	2749

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2 y + xy^2$. The index in the first column is a standardized mean of the other variables.

F   Alternative Explanations

F.1   Data Manipulation and Collusion

One concern with the results is that that politicians can steal funds earmarked for NREGS by convincing bureaucrats to report workdays for "ghost workers" who only exist on paper Bhatia and Dreze (2006). Importantly, the concern for the present paper is that this tendency might exist differentially more for Scheduled Areas. One validated way to measure manipulation of official data is to consider the distribution of digits in that data. The idea is that the distribution in naturally-occurring data should follow certain patterns, such as the well known Benford's law. These procedures have been adopted to study, for instance, the presence of fraud and electoral manipulation (Beber and Scacco (2012)).

For our purposes, what matters less is whether there exists fraud in NREGS data   many accounts say that there is   but, whether fraud is more or less likely to exist in Scheduled Areas. Thus, we focus not on how far the official data reported is from the "correct" distribution of numbers, but rather on whether the distribution of digits varies significantly between Scheduled and non-Scheduled Areas. This approach is particularly desirable because detecting data manipulation does not demand that we rely on further human-generated audit data.

To conduct our analysis, we consider if the deposits data in NREGS is more likely to end with a 0 in Scheduled Areas than in non-Scheduled Areas.[40] Deposits end in 0 in approximately 21% of official data in non-Scheduled Areas, but we do not find that this percentage differs across non-Scheduled and Scheduled Areas, allaying potential concerns about differential data manipulation.

As a secondary test, in Appendix Table A40, we evaluate whether the ratio of workdays to deposits varies by Scheduled Areas (column 1). We find a negligible 2 percentage point

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[40]Previous work has shown that the distribution of manipulated data often bunches at 0 (Best et al. (2015)).

difference (relative to a control mean of 81.8 percent). In column 2, we also test if deposits data are missing differently by treatment and do not find evidence that this is the case.

Table A39: **Random Digit Test**

| | (1) |
	Amount Disbursed Ending in 0
Scheduled Areas	0.011
	(0.009)
Control Mean (Unlogged)	0.216
# GPs	13338
# Villages	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Outcome is whether the deposit data in NREGS ends in 0. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$.

Table A40: **Missingness in Deposits**

| | (1) | (2) |
| | Workdays to Disbursements | Missing Obs in |
	Ratio	Disbursments
Scheduled Areas	-0.020***	-0.004
	(0.004)	(0.004)
Control Mean	0.818	0.133
# GPs	11142	13338
# Villages	28616	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$.

F.2 Distance from the Center

Scheduled Areas are more rural and may be less reliant on centralized government than non-Scheduled Areas. Because NREGS implementation is primarily determined at the local level, differences in reliance on centralized government — rather than quotas — may be driving our observed effects. To evaluate this possibility, we control for each village's distance to the most populous area in our data and find in Table A41 that our results are unchanged.

Table A41: **The Effect of Scheduled Areas on NREGS (10 km RD), Controlling for Distance from Block Center**

	(1) Total	(2) STs	(3) SCs	(4) Non-SCs/STs
Panel A: Jobcards				
Scheduled Areas	-0.001	0.197***	-0.039	-0.100***
	(0.014)	(0.025)	(0.032)	(0.024)
Control Mean (Unlogged)	652.979	259.373	92.768	300.838
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel B: Households Worked				
Scheduled Areas	0.010	0.196***	-0.014	-0.083***
	(0.023)	(0.029)	(0.032)	(0.030)
Control Mean (Unlogged)	220.579	98.339	29.806	92.435
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641
Panel C: Workdays				
Scheduled Areas	-0.006	0.232***	0.014	-0.119***
	(0.036)	(0.046)	(0.053)	(0.045)
Control Mean (Unlogged)	9748.164	4306.585	1259.986	4181.593
# GPs	13338	13338	13338	13338
# Villages	32641	32641	32641	32641

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors are clustered at the gram panchayat (GP) level. Controls include all baseline indices, ST and SC village proportion, state fixed effects, and a flexible function in village centroid longitudes (x) and latitudes (y) of the form: $x + y + x^2 + y^2 + xy + x^3 + y^3 + x^2y + xy^2$. Finally, these regressions also control for each village's distance from its block's most populous village.

G Constructing Census Indices

Due to the large number of variables found in the 2001 Indian census (203 total variables across the Socio-Demographic module and the Infrastructure module), we decided to combine the individual census variables into indices. Where possible, we generated these indices using the Indian Census' variable groupings - for instance, the Education Index combines 10 variables listed in the census in a group which all refer to different measures of school and college facilities. However, we note that the titles we assign to indices — for example, "Banking Index", should be taken as suggestive. Each index is constructed according to the following steps and following: first, we standardize and center each constituent variable. Second, we assign missing variable values the treatment group mean if at least one index component is non-missing for that observation. Third, we standardize each variable to the control group mean and standard deviation. Fourth, we take as our index value the average of all the constituent variable values (Kling, Liebman and Katz, 2007).

We list each census' variable included in each index below. Note while the vast majority of census variables are binary or counts, additional variables provide additional qualitative information when village data was unavailable (known as 'range codes') — we omit these non-numerical variables for simplicity.

We also present analyses using 2011 Census data in Table 3, in Figures 4, A13, and A15, and in Appendix E.5. The data at our disposal for the 2011 Census did not always match exactly the data for the 2001 Census. Accordingly, below, we note which variables we had for which Censuses, as well as the cases when it was necessary to recode variables (typically, to be binary) so that we could match data across the two Censuses.

Socio-Demographic and Economic Module of 2001 Census, and 2011 Indian Census

Key:

*   In data for 2001 Census only, **   In data for 2011 Census only.

- Population Index

    TOT_NM_HH - Total number of households

    TOT_POP - Total population

    M_POP - Male population

    F_POP - Female population

- Vulnerability Index

    TOT_L6 - Total pop below 6 years

    F_L6 - Female pop below 6 years

    TOT_ILLT - Total Illiterates

    F_ILLT - Female Illiterates

    TOT_NNW - Total Non-workers

    F_NNW - Female Non-workers

- Minority Index

    TOT_SC - Total scheduled caste

    M_SC - Male scheduled caste

    F_SC - Female scheduled caste

    TOT_ST - Total scheduled tribe

    M_ST - Male scheduled tribe

    F_ST - Female scheduled tribe

- Agricultural Worker Index

    TOT_CULT - Total Cultivators

    M_CULT - Male Cultivators

F_CULT - Female Cultivators

TOT_AGLB - Total Agricultural Labourers

M_AGLB - Male Agricultural Labourers

F_AGLB - Female Agricultural Labourers

T_MRG_CULT - Total Marginal workers as cultivators

M_MRG_CULT - Male Marginal workers as cultivators

F_MRG_CULT - Female Marginal workers as cultivators

T_MRG_AGLB - Total Marginal workers as agricultural labourers

M_MRG_AGLB - Male Marginal workers as agricultural labourers

F_MRG_AGLB - Female Marginal workers as agricultural labourers

- Non-Agricultural Worker Index

    TOT_MFHH - Total Household industry workers

    M_MFHH - Male Household industry workers

    F_MFHH - Female Household industry workers

    TOT_OTH_W - Total other workers

    M_OTH_W - Male other workers

    F_OTH_W - Female other workers

    T_MRG_HH - Total Marginal workers household industry workers

    M_MRG_HH - Male Marginal workers household industry workers

    F_MRG_HH - Female Marginal workers household industry workers

    T_MRG_OTH - Total Marginal workers as other workers

    M_MRG_OTH - Male Marginal workers as other workers

    F_MRG_OTH - Female Marginal workers as other workers

- Marginal Worker Index

    TOT_MRW - Total Marginal workers other workers

    M_MRW - Male Marginal workers other workers

    F_MRW - Female Marginal workers other workers

Infrastructure and Amenities Module of 2001 Indian Census, and Market Villages Data for 2011 Census

- Education Index*

    EDU_FAC - Educational facilities (binary)*

    P_SCH - Number of Primary School*

    M_SCH - Number of Senior Secondary School*

    S_SCH - Number of Secondary School*

    S_S_SCH - Number of Senior Secondary School*

    COLLEGE - Number of Collage*

    IND_SCH - Number of Industrial School*

    TR_SCH - Number of Training School*

    ADLT_LT_CT - Number of Adult literacy Class/Centre*

    OTH_SCH - Number of Other educational facilities*

- Medical Facilities Index*

    MEDI_FAC - Medical facilities (binary)*

    ALL_HOSP - Allopathic hospital, Maternity and Child Welfare Centre and Primary Health Centre*

    AYU_HOSP - Number of Allopathic Hospital*

UN_HOSP - Number of Unani Hospital*

HOM_HOSP - Number of Homeopathic Hospital*

ALL_DISP - Number of Allopathic Dispensary*

AYU_DISP - Number of Ayurvedic Dispensary*

UN_DISP - Number of Unani Dispensary*

HOM_DISP - Number of Homeopathic Dispensary*

MCW_CNTR - Number of Maternity and Child Welfare Centre*

M_HOME - Number of Maternity Home*

CWC - Number of Child Welfare Centre Number of Health Centre*

H_CNTR - Number of Health Centre*

PH_CNTR - Number of Primary Health Centre*

PHS_CNT - Number of Primary Health Sub Centre*

FWC_CNTR - Number of Family Welfare Centre Number of T.B. Clinic*

TB_CLN - Number of T.B. Clinic*

N_HOME - Number of Nursing Home*

RMP - Number of Registered Private Medical Practitioners*

SMP - Number of Subsidized Medical Practitioners*

CHW - Number of Community Health workers*

OTH_CNTR - Number of Other medical facilities*

- Water Index

  HDP_ST - Hand Pump (HP)

  SPR_ST - Spring (S)

  TPL_ST - Tank/Pond/Lake

TWT_ST - Tap Water (Treated)

TUBEWELL - Tubewell Water (TW)

WELL - Well Water (W) (2011 covered/uncovered well variables combined)

DRNK_WAT_F - Drinking Water facility (binary)*

RIVER - River Water(R)*

OTHER - Other drinking water sources (O)*

TANK - Tank Water (TK)*

TWU_ST - Tap Water (Untreated) **

WAT_BOM - Water Bounded Macadam**

- Communications Index

    BS_FAC - Bus services (2011 Census private/public bus services variables combined)

    NAV_WRC - Navigable water way including River, Canal etc. (2001 recoded to Y/N)

    PO_ST - Number of Post Office (2001 recoded to Y/N)

    PT_OF_ST - Number of Post and Telegraph Office (2001 recoded to Y/N)

    RS_FAC - Railways services

    TEL_ST - Number of Telephone connections (2001 recoded to Y/N)

    COMM_FAC - Communication*

    P_T_FAC - Post, Telegraph and Telephone facilities (binary)*

    TELE_OFF - Number of Telegraph Office*

    AUT_MODA - Auto/Modified Autos**

    INC_CSC - Internet Cafes / Common Service Centre (CSC)**

MOB_PH_CV - Mobile Phone Coverage**

RAIL_STAT - Railway Station**

SRF_SERV - Sea/River/Ferry Service**

SPO_ST - Sub Post Office**

VANS_ST - Vans**

- Banking Index

AGRI_CRSO - Number of Agricultural Credit Societies (2001 recoded to Y/N)

COOP_BANK - Number of Agricultural Credit Societies (2001 recoded to Y/N)

ST_AU_FAC - Number of Stadium/Auditorium

BANK_FAC - Banking facility (binary)*

COMM_BANK - Number of Cooperative Commercial Banks*

CRSOC_FAC - Credit Societies (Y/N)*

C_V_HALL - Number of Cinema/Video-hall*

NAC_SOC - Number of Non Agricultural Credit Societies*

OTHER_SOC - Number of Other Credit Societies*

RC_FAC - Recreational and Cultural facilities (binary)*

SP_CL_FAC - Number of Sports Club*

ATM_ST - ATM**

- Road Index

ALL_WE_RD - Approach - Paved (all weather) Road (2001 recoded to Y/N)

APP_FP - Approach - Foot Path*

APP_MR - Approach - Mud Road*

APP_NAVCAN - Approach - Navigable Canal*

APP_NAVRIV - Approach - Navigable River*

APP_NW - Approach - Navigable water-way other than river or Canal*

GRA_KU_RD - Gravel (kuchha) Roads**

NH_ST - National Highway**

MDR_ST - Major District Road**

OTH_DR - Other District Road**

SH_ST - State Highway**

- Urbanization Index

POW_SAU - Electricity of Agricultural use (2001 recoded to Y/N)

POW_SDU - Electricity for Domestic use (2001 recoded to Y/N)

PAP_MAG - Newspaper/Magazine (binary)*

POWER_ALL - Electricity for all purposes*

POWER_OTH - Electricity of other purposes*

POWER_SUPL - Power supply (binary)*

A_INCEXP - Separate figures available (Y/N). If Yes:*

TOT_EXP - Total Expenditure*

TOT_INC - Total Income*

POW_SCU - Power Supply For Commercial Use**

- Irrigation Index

RIC_ST - River/Canal (2001 canal, river variables combined, recoded to Y/N)

TWB_ST - Tube well/borehole (2001 tubewell variables combined, recoded to Y/N)

CULT_WASTE - Culturable waste (including gauchar and groves)*

LAND_FORES - Forest Irrigated (by source)*

LAKE_IRR - Lake*

TANK_IRR - Tank*

OTH_IRR - Others [Water source]*

W_FALL - Waterfall*

WELL_WO_EL - Well (without electricity)*

WELL_W_EL - Well (with electricity)*

TOT_IRR - Total Irrigated Area*

UN_IRR - Unirrigated Area*

AREA_NA_CU - Area not available for cultivation*

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