

Development from Representation? A Study of Quotas for the Scheduled Castes in India

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Abstract

This paper estimates the constituency-level development effects of quotas for the Scheduled Castes (SCs) in India, using a unique dataset of development indicators for more than 3,100 state assembly constituencies in 15 Indian states in 1971 and 2001. Matching constituencies on pre-treatment variables from 1971, I find that 30 years of quotas had no detectable constituency-level effect on overall development or redistribution to SCs in reserved constituencies. Interviews with politicians and civil servants in 2010 and 2011 suggest that these findings can be explained by the power of political parties and the electoral incentives created by the quota system.

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Throughout the democratic world it has become increasingly common to use electoral quotas to guarantee the political presence of under-represented groups. Such measures ensure the ascriptive characteristics of politicians who get to power, but not whose interests they work for. There is now a growing literature exploring the empirical consequences of such policies. One of the important ongoing debates is about whether, and under what circumstances, group inclusion results in socio-economic changes that benefit the represented group or hurt others.

In traditional voting models, politicians are usually assumed to be vote-seeking, motivated by career incentives and re-election for themselves or their parties (e.g. Downs, 1957; Arrow, 1963; Mayhew, 1974; Fenno, 1978; Kingdon, 1989; Cox and McCubbins, 2005). Within this framework the ascriptive characteristics of politicians should not have much of an effect, since any politician is expected to respond in a similar way to the incentives of the political system. This view differs dramatically from theories where politicians are assumed to act in the interest of their ethnic groups (e.g. Horowitz, 2000), or to be “citizen-candidates” who run for election in order to implement their favored policies (Osborne and Slivinski, 1996; Besley and Coate, 1997).

The representation of Scheduled Castes (SCs, “untouchables” or Dalits) in India has received considerable academic attention in recent years. The case of SCs is of particular interest not only because they form a large minority that has been subjected to severe social discrimination throughout history (Elayaperumal, 1969; Galanter, 1984; Thorat et al., 2009), but also because they have benefited from one of the most extensive quota systems in the world. Since 1950, SCs have been entitled to reserved seats in the Indian Parliament and state assemblies in proportion to their share of the population in each Indian state (on average 16 percent). In reserved constituencies (political districts) only individuals belonging to an SC community may run for election, while the whole electorate of that constituency votes. These quotas have been effectively implemented, ensuring a proportional political presence

of this group for more than 60 years. Since the early 1990s, SCs have also had reserved positions in village councils across India, bringing hundreds of thousands of SCs to power in their villages.¹

While several studies have probed for socio-economic effects of quotas for SCs at the village level in India (Besley et al., 2004; Besley, Pande and Rao, 2005; Chattopadhyay and Duflo, 2004*a*; Bardhan, Mookherjee and Torrado, 2010; Dunning and Nilekani, 2013), the reserved seats in Parliament and the state assemblies have received less scholarly attention. Two important exceptions are Pande (2003) and Chin and Prakash (2011), who studied the effects of quotas in state assemblies on public spending by state governments and state-level poverty.² An hitherto unexplored empirical question is whether the quotas for SCs in state assemblies have affected the overall level of development or the redistribution to SCs at the constituency level. This is interesting to explore, as Members of Legislative Assemblies (MLAs) in India are often thought to matter more as “fixers” in their constituencies than as legislators (Chopra, 1996). At the state level, the meeting activity in the legislative assemblies is limited (Jensenius and Suryanarayan, 2015), so politicians spend most of their time in their constituencies, where they help people access government schemes, try to influence the bureaucracy to implement projects, or use their networks to attract construction or business projects (Chopra, 1996; Asher and Novosad, 2012; Bussell, 2012). If SC politicians are less able to perform these services—as they are often referred to as ‘weak’ and ‘inefficient’—we should expect to see less overall development in areas reserved for SCs. Also, if SC politicians systematically try to benefit the SC community within their constituencies, we

¹Not only SCs have quotas in India: Scheduled Tribes (STs) have also had the same type of political reservations in Parliament, state assembly and village councils. In village councils positions are additionally reserved for women. Several groups also have quotas for governmental jobs and educational institutions. In this paper I focus exclusively on the case of electoral quotas for SCs in India’s state assemblies.

²Pande (2003) reports of an increase in job quotas for SCs in places with more SC politicians (but no effect on spending on education or welfare spending for SCs), whereas Chin and Prakash (2011) find no effects of SC representation on poverty. Both studies report strong effects of representation for Scheduled Tribes on spending.

should expect to see more redistribution to SCs in reserved constituencies than in comparable general (non-reserved) constituencies.

In this paper I combine evidence from more than 100 in-depth interviews with Indian politicians, civil servants, activists and voters from four Indian states and a unique dataset of constituency-level development indicators, to explore the impact of SC reservations on development patterns at the state assembly constituency level. I look both at changes to the overall level of development, and the distribution of resources between SCs and others. The dataset used for the analysis includes estimates of development indicators for more than 3,100 state assembly constituencies from the 15 largest Indian states in 1971 and 2001, making it possible to examine development patterns in reserved and general constituencies over a 30-year period. The data also allow me reduce concerns about the selection bias inherent in quotas being not randomly assigned in the early 1970s, by matching constituencies on pre-selection variables from 1971 and thereby achieving excellent balance on a range of other pre-selection characteristics.

Comparing matched pairs of constituencies, I find that 30 years of quotas had no detectable constituency-level effect on overall development or redistribution to SCs, neither on the literacy rates or employment patterns of SCs or non-SCs, nor on village amenities in reserved constituencies. These findings are robust across multiple model specifications, and across constituencies and villages with varying proportions of SCs. Based on evidence from interviews with politicians and civil servants, I argue that even though some SC politicians may wish to work more for the interest of the SC community, they are limited in their actions by the desire to be re-nominated by political parties and by the need to appeal to non-SC voters to win elections.

The findings in this paper should not be read as evidence for SC quotas having been a failure. Electoral quotas in India *have* broken social boundaries by bringing marginalized groups into positions of power and have lifted a small segment of that community into the social

elite. They have also significantly altered the perception of SCs in society (Chauchard, 2014), and have made voters more positive to SCs as politicians (Jensenius, 2013*a*). Moreover, the data presented in this paper—as well as evidence presented by Banerjee and Somanathan (2007) and Hnatkovska, Lahiri and Paul (2012)—show that the socio-economic gap between SCs and non-SCs has been shrinking rapidly over the past decades. It is important to note that the no-impact findings at the constituency level in this paper do not in any way preclude that the shrinking gap between SCs and others is the result of an overall equilibrium effect of SCs holding many positions of power. Finally, as one of the key arguments against group representation in India and across the world is that it reduces overall political efficacy by bringing inexperienced or weak politician to power, the findings in this paper can serve as an example that this fear may be exaggerated.

1 Background, literature, and empirical expectations

Members of the SC community—a large minority constituting about 16% of the Indian population—have traditionally been seen as ritually polluting because they were associated with ‘dirty work,’ such as maintaining cremation grounds and cleaning toilets, and were, therefore, discriminated against by higher caste groups (Galanter, 1984, p. 15). The intensity and type of discrimination they were subjected to varied from place to place, but included denial of access to wells, schools, roads, courts, temples, shops, and other public places (Elayaperumal, 1969, pp. 15-32). Untouchability was still widely practiced at the time when India became independent in 1947 and was made illegal in the Indian constitution. Despite extensive measures to improve the situation for SCs in India, the community remains vulnerable. In the National Sample Survey for 2004-05, 37% of SCs were reported to live

below the poverty line, as compared to 23% of the rest of the population.³ SCs also have a lower rate of land ownership, higher unemployment rates, and hold fewer influential positions in both private and public sector jobs (Thorat et al., 2009). The yearly reports by the SC Commission also tell of continued caste-related violence and discrimination across India.⁴

At independence, it was decided that India would be a parliamentary democracy with a federal structure. The 543 Members of Parliament (MPs) and the more than 4,000 Members of the state Legislative Assemblies (MLAs) were to be elected by plurality in single-member districts. There was an ongoing discussion, however, about how to guarantee minority representation within this electoral system. It seemed clear that SCs would not be able to win many political seats because of their small numbers in each constituency and their weak position in society. To ensure SCs a political presence, the Constituent Assembly granted them reserved seats in the national Parliament and the state assemblies, in proportion to their population in each state. In reserved constituencies only individuals belonging to an SC community can run for election, while the whole electorate votes irrespective of their group. Since the SC community is spread across India they are usually in minority in the constituencies reserved for them, this means that most SC politicians are elected by a majority of non-SC voters.⁵

The case of quotas for SC in India is interesting for several reasons. It is among the most extensive and longest lasting quota systems in the world. It has benefited a group that has been subjected to extreme social exclusion and discrimination. And it has a particular design, which was the result of several decades of discussions and negotiations: as the members of the Constituent Assembly were worried about exacerbating existing social cleavages, they deliberately designed the quotas to integrate SC politicians into mainstream politics

³This number is reported in Chin and Prakash (2011, p. 6).

⁴Reports are available online at <http://ncsc.nic.in/>

⁵Similarly, STs were given 7% of the seats in the national Parliament and the state assemblies. As STs are more geographically concentrated they are usually a majority in constituencies reserved for them.

by making them appeal to voters from various caste groups.⁶ SC politicians elected from reserved constituencies were therefore not expected to work specifically for the interest of SCs. This can be seen quite clearly from the fact that Dr. Bhim Rao Ambedkar—the most prominent SC leader who lobbied for SC quotas between 1916 and 1950—saw it as a failure that the SC politicians would have to answer to a non-SC electorate: “the result is that the legislator of the minority elected to the reserved seat instead of being a champion of the minority is really a slave of the majority” (quoted in Samujh, 2005, p. 59).

The quotas for SCs came into effect in 1950. Originally, the idea was that the locations of reserved seats would be moved with every decennial census, but in the 1970s it was decided to freeze the boundaries of both the parliamentary and state assembly constituencies in India, and thereby also their reservation status.⁷ The result was that the electoral constituencies in most Indian states remained unchanged between 1974 and 2007. This is a historical fact I leverage in this paper, as it makes it possible to compare the development in constituencies that were represented by SC politicians for more than 30 years to constituencies that hardly ever elected SC politicians during the same period.

1.1 Literature on the socio-economic effects of quotas in India

In recent years there has been considerable academic interest in exploring the socio-economic effects of electoral quotas in India. Most of this literature has focused on quotas for women in village councils, because these quotas were implemented randomly, making them well-suited for empirical study.⁸ Using data from West Bengal and Rajasthan, Chattopadhyay and Duflo (2004*b,a*) show that women politicians tend to invest more in goods that women

⁶See Jensenius (2015) for a further discussion of this history.

⁷Differential birth rates across India led to an increase in the political representation of areas with high rates. This was seen as a perverse incentive for the family planning programs that was one of the focal areas for the Indian government in the 1970s. Thus, in the 42nd Amendment to the Indian Constitution in 1976, it was decided to freeze all political boundaries until after the 2001 census.

⁸Since 1993 one third of seats in village councils in India have been reserved for women. The locations of these seats have been rotated at the time of each election.

express an interest in. In West Bengal they invest more in water and road projects and less in non-formal education, while in Rajasthan they invest more in water and less in roads. With a sample of more than 35,000 respondents across 24 states, Beaman et al. (2010) also show that villages with female political leaders tend to have better drinking-water supplies. Bardhan, Mookherjee and Torrado (2010) examine data from West Bengal and find that female leaders improve the targeting of subsidized loans to disadvantaged groups, but also worsen the targeting of employment grants.

There have also been studies of the quotas for SCs and STs at the village level. Besley, Pande and Rao (2005) look at survey evidence from four southern states in India and find that a higher proportion of SCs in ruling positions are correlated with more benefits for the SC community. Similarly, Bardhan, Mookherjee and Torrado (2010) find evidence from West Bengal that places where the position of *pradhan* (village president) was reserved for SCs saw an increase in benefits to the village as a whole, an increase in the measures targeted at female-headed households, and to the group of the *pradhan*. Chattopadhyay and Duflo (2004a) also find that more public goods were provided to SC hamlets in villages reserved for SCs. However, using a regression discontinuity design, Dunning and Nilekani (2013) find no evidence that SC politicians channel development funds to their own group when they are in power.

Quotas at the state and national level for SCs and STs have received less academic (and public) attention. These quotas warrant study as they are among the most extensive quotas granted to any group in the world, have been in place for a long time, and give access to considerable resources. We also cannot assume that the same patterns will emerge from the state-level and village-level quotas, as politicians at different levels face different incentive structures—for example, higher-level politicians do not have the same personal relationships with their constituents as politicians in villages. One of the challenges of studying higher-level quotas is that they were not randomly assigned. In a study of the effects of state-level

quotas on public spending, Pande (2003) got around this selection bias by exploiting the time lag between the change in the population share of SCs and STs and the change in number of seats reserved for them. She reported strong effects of ST representation on overall spending, educational spending, and ST welfare spending, while the patterns for SC politicians were weaker: more SCs in positions of power was not associated with changes in total spending, nor with spending on education, land reform, or welfare spending for SCs or STs, but was associated with a higher proportion of government jobs being reserved for SCs and STs.

Using the same identification strategy as Pande, Chin and Prakash (2011) examined the effects of state-level reservations on poverty, measured as the proportion of people living below the poverty line in each state according to the National Sample Surveys conducted between 1960 and 2000. They found strong evidence of reduced poverty when more ST politicians were in power, but reported no significant effect of SC reservation on poverty. They argued that this no-impact finding is consistent with Pande’s findings, as reserved jobs most likely benefit the well-off segment of the SC community, thereby having no effect on poverty.

1.2 Empirical expectations of constituency-level effects

In this paper I explore the constituency-level development effects of state-level quotas for SCs. More particularly, I test whether having an SC MLA affects the overall level of development in a constituency or results in more redistribution of resources to the SC community.

While MLAs are elected to represent their geographical constituencies in state assemblies, the role of engaging in constituency service is important in the Indian case. This is partly because of the limited amount of time MLAs spend on legislative work. Tracing the activity in 15 Indian state assemblies 1967–2007, Jensenius and Suryanarayan (2015) report that the meeting activity in these assemblies has been steadily declining—from about 45 days per year at the beginning of the period to about 34 days per year at the end—and that most

legislation is passed with little debate. Politicians therefore spend most of their time in their home constituencies, where they work to expand their support-base by helping individuals get benefits they are entitled to, facilitating access to governmental schemes, putting pressure on the bureaucracy to implement development works, or by lobbying political allies and business contacts to bring projects to their area (Chopra, 1996; Bussell, 2012; Jensenius, 2013a). Since 1993, Indian MLAs have also had access to discretionary development funds (known as the Member of Legislative Assembly Constituency Development Scheme) that they can distribute to development projects within their constituencies.⁹

One of the common arguments against quotas across the world is that it brings to power inexperienced politicians who reduce the overall efficacy of the state. This has also been argued in the case of SC politicians in India. The SC activist and politician Kanshi Ram famously called SC politicians elected through reserved seats *chamchas* [stooges] and tools in the hands of the upper castes (Ram, 1982). Throughout a series of interviews with politicians, civil servants, political activists, and voters in four Indian states during 2010 and 2011, I was also frequently told that SC politicians are ‘weak’, ‘inefficient’, and ‘useless.’¹⁰

If SC politicians indeed are less effective at attracting resources to their constituencies or influencing the bureaucracy than other politicians, we should expect to see a lower rate of overall development in reserved constituencies over time.

But we can also expect to see changes in the redistribution of resources between SCs and non-SCs. In work on group representation, it is often argued that shared experiences will

⁹See Keefer and Khemani (2009) for a discussion of the politicization of the distribution of MP-LADS, the equivalent funds available to Members of Parliament (MPs.)

¹⁰Between September 2010 and April 2011 I conducted more than a hundred interviews with cabinet ministers, Members of Legislative Assemblies, *pradhans* (elected village chiefs), IAS officers (top level civil servants), activists, and voters. Most of the interviews were conducted in Delhi, Himachal Pradesh (Shimla and Solan), Uttar Pradesh (Lucknow, Meerut, and Varanasi), and Bangalore. The interviews were semi-structured, ranging in length from 15 minutes to 3 hours each. In Shimla, Solan, Varanasi, and Delhi, I conducted the interviews alone, while in the rest of the locations I worked with a collaborator or a research assistant. Most of the interviews in North India were conducted in Hindi, while those in South India were conducted in English. The interviews were not recorded, so the quotes provided in the text are translations from Hindi based on my field notes.

make members of groups have similar policy preferences (see e.g. Phillips, 1995), and there are empirical examples from across the world of the presence of women affecting the political debate and the distribution of resources (see e.g. Lovenduski, 1986; Lovenduski and Norris, 1993; Skjeie, 1991; Dahlerup, 2006; Krook, 2006; Chattopadhyay and Duflo, 2004*b,a*). If SC MLAs in reserved constituencies have consistently favored SC individuals, or have tried to implement projects in SC areas, this kind of favoritism should gradually become visible in a decreasing gap in development between SCs and non-SCs in reserved constituencies.

Yet, if SC politicians are assumed to be motivated by career incentives and re-election, as is usually assumed of politicians in traditional voting models (Downs, 1957; Arrow, 1963; Mayhew, 1974; Fenno, 1978; Kingdon, 1989; Cox and McCubbins, 2005), we should not expect to see such differences in the development patterns in reserved and general constituencies: whereas SCs may have a shared experience of hardship and exclusion, SC politicians elected through reserved seats do not have the incentives to work for their own group.

Throughout the interviews with Indian politicians the answers were surprisingly consistent when asked about constituency-level development effects of SC quotas. While some claimed that the overall level of development has been lower in reserved constituencies, not a single one of the respondents thought SC quotas have led to more intra-constituency redistribution to SCs: some argued that SC politicians get co-opted into the political game and are simply not interested in working particularly for SCs, others thought that SCs politicians might *want* to work more for SC interests, but that the control by political parties and electoral incentives created by the quota system prevent them from doing so.

It seems clear that political parties are important in influencing the choices of politicians in India. Although parties are often referred to as weak or disorganized in India (deSouza and Sridharan, 2006; Chhibber, Jensenius and Suryanarayan, 2014), the party leaderships strictly control who gets to run for election under the party label (Farooqui and Sridharan, 2014). Parties in India have generally been controlled by non-SCs leaders, and SC politicians

may never be given the opportunity to run for office if they are not palatable to the party leadership. Asked about development for SCs in reserved constituencies, an SC politician in India's largest state Uttar Pradesh (UP) said that he would really like to work for the SC community, but that the higher up in the political system he climbed, the more he had to follow the party line.¹¹ Similarly, an SC politician in Himachal Pradesh claimed that he had wanted to focus his campaign on working for SC interests, but that his party refused to let him run until he changed the campaign platform to follow the party line. A senior SC politician in Himachal Pradesh argued that SC politicians, in fact, tend to do *less* for SCs than other politicians because they are scared of being branded as "too SC" by both parties and voters.¹²

Electoral incentives were the other main reason given for why SC politicians do not work for SC interests. The way the quotas are designed, SCs are almost always in minority in reserved constituencies, and since all the candidates are SCs the SC vote is split between the candidates. SC politicians therefore need to appeal to non-SCs for votes. Several interview respondents made it clear that an SC who ran on a specifically SC platform would not be able to win an election. A senior SC politician in UP said it clearly: "I have to work for all, for the majority of the voters, how would I otherwise win the election?"¹³

The evidence from these interviews suggests that even though some SC politicians may wish to work for the interest of the SC community, they are limited in their actions by the desire to be re-nominated by political parties and by the need to appeal to non-SC voters to win elections. Based on this evidence we should therefore not expect to see a difference in the redistribution to SCs in reserved and general constituencies.

¹¹Interview in Meerut, February, 2011.

¹²Interview in Shimla, October, 2010.

¹³Interview in Lucknow, November, 2010.

2 Empirical strategy and data

One major challenge in studying the effects of SC quotas at the constituency level, as with many other observational studies, is that they were systematically, not randomly, assigned in the 1970s. To reduce this selection problem, I exploit features in the institutional design of the quotas to identify general constituencies that can serve as plausible counterfactuals to the constituencies that became reserved in 1974. This empirical approach follows the intuition of the potential outcomes framework (see Splawa-Neyman, 1923; Rubin, 1974; Holland, 1986; Rubin, 2006).

The quotas for SCs in state assemblies came into effect with the first national and state elections held in India in 1951, but were altered or rotated in the mid-1950s, early 1960s, late 1960s, and then again in the early 1970s.¹⁴ The more than 4,000 state assembly constituencies from which Indian MLAs were elected between 1974 and 2007 were drawn out by the Delimitation Commission of India following the release of the 1971 census. The process of delimiting constituencies was completed in Delhi by a group of civil servants, who consulted maps and population tables from the 1971 Census of India. Their goal in delimiting the boundaries of each constituency was to ensure geographically contiguous areas with similarly sized electorates.¹⁵

Once all the constituency boundaries had been drawn, the next step was to select seats to be reserved. The Delimitation Act of 1972 set two selection criteria: that the proportion of SCs should be high in selected constituencies, and that the reserved constituencies should be geographically spread out within the state (Gazette of India, December 30, 1972). In practice this meant that states, and then administrative districts, were assigned a number

¹⁴The Delimitation Orders for each of these changes can be found at [URL] http://eci.nic.in/eci_main1/delimitation_pub_rpt.aspx.

¹⁵The information about these selection procedures is based on archival work in the record room of the Election Commission in February 2011 and an interview with Mr Mehendiratta, February 17, 2011. He was a junior member involved in the delimitation work in the 1970s, was also involved in the delimitation work in the 2000s, and was serving as a legal advisor to the Indian Election Commission at the time of the interview.

of reserved seats proportional to the percentage of SCs in their population.¹⁶ If a district was eligible for a reserved seat, the constituency with the highest percentage of SCs within the district was assigned to be reserved. If a district was eligible for more than one seat, the two constituencies with the highest proportion of SCs, not contiguous to each other, were chosen to be reserved.¹⁷

The result of this step-wise selection process was great variation in the percentage of SCs in reserved constituencies, and several instances of constituencies with high proportions of SCs that were not chosen to be reserved. In fact, the percentage of SCs living in constituencies chosen to be reserved in the 1970s ranged from 4 percent to 66.5 percent (constituencies located in Bihar and West Bengal respectively). There were also general constituencies where SCs constituted up to about 50 percent of the population.¹⁸ Figure 1 shows the location of the state assembly constituencies reserved for SCs between 1974 and 2007.¹⁹

Thus, the constituencies that became reserved in the 1970s were for the most part selected because each had the highest percentage of SCs among the constituencies within their respective districts according to 1971 census data. They were therefore systematically different from the group of all general constituencies within their districts at the time of creation, but they may not have been so different from the constituencies with the *second highest* percentage of SCs within their districts. Often the difference in percentage of SCs was quite small between the constituency that was selected to be reserved and the one with the second highest percentage that remained general, so arguably the selection across these pairs was

¹⁶For example, 13.3% of the population in Andhra Pradesh is SC and the state has 294 political seats, therefore 13.3 percent of those 294 seats were to be assigned to be reserved ($13.3 \times 294 = 39.1 \approx 39$). Similarly, if an administrative district had 13 percent SCs and 6 constituencies, then $6 \times 0.13 = 0.78 \approx 1$ reserved seats would be assigned to that district.

¹⁷For the most part the Delimitation Commission followed these instructions very carefully. A few exceptions are noted in Jensenius (2013*b*).

¹⁸These figures were calculated by the Delimitation Commission based on the 1971 census data and were retrieved from their records.

¹⁹The villages and blocks included in these constituencies are listed in the 1976 Delimitation Report.

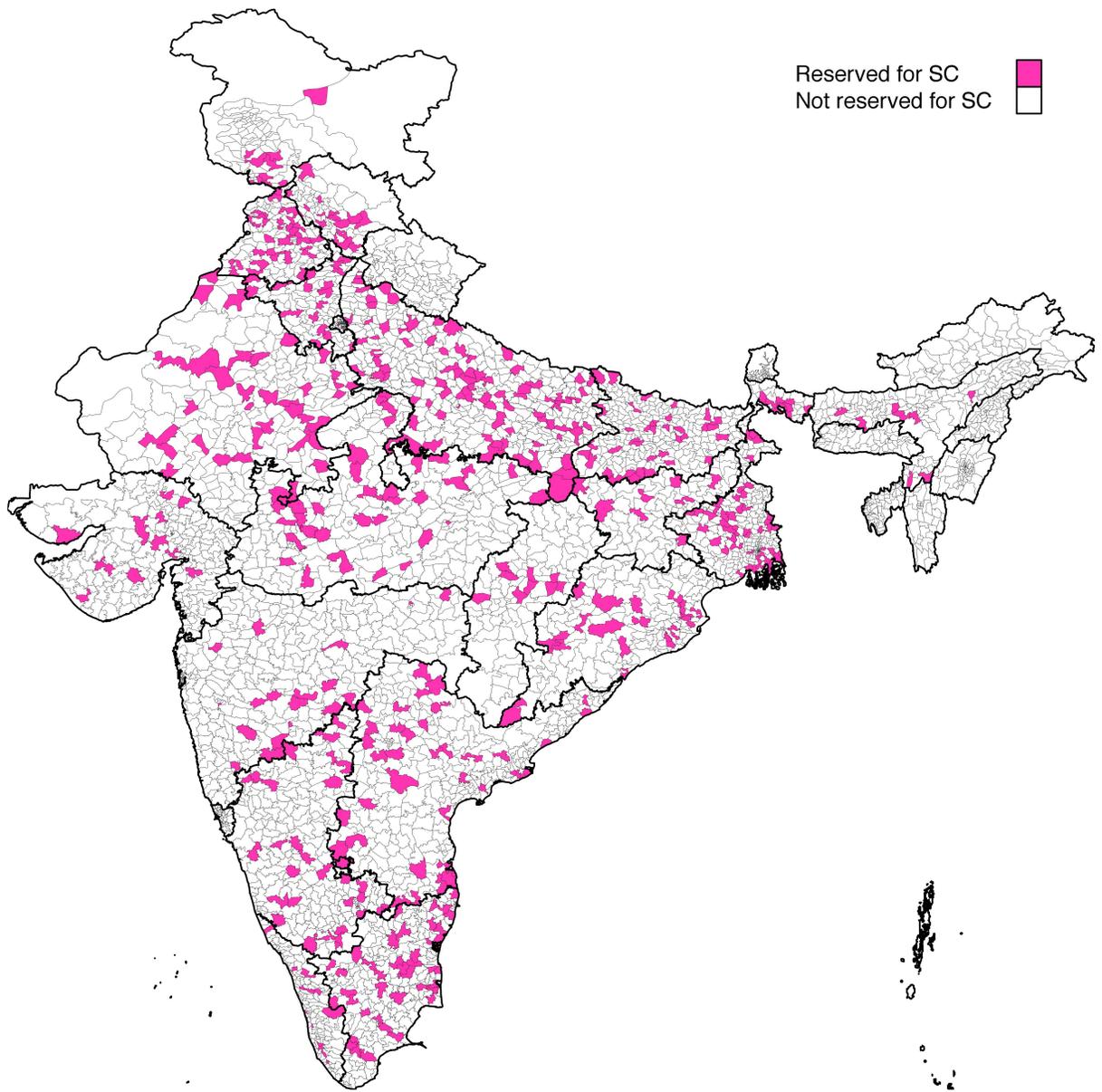


Figure 1: Indian State Assembly Constituencies reserved for SCs 1974–2007.

close to random. Matching every reserved constituency to the general constituency within the same district with the second highest percentage of SCs should therefore ensure good balance on both observable and unobservable confounding variables.²⁰ Before turning to the

²⁰The reservation of constituencies did not result in dramatic changes to the party composition of constituencies. As reported in Jensenius (2013*a*, p. 66-69), SCs have generally run for the same parties as other

results of matching constituencies in this way, I will describe the data used in the analysis.

2.1 Data

In the previous section I described how the Delimitation Commission in the 1970s selected constituencies to be reserved for SCs based on data from the Indian Census of 1971. These census data therefore also form the baseline data for my analysis. There were two major challenges to using these data. First, the Census of India provides data for various administrative units—village, block, and district, among others—that all differ from political constituencies. Second, while several authors have worked with district-level data from 1971, data at lower levels of analyses have not been electronically available. There were on average 10 state assembly constituencies within each district in India in the 1970s, and only a few of those were reserved, so working with district-level data does not allow for a constituency-level comparison of development patterns in reserved and general constituencies. A major part of the work on this project was therefore to create state assembly constituency level estimates of the census data.²¹

For the 1971 data, population-weighted constituency-level estimates were created by matching block-level census data to state assembly constituencies. The block-level Primary Census Abstracts (PCAs) from 1971 for India’s 15 largest states were scanned, made electronic by the use of text recognition software (OCR), and manually cleaned for remaining mistakes.²² Merge-files were then created manually, using the Delimitation Report from 1976

politicians: there have been somewhat fewer independent SC candidates and some more members of the Hindu-Nationalist party Bharatiya Janata Party, but otherwise the distribution of parties has been fairly similar. Reserving constituencies did, however, result in a drop in the electoral turnout (Jensenius, 2013*a*, chapter 7).

²¹These constituency-level estimates of the Indian Census of 1971 and 2001 were developed in collaboration with Rikhil Bhavnani. Further details of how we developed the data can be found in (Bhavnani and Jensenius, 2015) and in online Appendix 1.

²²The states included in the dataset are Andhra Pradesh, Bihar, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal.

that specifies which blocks in the 1971 census fell into each constituency. With information about the exact population in each constituency—which was retrieved from the Delimitation Commission records from the 1970s—we created weights for the proportion of the population of each block that fell within each constituency.²³ The variables in the dataset include population size, literacy rates, employment rates, and occupations. This information is provided for men and women separately, as well as for SCs separately.

The outcome variables used in this paper are from the Indian Census of 2001. There are several advantages with using these data. The census is the only data source to contain development indicators at the village and block level for the entire country.²⁴ This makes it possible to create estimates of variables at the state assembly constituency level, a more disaggregate level than what has been used in previous analyses covering the whole country. Since the baseline data in the analysis are census data, it is also useful to be able examine the same variables 30 years later.

For the 2001 data, estimates of constituency-level values were created by overlaying block-level GIS maps with GIS maps of state assembly constituencies. In this case the merging of variables from the block-level PCA data was done by area-weighting.²⁵

The resultant block-level dataset has constituency-level estimates from 1971 and 2001 for all the census variables from the general PCA and the PCA covering the SC population for 3,134 state assembly constituencies from the 15 largest Indian states. This includes 2,409 general constituencies and 483 constituencies reserved for SCs. The remaining 242 constituencies were reserved for STs and were excluded from the analyses in this paper in order to use only general constituencies as counterfactual cases to SC-reserved constituencies.

²³The exact population of constituencies was calculated by the Delimitation commission based on village-level data from 1971, and is therefore the 1971 population for the areas that later became the new constituencies in 1974.

²⁴Large-scale surveys conducted in India, such as the National Sample Survey, do not include indicators for political constituencies and do not release the indicators for geographic location below the district.

²⁵Ideally, we would have liked to use the same method of aggregation for the 1971 and 2001 data, but this was not practically possible (see online Appendix 1 for details).

In addition to data from the PCAs, I also use data from the Village Directory (VD) from 2001, which contains information on village-level amenities for all the villages in India. In section 4 these data are used at the village level to probe for intra-constituency patterns, while in section 3 they are aggregated to the constituency level.²⁶

2.2 Operationalizing development

From the variables available in the dataset I chose to focus on seven development indicators. The first is the *Literacy rate*.²⁷ This is an important variable considering how low the literacy rate is in the Indian population, and how much voters care about education and see it as the key to social mobility. Politicians have the power to affect literacy rates in their constituencies by getting funds allocated to specific schooling projects or following up on whether the bureaucracy is doing their job of getting schools built, by checking up on whether teachers show up for work, whether SC children get access to the classroom, and by using their discretionary MLA funds on books, uniforms or scholarships.

My second outcome variable is the *Employment Rate* in a constituency. This variable captures all people in the population who do full-time or part-time work.²⁸ Unemployment is high in India, and having a stable income is crucial to the socio-economic standing of a family. Much of the contact between politicians and their constituents relates to getting a job or getting transferred to another position. Politicians have the power to influence who gets hired, and who gets transferred. According to a high-level civil servant interviewed in Himachal Pradesh, he was contacted every day by politicians trying to get someone

²⁶The village-constituency links were generously shared by Asher and Novosad (2012). See online Appendix 1 for more details on how the data was aggregated. Since the VD only includes rural areas, constituencies that are completely urban are not part of the dataset: the sample size is therefore slightly smaller for these variables (2,356 general constituencies and 478 constituencies reserved for SCs).

²⁷According to the Census of India: “A person aged 7 years and above who can both read and write with understanding in any language has been taken as literate” (GOI, 2001).

²⁸According to the Census of India: “Work is defined as participation in any economically productive activity with or without compensation, wages or profit” (GOI, 2001).

in their network hired for some position. He estimated that about half the interactions between citizens and politicians are about transfers and jobs.²⁹ In another interview, an SC politician in Karnataka emphasized that he always put pressure on the bureaucracy to start construction work in his constituency, or tried to use his contacts to attract business investors to his area. He also said that, as an SC MLA, he felt one of his main achievements had been to help reduce the backlog in hiring SCs to reserved positions in the bureaucracy.³⁰

My third development indicator is the percentage of *Agricultural laborers* in a constituency. These are usually landless laborers who work for wages on someone else's farm.³¹ Getting land has been a major issue for SC activists, since land is vital to both social respect and social mobility. As there are far more agricultural laborers among SCs than among non-SCs, it is therefore of interest to see whether reservations have had an effect on the percentage of SCs and non-SCs working as agricultural laborers. Also, as Pande (2003) found an effect of SC representation on job quotas for minorities at the state level, we may expect to see this reflected at the constituency level as well, with more SCs within reserved constituencies taking up desk-jobs rather than working as agricultural laborers.

In addition to these individual-level variables, I also examined four village-level variables from the VD 2001. In this case, I calculated the percentage of the rural population in a constituency that lived with some form of *Electricity in village*, some type of *School in village*, some form of *Medical facility in village*, and finally some type of *Communication channel in village* (post, telegraph, or telephone). By 2001 there was still a limited spread of mobile phones and internet in rural India, so having access to one of these types of communication channels was an important indicator of development for a village. Since most villages have both SC and non-SC populations, these measures cannot cleanly be divided by caste group.

²⁹Interview by the author in Shimla, October 11, 2010.

³⁰Interview in Bangalore, February 23, 2011. SCs have reserved slots in government positions, but these quotas are usually not filled, allegedly because of the lack of qualified candidates.

³¹According to the Census of India: "A person who works on another person's land for wages in money or kind or share is regarded as an agricultural labourer" (GOI, 2001).

However, since the SC population in each village is included in the VD data, I was also able to calculate the proportion of SCs within a constituency that lived in a village with the same four amenities. Since the SC community is poorer than the rest of the population on average, we can imagine that it would be in the interest of the SC community to see more overall development along the lines of the four amenities under study. In Section 4 I also run village-level models looking for correlations between the proportion SCs in a village and the access to these amenities.

To separate out the overall development effects from the potential redistribution to SCs in SC constituencies, I examine both the difference across reserved and general constituencies on the overall level of all these outcome variables, as well as the difference in the gap between SCs and non-SCs. ‘Non-SCs’ were calculated as the total population minus the SC population.

3 Results

In this section I will first present differences on the outcomes variables across all the general and SC-reserved constituencies in the dataset, before moving on to looking at the results from matching models.

Examining the full sample with outcome variables from the 2001 census, as shown in Table 1, reveals some clear differences between reserved and general constituencies. The most notable difference is, not surprisingly, that there is a much higher *Percentage of SCs* in reserved constituencies than in general ones. Additionally, in general constituencies the average *Literacy rate* was 65.2%, as compared to 62.8% in reserved constituencies. There are no major differences in the employment rate or the percentage of agricultural laborers in reserved and general constituencies.

Concerning the differences in the village-level variables, we see that the reserved constituencies have worse values: whereas 90.6% of the rural population in general constituencies

cies lived in an electrified village, the number was 88.1% for the population in reserved constituencies. Similarly, the percentages in reserved constituencies were also slightly lower as regards living in a village that had some type of *School in village*, some form of *Medical facility in village*, and some form of *Communication channel in village*.

The bottom part of Table 1 shows the differences between SCs and non-SCs for the same variables. Here, the mean difference of -10.7 percentage points in general constituencies is the average difference between the literacy rate among SC (56.4) and non-SCs (67.2) in all of the general constituencies in the sample. The literacy gap between SCs and non-SCs is larger in reserved constituencies than in general ones, and the difference in differences of -1.9 percentage points is highly statistically significant.

Negative values indicate the SCs had a lower rate than others, so the positive values for employment and agricultural laborers indicate that there were more SC workers and more SC agricultural laborers, and these gaps were also larger in reserved constituencies. Finally we see that in reserved constituencies there were fewer SCs than non-SCs who lived in a village with a medical facility or communication channel, and this gap was larger in reserved constituencies than in general ones.

Overall, these descriptive patterns indicate that the overall level of development is higher in general constituencies than in reserved ones, and also that there is a larger gap between SCs and non-SCs in reserved constituencies.

We should be careful with drawing conclusions from these descriptive patterns. As discussed above, constituencies were selected to be reserved in the 1970s because they had a high percentage of SCs. At that time, literacy rates and other development indicators were not only much lower across the board, but also lower in reserved constituencies than in general constituencies. Figure 2 shows the change in *Literacy rate* for non-SCs and SCs between 1971 and 2001. In 1971 the *Literacy rate* among non-SCs in general and reserved

Table 1: Difference in general and SC-reserved constituencies in 2001.

Overall patterns (percentages)	Mean general	Mean reserved	Difference in means	P-value
Percentage of SCs	16.7	24.4	7.7	<0.01
Literacy rate	65.2	62.8	-2.4	0.04
Employment Rate	40.1	40.3	0.2	0.77
Agricultural laborers	11.4	12.1	0.7	0.09
Electricity in village	90.4	87.8	-2.6	0.03
School in village	95.3	94.1	-1.1	0.02
Medical facility in village	62.4	59.2	-3.2	0.05
Comm. channel in village	74.4	71.1	-3.3	0.02
Difference between and SCs and non-SCs	Mean difference	Mean difference	Difference in difference	P-value
Literacy gap	-10.7	-12.6	-1.9	<0.01
Employment gap	2.1	2.7	0.6	0.08
Agricultural laborers gap	9.9	11.2	1.3	<0.01
Electricity in village gap	0.3	0	-0.2	0.27
School in village gap	0.2	0.1	-0.1	0.46
Medical facility in village gap	-0.2	-1.1	-0.9	<0.01
Comm. channel in village gap	0	-0.8	-0.8	<0.01
Sample size	2,409	483		

Note: The reported p-values are from bivariate OLS regression models estimated separately for each outcome variable. Standard errors are clustered at the state level.

constituencies was on average 32.3% and 30.1% respectively.³² In both reserved and general constituencies there was a massive increase in the literacy rate over time. As is apparent in Figure 2, however, this increase was very similar in reserved and in general constituencies.

The same pattern holds for the SC population. Here the *Literacy rate* in 1971 was 16.8% and 13.7% in general and reserved constituencies respectively. As we can see, SCs living in both reserved and general constituencies experienced a dramatic and similar growth in literacy between 1971 and 2001.

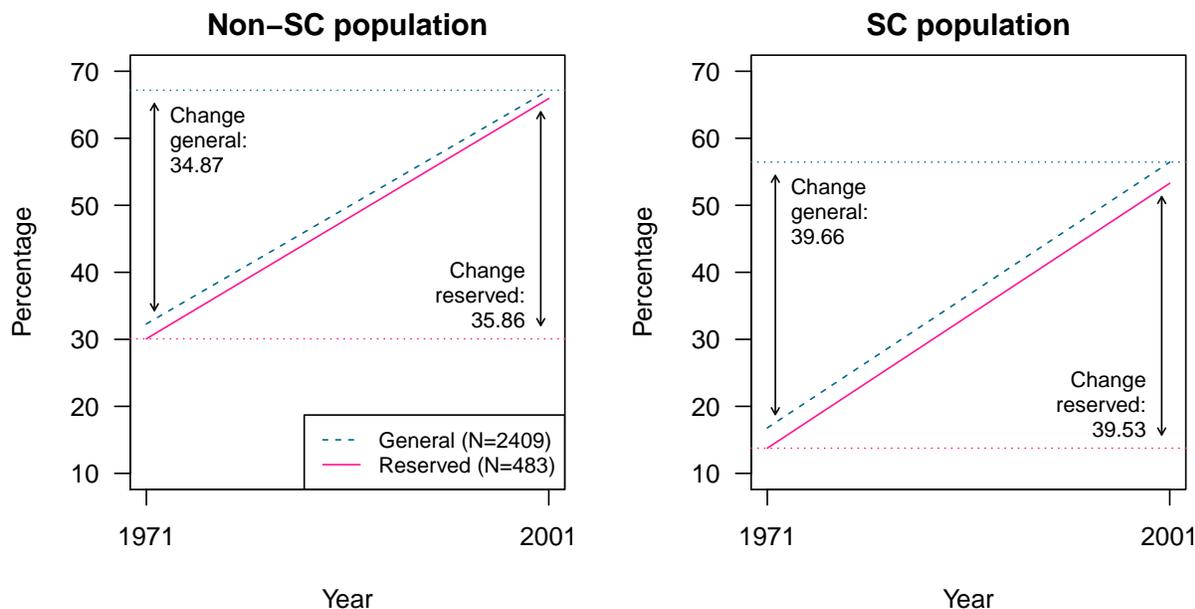


Figure 2: Change in literacy rates between 1971 and 2001 among non-SCs and SCs in reserved and general constituencies.

It is important to note that SCs experienced a larger growth in literacy than non-SCs and that the literacy gap between SCs and non-SCs has lessened over time, but that this growth was not faster in reserved constituencies than in general ones. Yet, these descriptive patterns could be biased by the fact that reserved constituencies differ systematically from

³²My figures for literacy in 1971 are calculated as the number of literate persons divided by the entire population. These figures therefore differ slightly from the official figures, that were calculated as percentages of the population aged 5 or older. For 2001 the figures follow the official definition of number of literate persons divided by the population aged 7 or older.

general ones, and that they therefore could have different time trends. In the next section I therefore present evidence from matching models, where the sample is reduced to comparing reserved constituencies with general constituencies that started out as more similar in the 1970s.

3.1 Matching models

To eliminate as much as possible of the selection bias in the non-random assignment of reserved constituencies in the 1970s, constituencies were matched on the original variables used in selecting the reserved seats in the 1970s: each of the reserved constituencies in the sample was matched to a general constituency within the same district and parliamentary constituency with the closest *Percentage of SC* according to 1971 census data (exact match on district and parliamentary constituency and closest neighbor match on percentage of SCs in the constituency).

The matching was done without replacement, so a general constituency could only be used as a match once. I chose to match on parliamentary constituency in addition to district because parliamentary constituencies also were assigned to be general or reserved in the early 1970s, and differences in reservation status at the parliamentary constituency level could bias the differences between the matched pairs at the state assembly level.

In most cases this meant that within a district with a reserved constituency, the constituency with the highest proportion of SCs was matched to the one with the second highest proportion of SCs. Before matching, the comparison was between 2,409 general constituencies and 483 reserved constituencies. Some 35 reserved constituencies were dropped from the analysis because it was not possible to find an exact match on district and parliamentary constituency. After matching the comparison is therefore between 448 reserved constituencies and 448 matched general constituencies.³³

³³A map showing the location of the matched pairs of constituencies is provided in online Appendix 2.

The matching model just described has the advantage of being simple and transparent, but allows for some matched pairs to differ considerably on the *Percentage of SCs*. To improve the balance of the matches, I also ran the model with caliper of 0.5 on the *Percentage of SCs*. That means that all matches not equal to or within 0.5 standard deviations on *Percentage of SCs* were dropped. This reduces the sample to 324 matched pairs.³⁴

Figure 3 shows density plots of the *Percentage of SCs* according to 1971 data for the general and reserved constituencies in the sample. The left panel shows the difference in the full sample before matching. Here we see that there is a large difference in the densities for the two groups: the general constituencies had an average of about 14% SCs, whereas reserved constituencies had an average of more than 24% SCs. After matching constituencies on *Percentage of SC*, the difference was reduced to about 20% in general constituencies and 24% in reserved constituencies, as shown in the middle panel in Figure 3. The right panel shows the balance for the matches with a caliper of 0.5. Here the difference is further reduced, with 20.1% SCs in general constituencies and 21.6% SCs in the reserved constituencies. It is not surprising that there still is a small difference between the groups—as constituencies were selected to be reserved precisely because they had the highest proportion of SCs within the district—but the matching clearly improves the balance.

More important than balance on *Percentage of SCs* is balance on other potentially confounding variables. The assumption needed to draw causal inferences from the matching estimates is that both observable and unobservable confounders balance out after matching.

³⁴I also tried several other specifications, including: (1) matching on *Percentage of SCs* and several potential confounding variables within the state instead of within the district, achieving excellent balance on all the variables, including *Percentage of SCs*. (2) Matching constituencies on the type of constituency that each constituency mainly overlapped with before 1974 (when the borders changed), but including both general and reserved constituencies. (3) Reducing the sample only to places that mainly overlapped with a previously general constituency, thereby looking only at places that had not been “treated” before. (4) Reducing the sample only to places that had the same reservation status at both state assembly and parliamentary level, and thereby comparing places that were reserved at both levels to places that were not reserved at any level. (5) All of these models with a restriction imposed on how far apart the matched pairs can be on the variable *Percentage of SCs* (caliper). The findings presented in the paper are robust to all the different specifications.

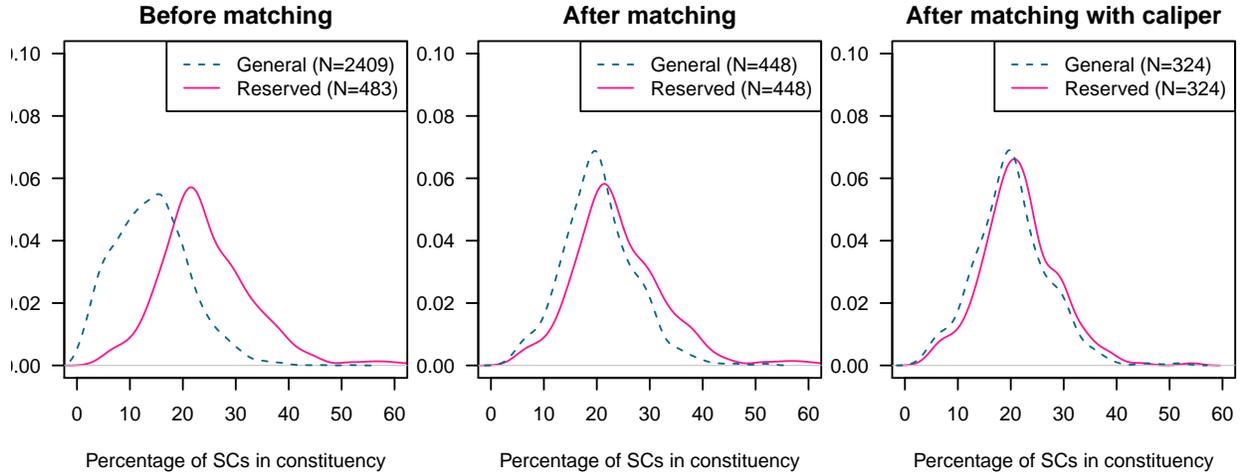


Figure 3: Density plots of *Percentage of SCs* in general and reserved constituencies in 1971: full sample, sample of matched cases, and sample of cases matched with caliper.

Since the 1971 dataset includes a range of other variables that were not matched on, this assumption can be tested by checking the balance on these variables, or in other words, running placebo tests with these pre-treatment variables as outcome variables.³⁵

Table 2 shows balance statistics before and after matching on a selection of variables from the 1971 PCA. The Table reports p-values from difference in means tests (t-test) and difference in distribution tests (bootstrapped Kolmogorov-Smirnov (KS) test). As can be seen in the Table, the general and reserved constituencies in the full sample were statistically significantly different from each other on several of these pre-selection variables. After matching, none of the variables are significantly different from each other, neither in the simple matching model including all matches, nor in the matching model with a caliper. This shows that matching reserved constituencies to general ones greatly improves the balance on observable variables, and therefore makes it plausible that unobserved confounders also balance out.

³⁵As recommended in Rosenbaum (2002, chapter 6).

Table 2: Balance on a selection of 1971 variables

Covariate	Before matching		After matching		Matching (caliper)	
	<i>t</i> <i>p</i> -value	KS <i>p</i> -value	<i>t</i> <i>p</i> -value	KS <i>p</i> -value	<i>t</i> <i>p</i> -value	KS <i>p</i> -value
Population size	0.11	0.01	0.16	0.94	0.41	0.73
Percentage of STs	0.52	0.09	0.62	0.97	0.53	0.91
Literacy rate (non-SCs)	0.00	0.02	0.44	0.96	0.93	0.92
Literacy rate (SCs)	0.00	0.00	0.87	0.92	0.61	0.99
Employment Rate (non-SCs)	0.41	0.36	0.50	0.80	0.78	0.82
Employment Rate (SCs)	0.27	0.04	0.71	0.62	0.81	0.86
Agr. laborers (non-SCs)	0.01	0.01	0.71	0.98	0.50	1.00
Agr. laborers (SCs)	0.54	0.88	0.76	0.99	0.39	0.99

Note: The reported *p*-values are from two-sample *t*-test before matching, paired *t*-test after matching, and KS bootstrapped Kolmogorov-Smirnov (KS) tests. These are the default test statistics returned from the function `MatchBalance` in the `Matching` package developed for R R Core Team (2013) by Sekhon (2011).

3.2 Matching estimates

Table 3 reports three sets of matching estimates: The differences between the 448 matched pairs of reserved and general constituencies (all matches), the difference between the 324 pairs that were matched with a caliper of 0.5 standard deviations on the *Percentage of SCs*, and a bias adjusted estimate of the differences between these 324 pairs. The numbers reported in the two first columns are equivalent to the coefficients from bivariate OLS regression analyses of the reservation status of constituencies on each of the outcome variables. The bias-adjusted estimates are the same as an OLS analysis on the 324 pairs of constituencies, controlling for the remaining imbalance in the *Percentage of SCs*.³⁶

The differences reported are the same as in Table 1, but as can be seen in Table 3, the differences are now much smaller and none of them are statistically significant.³⁷ In the first column we see the difference between reserved and general constituencies on the overall literacy rate. In the full sample there was a difference of 7.7 percentage points, while in this

³⁶See Imbens and Abadie (2011) for a discussion of bias-adjusted matching estimators.

³⁷The patterns in the table include first-order differences in the top panel, and second-order differences in the bottom panel. The patterns are robust to including the third difference of looking at changes over time (1971–2001) for the PCA variables. I chose not to report these third-order differences, as data from 1971 was not available for the VD data. In Table 4 below, some of the models with robustness checks include the 1971 values as a control variable.

reduced sample of matched cases the difference is down to 0.18 percentage points. This is not only statistically insignificant, but also a substantively small difference in real-life terms.

If there had been an overall pattern of SC politicians being less able to bring development to their constituencies, we should have seen negative and significant numbers for literacy rate, employment rate, and village amenities in the top part of the table, and positive and significant differences in the percentage of agricultural laborers. However, looking across all the variables for the overall level of development, the differences are small and insignificant. The estimate that comes closest to conventional levels of significance is the bias-adjusted estimate for difference in overall literacy, which is positive, suggesting that overall growth in literacy may in fact have been slightly higher in reserved constituencies.

The bottom part of the table shows the intra-constituency difference in means between SCs and non-SCs. Had SCs benefited from living in reserved constituencies, we should have seen positive and significant values for literacy, employment rates and village amenities and negative values for agricultural laborers. The fact that we see very small differences that are not statistical significance indicates that SC representation has had no detectable impact on the intra-constituency distribution between SCs and non-SCs.

Figure 4 illustrates the matching estimates reported in Table 3. For each of the outcome variables, the black dot indicates the matching estimates from the matching models with a caliper of 0.5. The white dots represent the point estimates from the bias-adjusted matching models. The black horizontal lines show the 95 percent confidence intervals for each of these point estimates.

4 Robustness checks and alternative explanations

There are various ways of probing these findings further, to check for robustness and for heterogeneous effects. Here I discuss two such robustness checks.

Table 3: Matching estimates of percentage point differences on 2001 data between general and reserved constituencies

Outcome variables	All matches		Matches w/caliper		Bias Adjusted	
	Difference	P-value	Difference	P-value	Difference	P-value
Literacy rate	-0.18	0.58	0.06	0.85	0.55	0.07
Employment rate	-0.08	0.70	-0.25	0.29	0.15	0.67
Agricultural laborers	0.09	0.69	-0.19	0.46	-0.21	0.55
Electricity in village	-1.19	0.16	-0.79	0.23	0.03	0.97
School in village	-0.32	0.35	-0.53	0.21	-0.21	0.68
Medical facility in village	-0.26	0.53	-1.03	0.10	-0.29	0.64
Comm. channel in village	-0.51	0.50	-0.34	0.73	0.96	0.30
Gap between SCs and non-SCs	Difference in difference	P-value	Difference in difference	P-value	Difference in difference	P-value
Literacy gap	-0.03	0.88	0.01	0.96	0.38	0.12
Employment gap	0.00	0.96	-0.06	0.64	-0.18	0.20
Agricultural laborers gap	0.02	0.89	-0.04	0.80	-0.13	0.59
Electricity in village gap	0.02	0.84	0.22	0.26	0.26	0.16
School in village gap	-0.06	0.54	-0.01	0.92	-0.04	0.71
Medical facility in village gap	-0.29	0.40	0.33	0.28	0.43	0.16
Comm. channel in village gap	-0.31	0.18	-0.20	0.52	-0.07	0.83
Sample size	896		648		648	

Note: The reported p-values are from OLS regression models estimated separately for each outcome variable. Standard errors are clustered at the state level. The conclusions are robust to using naïve standard errors from the OLS models, and standard errors for permutation tests.

4.1 Heterogeneous treatment effects

First, it is interesting to see whether the level of development in constituencies is correlated with the *Percentage of SCs* in the constituency, and whether there is an interaction effect between the reservation status of a constituency and the *Percentage of SCs*. We might expect a heterogeneous treatment effect that depends on whether the electoral incentives align with the personal preferences of politicians. It is possible that when the proportion of SC voters is large enough to form an important part of a winning coalition of voters, SC politicians will be more likely than non-SC politicians to try to appeal to these voters. On the other hand, we may see no difference if both SC and non-SC politicians respond the same way to the electoral incentives of trying to win elections in constituencies with a higher proportion

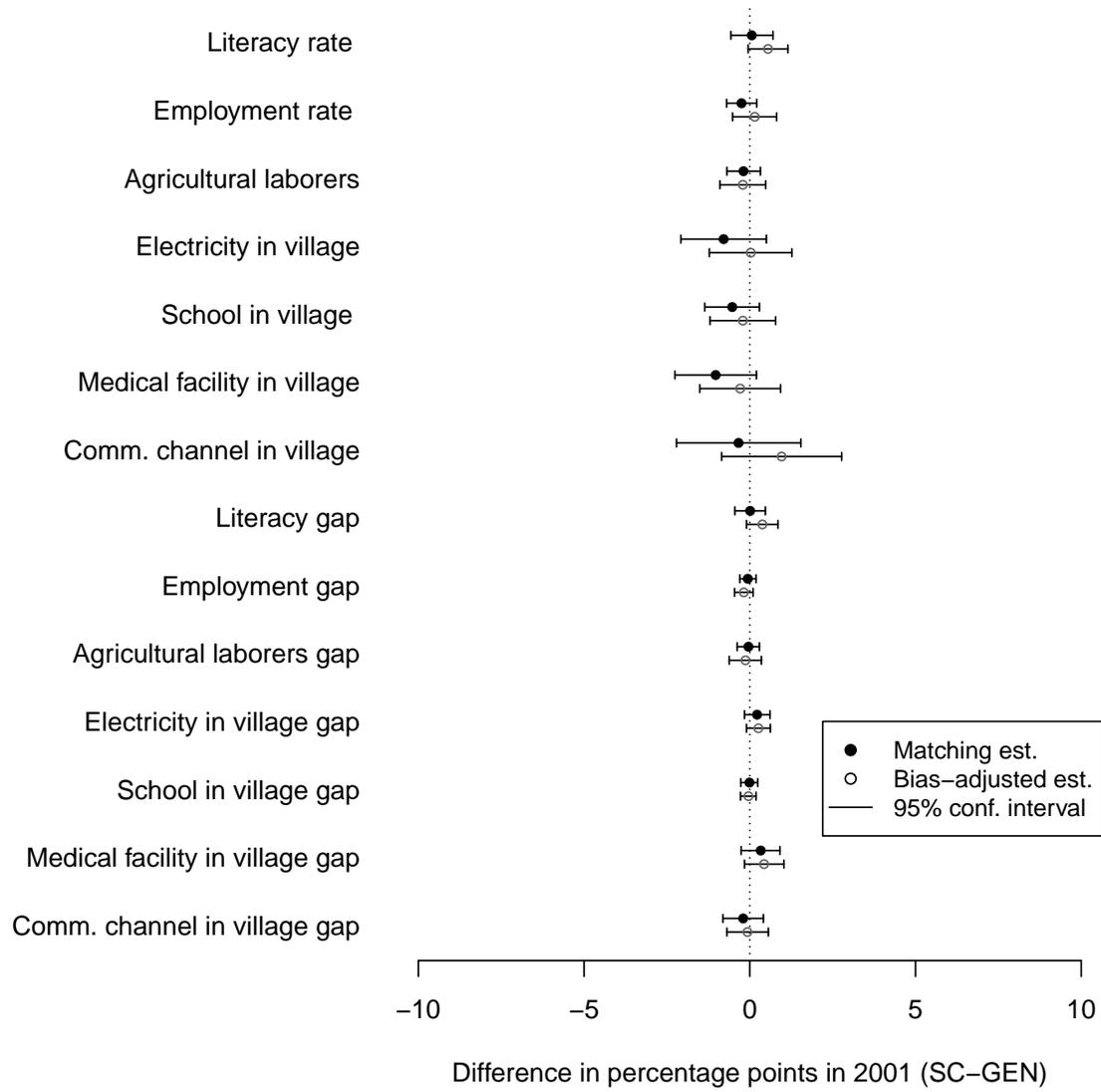


Figure 4: Difference between 324 matched pairs of constituencies in 2001.

of SC voters. The arguments presented earlier—about the important role of political parties in nominating candidates and controlling politicians—similarly suggest that we should not expect to see such differential behavior among politicians.

Table 4 reports output from OLS regression models exploring these potential heterogeneities in the treatment effects. The outcome variables include the *Literacy Rate* among SCs in 2001, the *Employment Rate* for SCs in 2001 and the percentage of *Agricultural Labor-*

Table 4: Interaction between percentage SC in constituency and outcome variables for the SC community

	SC lit. rate 2001		SC emp. rate 2001		SC agr. 2001	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Intercept	58.91*	47.68*	45.43*	26.69*	24.27*	-4.04*
	(7.69)	(3.31)	(2.62)	(2.75)	(4.46)	(1.85)
SC reserved	0.56	1.30	-0.11	-1.18	0.26	-0.76
	(1.16)	(1.26)	(0.88)	(0.70)	(1.19)	(0.80)
Percentage SC	-0.33	0.07	-0.15	0.03	-0.17	0.11
	(0.27)	(0.08)	(0.11)	(0.05)	(0.16)	(0.08)
SC reserved * Percentage SC	0.01	-0.06	0.00	0.04	-0.01	0.02
	(0.06)	(0.06)	(0.04)	(0.04)	(0.06)	(0.04)
Literacy SC in 1971		1.10*				
		(0.15)				
Worker SC in 1971				0.53*		
				(0.08)		
Agr. laborer SC in 1971						0.32*
						(0.02)
State fixed effects		Y		Y		Y
N	648	648	648	648	648	648
R^2	0.02	0.82	0.02	0.62	0.01	0.77
adj. R^2	0.02	0.81	0.02	0.61	0.01	0.76
Resid. sd	14.49	6.33	7.32	4.58	10.91	5.37

Note: * indicates significance at $p < 0.05$. Standard errors are clustered at the state level. The conclusions are robust to using naïve standard errors from the OLS models.

ers among SCs in 2001, and the sample is the 324 pairs of constituencies that were matched with a caliper of 0.5. For each outcome variable, Model 1 includes the reservation status of constituencies, the percentages of SCs in the constituencies and their interaction. Model 2 also includes the baseline value for the outcome variable in 1971 and state fixed effects. For all three cases, the explanatory power of the reservation status and the percentage of SCs is minimal (R^2 0.02 and 0.01), while the inclusion of the lagged outcome variable and the state fixed effects greatly increase the explanatory power of the models. All standard errors are clustered by state.

As in the binary case, the explanatory power of the reservation status is small and insignificant across the outcome variables. The coefficients for the percentages of SCs and the interaction terms are also insignificant across the models. In other words, there is no evidence of a heterogeneous treatment effect based on the percentage of SCs in constituencies.³⁸

4.2 Intra-constituency variation

Another possibility consistent with the no-impact findings is that SC politicians have prioritized to redistribute resources to the few areas within their constituency with high SC population, at the cost of SC minorities across the rest of their constituency. Such behavior would be visible in a higher rate of development in villages with a high proportion of SCs.

To probe for such a pattern, the full sample of villages in the VD dataset (N=634,919) was reduced to the villages that fell within the 324 pairs of reserved and general constituencies that were matched with a caliper (N=112,192). Table 5 reports output from logistic regression models probing for heterogeneity by proportion of SCs in each village. The analysis is at the village level, and the outcome variables are dichotomous indicators for whether a village was electrified, had a primary school, a medical facility, or some form of communica-

³⁸Similar models for the gap between SCs and non-SCs and for village amenities also show no evidence of heterogeneity. The results can be provided upon request.

tion channel. Across the models, the coefficients are substantively small, and using standard errors clustered by state (reported in brackets), none of the explanatory variables are significant at conventional levels. The coefficients are similarly insignificant if the standard errors are clustered at the district or state assembly constituency levels. All the clustered standard errors are much larger than the naïve standard errors in this case, which I report in square brackets for the sake of transparency.³⁹

Again, the patterns reported do not provide any evidence of SC politicians bringing less development to their constituencies nor that they have distributed more resources to SCs while in power.

Table 5: Logistic regression models of propensity for villages to have various village amenities in 2001

	Electricity	Primary School	Medical inst.	Comm. channel.
Intercept	5.70* (0.09)[0.26]	0.11 (0.07)[0.03]	-1.25* (0.03)[0.04]	0.56* (0.05)[0.03]
SC reserved	-0.06 (0.12)[0.03]	-0.03 (0.06)[0.02]	-0.05 (0.04)[0.02]	0.04 (0.04)[0.02]
Proportion SC	0.02 (0.30)[0.06]	0.33 (0.28)[0.05]	-0.15 (0.14)[0.05]	0.03 (0.15)[0.04]
SC reserved * Proportion SC	0.01 (0.14)[0.08]	-0.06 (0.14)[0.07]	0.09 (0.12)[0.06]	-0.05 (0.05)[0.06]
State fixed effects	Y	Y	Y	Y
<i>N</i>	112094	112192	112192	112192
AIC	82213.82	106826.64	125768.34	135440.02
BIC	82983.99	107596.87	126538.58	136210.26
log <i>L</i>	-41026.91	-53333.32	-62804.17	-67640.01

Note: * indicates significance at $p < 0.05$. Standard errors clustered by state in parentheses, naïve standard errors in brackets.

³⁹Using naïve standard errors some of the coefficients are significant, but not in the expected direction: villages with a high proportion of SCs are the least likely to be electrified in constituencies reserved for SCs, and villages with a low proportion of SCs are more likely to have a communication channel in reserved constituencies. However, given the clustered nature of the village data these standard errors are likely to be too small.

4.3 Alternative explanations

The findings from this empirical analysis and the evidence in my interviews, lead me to conclude that quotas for SCs in India have not had a detectable developmental impact at the constituency level. I have argued that this may be explained by the power of political parties and the electoral incentives in this particular quota system. However, there are other alternative explanations for these findings that cannot be ruled out.

First, it is possible that MLAs impact some types of development but not the ones measured here, or not on a large enough scale to become visible in aggregate analyses. Still, given that the analyses is at a fairly disaggregated level and covers 30 years, my findings indicate that there is no large-scale development effect of SC quotas at the constituency level.

Second, it may be that politicians simply do not affect development outcomes very much. After all, it is members of the bureaucracy who implement policy, and perhaps the ability of politicians to affect the actions of the bureaucracy has been exaggerated. If so, it will not matter much to development patterns who happens to be in power, something that actually weakens the arguments against quotas that are based on assumptions that they are detrimental to the welfare of the population.

Third, and as mentioned in the introduction, it is possible that SC politicians have affected the overall development for SCs in India—by altering the attitudes against SCs among other politicians or influencing the quality of the implementation of existing welfare policies for SCs—but that these benefits are not visible at the constituency level. If so, this would be an important argument in favor of more group representation, but would not necessarily indicate that minority politicians themselves work more for their own group once in power.

5 Conclusions

Across the world it has become increasingly common to implement measures to guarantee the political presence of previously under-represented groups. An ongoing debate questions whether, and under what circumstances, this results in tangible socio-economic changes. This paper has looked at constituency-level development effects of the quotas for SCs at the state assembly constituency level in India over a 30-year period. Combining evidence from in-depth interviews and a unique constituency-level dataset, I found no evidence of any difference in the overall change in development or the redistribution to SCs in reserved constituencies. I argue that this no-impact finding can be explained partly by the design of the quota system, where SCs are a minority of the electorate in reserved constituencies, and partly by the importance of political parties in nominating candidates and controlling the behavior of politicians.

As emphasized in the introduction, finding no effect of reservations on development for SCs does not mean that quotas have not served an important role in guaranteeing the political presence of a marginalized group, nor that the quota system has not influenced social discrimination. It is unlikely that many SCs would have been elected to political office in India had it not been for the quotas. Given the extent to which SCs have been marginalized in Indian history, their mere presence in the same rooms as other politicians can be seen as a success in itself. Given that one of the main arguments against including under-represented groups in politics across the world is that they will negatively affect the efficacy of the political system, the finding that there was no overall difference in the level of development in reserved and general constituencies can also serve as an example that this fear may be exaggerated.

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