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# Affirmative action, education and gender: Evidence from India<sup> $\star$ </sup>



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## ABSTRACT

This paper studies the impact of India's affirmative action policies for Scheduled Castes on educational attainment. Using a plausibly exogenous variation, I show that affirmative action increases educational attainment. The main improvements are in literacy and secondary schooling and there is only small evidence of increases in higher education. The benefits are not distributed evenly across genders: only males show an increase in education (in literacy, primary and secondary completion). Individuals at the intersection of discriminated groups (low caste and female) may not be benefiting from these policies.

## 1. Introduction

The very nature of affirmative action policies makes their evaluation difficult, so, while these policies are often widely debated, the debate is rarely well informed. India is a particularly interesting case study. It has implemented the largest affirmative action program in the world, targeting the low castes and, in particular, the "Scheduled Castes" (SC).<sup>1</sup> Those policies have been controversial since their introduction at Independence. In the early 90s, with the expansion of affirmative action policies to a new group of castes, namely the "Other Backward Classes" (OBC), the debate has become particularly intense. It has focused on quotas in higher education, in which competition with the high castes was the strongest. Following this trend, most of the literature has dealt

with the consequences of quotas in universities (Bertrand et al., 2010; Krishna and Frisancho Robles, 2012) or of affirmative action policies for OBC (Khanna, 2013). Some studies have looked into the evolution of education of the SC as a group (Desai and Kulkarni, 2008; Hnatkovska et al., 2012), but without an identification strategy that can associate trends in educational attainment with affirmative action policies. As a consequence there is still little knowledge about what is arguably the first order question for the evaluation of affirmative action policies' impact on education: that of their average effect on the SC population, a deficit already diagnosed several decades ago (Chalam, 1990; Chitnis, 1972; Galanter, 1984). According to the 2011 Census, only 56% of the SC population aged 20 and above was literate (whereas 66% of the population was), only 30% had attained an education level higher

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<sup>&</sup>lt;sup>1</sup> The "Scheduled Castes" are the castes traditionally the most discriminated against. They represent approximately 17% of the population in 2011.

than primary (versus 41%), and only 6% had gone beyond secondary schooling (versus 11%). Hence, the current focus on the effect of quotas in universities for higher education students tends to neglect the weakest segment of the Indian population, the majority of SC which never reach university. This tendency to focus on the impact of affirmative action in higher education institutions on the marginal beneficiaries more than on the entire target population is present in other affirmative action literature in settings such as the United States of America (Arcidiacono, 2005; Hinrichs, 2012) or Brazil (Francis and Tannuri-Pianteo, 2012). In the Indian context, this issue is particularly important, as affirmative action policies have other dimensions than just quotas in higher education.

This paper makes two new contributions. First, it measures the average effect of affirmative action policies at every level of education, instead of the marginal effect at higher levels of education. I find an overall important but imprecisely estimated effect of affirmative action, which may have led to an increase in literacy of 10 percentage points and in secondary attainment of 7 percentage points. This highlights that the focus on higher education quotas had led us to overlook the important and beneficial impact of affirmative action policies at lower levels of education. However, although quotas in higher education probably change the level of education of individuals benefiting from them, they do not appear to directly affect the average level of education of SC in a meaningful way: I find no statistically significant increase in higher education.<sup>2</sup> But if quotas in higher education do not seem to affect strongly higher education attainment, they may still have an indirect impact on education: by providing role models or by increasing educational attainment at lower levels, via an incentive to pursue longer studies.<sup>3</sup> Note that these positive findings on the effects of affirmative action for SC contrast with the research on the impact of quotas in legislative assemblies on SC. Indeed, Pande (2003), Chin and Prakash (2011) and Jensenius (2015) find very little effect of electoral quotas on policies targeted to SC, poverty reduction and public goods provision. As a consequence, this paper allows to nuance our view on the impact of affirmative action policies on SC.

Second, by emphasizing the gender differential in the impact of affirmative action, this paper underlines the heterogeneous effect of affirmative action policies within the treated population. The overall increase in education is entirely captured by men. This finding relates to the literature on intersectionality (Crenshaw, 1989, 1991) by showing that individuals at the intersection of different discriminated groups (such as women of low castes) may not be sufficiently protected by policies that ignore this cumulative discrimination. More generally, it relates to the literature on gender discrimination in education (Jensen, 2012) and in particular to the literature on the asymmetric effect of social policies in developing countries (Foster and Rosenzweig, 2003; Rosenzweig and Schultz, 1982; Ashraf et al., 2015).

The research design of this paper relies on a natural experiment which creates variation within jati - the subcaste that is the relevant reference group in daily life in India - and within states in access to SC status. At Independence, a list of jatis to be considered SC was drawn for each state. There were some discrepancies across states: the same jati could be considered SC in one state, but not in a neighboring state.<sup>4</sup> In 1956, the borders of the Indian states were redrawn along linguistic lines, while leaving the lists of SC unchanged. This aggravated the discrepancies: a jati could have been considered SC in one part of the state but not in an other part of the same state. This situation lasted until 1976, when the lists of SC were harmonized within each state, giving 2.4 million individuals (Government of India, ed, 1978) access to the SC status. This historical variation creates a natural experiment for assessing the impact of affirmative action policies. For all jatis that were considered SC after 1976, I distinguish two groups, a control group of "early SC" (ESC) who were considered SC at Independence, and the treated group, "late SC" (LSC), that became SC after 1976. To avoid any risk of confounding due to congestion effects,<sup>5</sup> I will use two additional control groups: the members of jatis considered SC in a state different from their own and the OBC. The former, members of the jatis considered SC somewhere else (SCSE) are likely to be exposed to the same discrimination but never benefit from affirmative action. The latter are composed of jatis also discriminated against by high castes, who were subsequently targets of affirmative action in the 1990s. Both represent a useful counterfactual: they are not exposed to affirmative action policies during the period of interest, but are arguably not too dissimilar from SC jatis. Figs. 1 and 2 summarize the variation used in the paper. They show the evolution of the SC status of three jatis, J, K and L, spread across two states whose borders will change in 1956. Jati J becomes SC at Independence in state A only, and jati K in state B only, while jati L will get the OBC status in the 1990s. As the borders of states A and B change in 1956, the SC status of members of jatis J and K now becomes different within the same state B' depending on their region of residence. In 1976, with the removal of area restriction, the SC status of jatis J and K becomes consistent within state (but not across). Ideally one would also want to use the variation generated by the creation of the SC status in 1950. In 1950, the ESC get access to the SC status while the LSC do not: the LSC thus provide an ideal counterfactual. However, given the long delay between the data collection and the 1950 natural experiment, I can not fully exploit this variation and only use it as suggestive evidence. Table 1 summarizes the control and treatment status of each jati, based on the notation in Figs. 1 and 2.

As the treatment status varies across jatis, and within jati across time and space, this paper innovates by coding the treatment status of individuals based on their jati name, instead of their declared beneficiary status.<sup>6</sup> By using the jati name I can use demanding specifications, which identify the effects of the policy within a single jati, something that, to the best of my knowledge, has never been done in the literature.

The data used in the paper are the second round of the DHS (also know as NFHS), collected in 1998–9. To my knowledge, this is the only dataset containing at the same time a large enough sample size, the precise jati name and district identifiers. A major drawback of this dataset is the lack of information on migration: I know where the respondents reside at the time of the survey, but have no information on their residence at the time of the policy change. Hence, selective migration may be an issue for the results. I specifically address this concern, along with concerns of selective identity manipulation as in Cassan (2015) to show that they can not drive the results.

In the first section of this paper, I present the context and the natural experiment. I then describe the data and the empirical strategy, leading to the results, discussion and various robustness checks (exploitation of the first access to the SC status, differential threshold for treatment, migration and identity manipulation). Finally, I explore the heterogeneity of the findings to suggest some possible channels through which access to SC status may lead to increased education.

<sup>&</sup>lt;sup>2</sup> Note however that quotas in higher education should, by construction, increase the average level of education among SCs if the individuals entering higher education with quotas would not have entered higher education otherwise. The fact that I do not observe this pattern in the data only means that this effect is too small to be captured, as very few SC reach higher education.

<sup>&</sup>lt;sup>3</sup> On that point, see for example Khanna (2013).

<sup>&</sup>lt;sup>4</sup> There were also within state discrepancies, but they were relatively minor.

 $<sup>^5</sup>$  If the resources allocated to SC do not change in 1976, but the number of SC increases, some of the convergence between ESC and LSC may be due to the decrease in resources allocated to ESC. This would still be proof that access to SC status mattered for educational attainment, but the interpretation of the results would be different.

<sup>&</sup>lt;sup>6</sup> Indeed, most of the micro level literature on affirmative action in India uses the household's declaration of its SC status as a basis for identifying the "treatment" group (Khanna, 2013; Hnatkovska et al., 2012, 2013; Prakash, 2009).

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