Title: Affirmative Action and Social Integration in College

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Background

Social integration in diverse societies plays a crucial role in creating and maintaining positive political, economic, and social benefits. Education is an important tool in promoting integration, and colleges in particular are unique melting pots. In the context of college, affirmative action or 'reservation' of seats based on socioeconomic background is one major policy that may promote diversity and integration by bringing together students from diverse socioeconomic backgrounds. However, no systemic large-scale evidence exists about whether college contributes to social integration among students who receive such reservation benefits (referred to from here on as 'reservation students') and those who do not (referred to from here on as 'non-reservation students').

Our analysis focuses on the higher education system in India to study this phenomenon. India, besides arguably being the most diverse democracy in the world, also implements the largest affirmative action policy for reservation students, with around half the seats (~49.5%) reserved for them during college admissions[1]. Since modern India's inception, policymakers have paid a great deal of attention towards promoting unity in diversity. The Constitution of India identifies three specific population groups that have been historically disadvantaged and are eligible to claim 'reservation' benefits – i) the Scheduled Castes (SCs) based on the historically insidious caste system, ii) specific tribal groups known as the Scheduled Tribes (STs), and iii) the Other Backward Classes (OBCs), which are economically better off than the SCs and the STs, but are still disadvantaged to some extent when compared with those in the non-reservation category. These categories come into play during college admissions, wherein ~15% seats are reserved for the SCs, ~7.5% seats are reserved for the STs, and ~27% seats are reserved for the OBCs. Policymakers have long relied on college, as a major social institution, to promote social integration among different sections of society.

The objective of this analysis is to compare the levels and gains in integration among non-reservation and reservation students at college. We further analyze if these patterns in levels and gains in integration differ between elite and non-elite institutes of higher education[2].

Approach

To fulfil our objective, we collected and analyzed unique nationally representative, granular, complete social network data from 19,542 students at 50 colleges (42 non-elite and 8 elite) in India. These 50 colleges were chosen based on a stratified random sample from the population of non-elite and elite Indian engineering colleges. At each college, we collected social network data longitudinally for 2 cohorts of students – i) from the start of Year 1 to the end of Year 2, and ii) from the start of Year 3 to the end of Year 4. We then examine gains in integration for both student cohorts at each college.

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[1] Weisskopf, T. E. (2004). Impact of reservation on admissions to higher education in India. *Economic and Political Weekly*, 4339-4349.

[2] An institution is considered as 'elite' if it appears in the top 100 institutions in the National Institutional Ranking Framework – 2017 adopted by the Ministry of Human Resource Development, Government of India, to rank institutions of higher education in India.

Integration Score

Students were asked to list up to ten studymates in their current class (same department and year) that they have studied with or have had discussions on academic topics that semester. Based on this data on studymate networks, and using reservation versus non-reservation category distinction, we estimate an integration score for each individual. The integration score is defined as a student-level continuous variable calculated as a ratio of the number of studymates outside a student's own category to the total number of studymates. The score ranges between 0 and 1.

In other words, for a *reservation student*:

$$Integration\ score\ among\ studymates = \frac{Total\ number\ of\ nonreservation\ studymates}{Total\ number\ of\ studymates}$$

On the other hand, for a *non-reservation student*:

$$Integration\ score\ among\ studymates = \frac{Total\ number\ of\ reservation\ studymates}{Total\ number\ of\ studymates}$$

We examine how the distribution of these integration scores changes from start to middle to end of college. We further examine these changes for reservation students and non-reservation students studying at elite and non-elite colleges separately.

Results

At the beginning of Year 1, reservation students are better integrated than non-reservation students—see Tables 1 and 2. The difference in integration is statistically significant and is driven by the better integration of reservation students in elite colleges—see Tables 3 and 4.

Non-reservation students become more integrated from Year 1 to Year 2 as well as from Year 3 to Year 4—see Table 1. At the same time, reservation students become less integrated from Year 1 to Year 2 as well as from Year 3 to Year 4. These trends are driven almost entirely by non-elite colleges—see Table 3. The gains and losses are both statistically significant.

For the most part, both non-reservation and reservation students in elite colleges do not make statistically significant gains or losses in integration.

By the end of Year 4, reservation students are still better integrated than their non-reservation counterparts in elite colleges—see Table 4. At the same time, reservation students in non-elite colleges are now less integrated than non-reservation students. The differences are all statistically significant.

Table 1: Levels in Integration at Start, Middle, and End of College and Gains in Integration

	Integration Start of Year 1	Integration End of Year 2	Gain: Y1 to Y2	Integration Start of Year 3	Integration End of Year 4	Gain: Y3 to Y4
Non-reservation	-0.04	0.01	0.05**	-0.07	0.01	0.08***
Reservation	0.04	-0.01	-0.05**	0.07	-0.01	-0.08***

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table 2: Differences in Integration between Non-reservation and Reservation Students

	Start of Year 1 Differences	End of Year 2 Differences	Start of Year 3 Differences	End of Year 4 Differences
Non-reservation – Reservation	-0.08***	0.02	-0.14***	0.02

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table 3: Levels in Integration at Start, Middle, and End of College and Integration Gains (Elite vs. Non-elite)

	Integration Start of Year 1		Integration End of Year 2		Gain: Y1 to Y2		Integration Start of Year 3		Integration End of Year 4		Gain: Y3 to Y4	
	Elite	Non-elite	Elite	Non-elite	Elite	Non-elite	Elite	Non-elite	Elite	Non-elite	Elite	Non-elite
Non-reservation	-0.19	-0.01	-0.23	0.06	-0.04	0.07***	-0.21	-0.04	-0.17	0.04	0.04	0.08***
Reservation	0.12	0.02	0.17	-0.04	0.05	-0.06***	0.18	0.05	0.18	-0.04	0.00	-0.09***

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table 4: Differences in Integration between non-reservation and reservation students (Elite vs. Non-elite)

	Start of Year 1 Differences		End of Year 2 Differences		Start of Year 3 Differences		End of Year 4 Differences	
	Elite	Non-elite	Elite	Non-elite	Elite	Non-elite	Elite	Non-elite
Non-reservation – Reservation	-0.31***	-0.03	-0.40***	0.10***	-0.39***	-0.09***	-0.35***	0.08***

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Conclusions

Social integration levels fall significantly for reservation students in non-elite colleges. This highlights the need to introduce college level policies that foster integration for reservation students in non-elite colleges. At the same time, non-reservation students at elite colleges are less integrated than their reservation counterparts. This highlights the need to introduce college level policies that foster integration for non-reservation students in elite colleges.