# Backlash or Bonding: Effect of an Integration Policy in the Context of Affirmative Action*

Balasai Vanukuri†

November 17, 2026

**Latest version:** Click here

## Abstract

Do policies that promote cross-caste contact expand economic opportunities and increase support for affirmative action? I study this question by exploiting random assignment of first-year roommates at a highly selective public university in India, using original survey data on 2,267 students across two cohorts. A theoretical framework of social integration guides my analysis: students allocate scarce social time between within-group ties, which provide belonging and social support, and cross-group ties, which can expand economic opportunities. One year after assignment, lower-caste students in mixed-caste rooms have better grades but worse mental health than their caste peers in same-caste rooms, while upper-caste students' grades decline. Data on social interactions and help exchanges shed light on the mechanisms: lower-caste students gain academic help but lose social support, while upper-caste students lose same-caste academic collaborations. Consistent with these frictions, students are more likely to choose same-caste roommates when given the choice in the second year. Three years later, these costs extend to the labor market: upper-caste students receive 20% lower internship stipends, while lower-caste students are less likely to receive a summer internship offer. Cross-caste contact initially increases both groups' support for affirmative action; by year three, however, mixing reduces upper-caste support for employment reservations. Overall, cross-caste contact narrows academic gaps but entails asymmetric economic and psychological costs, shaping subsequent social choices and attitudes toward affirmative action.

**Keywords:** Affirmative action; caste integration; intergroup contact; labor market outcomes; mental health
**JEL Classification:** I23; J15; Z13

*I am grateful to my supervisors Karen Macours and Oliver Vanden Eynde for their invaluable advice and constant support, to Suanna Oh, Nishith Prakash, Liam Wren-Lewis for their invaluable feedback throughout the project, to Abhijit Banerjee for his guidance during my visit at MIT and their continued support thereafter. I thank David Atkin, Giorgia Barboni, Luc Behaghel, Simone Schaner, Denis Cogneau, Andrea Cornejo, Oscar Diaz, Kyle Emerick, Marcelo Gantier, Nina Guyon, Andreas Kotsadam, Eliana La Ferrara, Sylvie Lambert, Paola Mallia, David Margolis, Ben Olken, Hector Paredes, Sourabh Paul, Imran Rasul, Vrinda Sharma, Frank Schilbach, Akiko Suwa-Eisenmann, and Duncan Webb for helpful comments and suggestions. I also thank seminar participants at PSE, MIT, Tufts, and Northeastern University. Aditya Gupta, Ananya, Vikash Meena, and Divyanshu Verma provided invaluable support in coordinating fieldwork. Sumit Parashar and Quest provided invaluable assistance with survey logistics. This work was generously supported by EUR-PgSE, the French National Research Agency (ANR-17-EURE-0001), CEPREMAP, the Chaire PEMS at PSE, the Development Research Group at PSE, and the Weiss Fund for Research in Development Economics. This study was pre-registered in the AEA RCT Registry under the unique identifying number AEARCTR-0013944. The study was approved by the Institutional Review Board at The Paris School of Economics. All errors are my own.

†Paris School of Economics. Email: balasai.vanukuri@psemail.eu.

# 1 Introduction

Social connections across groups can promote economic mobility (Chetty et al., 2022a, 2022b) and improve intergroup attitudes (Lowe, 2025; Pettigrew and Tropp, 2006). On the contrary, social divisions can hinder cooperation and economic performance (Alesina and La Ferrara, 2005b; Hjort, 2014). College is a formative period in which students build social connections that can shape their subsequent economic opportunities (Barrios-Fernández et al., 2026) and broader social and psychological outcomes (Londoño-Vélez et al., 2026). Yet the formation of cross-group connections in higher education may face two constraints. First, students from different social groups often have limited opportunities to interact (Currarini et al., 2010; Marmaros and Sacerdote, 2006), partly because access to selective colleges is shaped by social advantage (Chetty et al., 2026). Second, even when students from different groups meet, differences in social identity (Akerlof and Kranton, 2000) and socioeconomic background (Chetty et al., 2022b; Mayer and Puller, 2008) can impede relationship formation.

Affirmative action (AA) can address the first constraint by expanding access for historically marginalized groups and changing the social composition of selective institutions. Beyond its objectives of promoting equity and economic mobility,[1] this compositional change creates opportunities for cross-group interaction and may reduce social segregation. However, greater exposure need not translate into meaningful relationships when social frictions remain a barrier to their formation (Chetty et al., 2022b). Beyond identity and socioeconomic differences, resentment toward AA[2] may further limit the formation of cross-group ties, even when students share the same institutional spaces. This raises the question of whether institutions can shape interactions after admission. Colleges influence day-to-day contact through policies governing the assignment of roommates, classmates, and study groups, creating opportunities for sustained intergroup interaction (Bertrand and Duflo, 2017; Lowe, 2025). Whether such contact fosters cross-group relationships and affects students' academic and labor-market outcomes and psychological well-being is important in its own right. It may also shape broader social divisions by influencing attitudes toward affirmative action. How policies promoting cross-group contact jointly affect individual outcomes and attitudes toward AA remains less understood.

This paper fills this gap by studying a caste integration[3] policy implemented after admission at a selective university in India. Exploiting the random assignment of first-year roommates, I ask three questions. First, how does inter-caste contact affect academic and labor-market outcomes for upper- and lower-caste students? Second, what are its effects on psychological well-being? Third, how does contact shape students' support for affirmative action, and do these attitudes evolve

[1] India's AA relies primarily on caste-based quotas in education, public employment, and politics. They increase the representation of historically marginalized groups (A. Deshpande, 2013) and are associated with gains in educational attainment and earnings (Bagde et al., 2016; Bertrand et al., 2010), political empowerment (Chin and Prakash, 2011; Gulzar et al., 2020), and upward mobility (Asher et al., 2024).

[2] Protests by upper-caste groups against AA, including those held recently at Jantar Mantar, Delhi in August 2026 (ThePrint, 2026), illustrate such opposition.

[3] I use caste integration to refer to the policy of bringing students from different caste groups together, here through roommate assignment. It describes the treatment of inter-caste contact, not the outcome of caste-relationships.

over time? The Indian higher education setting provides a particularly useful context for examining these questions. Affirmative action operates alongside highly competitive admissions, bringing together students from different caste groups who differ substantially in entrance-examination scores and social advantage. Bringing these students together can therefore create opportunities for new social connections, but may also generate social tensions. I consider three channels through which inter-caste contact may shape student outcomes.

First, peer transmission can generate gains by connecting lower-caste students to better-prepared peers and to networks that facilitate access to high-paying jobs (Rivera, 2015). These cross-caste ties can provide access to resources and opportunities beyond students' existing networks, generating bridging social capital (Granovetter, 1973; Putnam, 2000). Second, social frictions may constrain the formation of cross-caste relationships. Differences in social identity and socioeconomic background, as well as backlash against affirmative action, can generate tensions between students. At the same time, inter-caste contact may reduce prejudice (Allport, 1954; Pettigrew and Tropp, 2006) and opposition to AA, potentially weakening existing social divisions. Third, network reallocation may entail costs if forming cross-caste relationships diverts time and effort from developing within-group ties. These ties can provide access to economic opportunities (Munshi, 2019), psychological support, and a sense of belonging, generating bonding social capital (Putnam, 2000). Moreover, if the returns to social relationships differ depending on whether they are formed within or across social groups (Fleischman, 2026), the overall effects of integration may differ between upper- and lower-caste students, given their differences in initial academic preparation and access to social networks. These effects may also evolve as students progress through college and enter the labor market.

I combine original survey data from two cohorts of approximately 1,200 students each, who entered a highly selective engineering institution in India in 2023 and 2024, with administrative records on roommate assignments, entrance-examination scores, and caste status. The eligible analysis sample comprises 2,267 students assigned to two- or three-person rooms. Both cohorts were surveyed one year after entering college. The 2024 cohort was also surveyed during the first week of college, providing baseline measures before substantial roommate interactions had taken place, while the 2023 cohort was followed up three years after entry to capture medium-run outcomes. Response rates exceeded 85% across all survey waves.

My empirical strategy exploits the random assignment of first-year roommates to estimate the causal effects of caste integration, comparing students assigned to mixed rooms vs same-caste rooms. I validate this random assignment by comparing observed mixing rates with theoretical probabilities based on hostel-level caste composition and room capacity, and by testing balance in predetermined student characteristics. I estimate treatment effects separately for lower- and upper-caste students to allow the consequences of integration to differ across groups. My primary outcomes are academic performance, internship outcomes[4], and mental health. I also examine

[4]Internship outcomes provide a proxy measure of labor-market outcomes, as students have not yet entered the full-time labor market. The internships are relatively prestigious in this context, with average and median stipends equivalent to approximately 70% and 55% of the corresponding average and median first-job salaries, respectively.

attitudes toward affirmative action in the short and medium run.

Results show that for lower-caste students, integration yields academic gains at a psychological cost: first-year GPA rises by 0.091 standard deviations (s.d.), but mental health declines by 0.082 s.d. For upper-caste students, the academic effect is reversed: GPA falls by 0.103 s.d., accompanied by, statistically insignificant decline in mental health (0.062 s.d.). Consequently, while mixed-room assignment reduces the overall caste achievement gap by 21.1%, this convergence comes at an academic cost to advantaged students and a combined psychological cost.

To interpret these findings, I develop a model of peer transmission and social integration. Academic performance depends on the transmission of academic capital from better- to less-prepared students, alongside a positive fixed cost of social mixing. A key assumption is that transmission is asymmetric: students benefit from academically stronger peers but do not experience an equivalent academic loss from having less-prepared peers. The model predicts that lower-caste students gain academically from better-prepared roommates, but social-mixing costs may offset these gains. For upper-caste students, the model predicts lower academic performance in mixed-caste rooms relative to same-caste rooms, reflecting both the costs of social mixing and the foregone peer-transmission gains that same-caste rooms would provide.

In the model individuals allocate scarce social time between building bonding and bridging capital, shaping their mental well-being and labor-market outcomes. Social alignment increases the bonding returns to roommate interactions, while social distance can create opportunities to accumulate bridging capital through access to new information and networks, with these returns depending on the roommate's social advantage.[5] Individuals choose between in-room interactions and outside social environments, such as student clubs, based on the returns to bonding and bridging capital in each setting. This choice depends on caste alignment, students' own advantage, which shapes their access to alternative social environments, and their roommate's advantage, which affects the bridging returns to in-room interactions. The model predicts that lower-caste students rely more on roommates for bonding capital, whereas upper-caste students are better able to diversify their social networks. Caste misalignment can therefore generate a trade-off between mental well-being and internship outcomes, with the balance depending on the roommate's advantage and students' access to outside options. Finally, I model bridging capital, through weak ties, as facilitating access to lower-stakes opportunities such as early college internships, while bonding and bridging capital are complements in accessing more competitive, higher-stakes opportunities such as elite internships.

My analysis on mechanisms is guided by the model predictions. The academic gains for lower-caste students appear to reflect peer transmission. The mixed-room effect falls from 0.091 to 0.02 standard deviations and becomes statistically insignificant when controlling for roommates' entrance-exam scores, consistent with gains from exposure to more academically prepared peers. This interpretation is further supported by lower-caste students reporting more academic

[5]Social advantage refers to family income, parental education, and schooling quality, among other factors. It is distinct from, but correlated with, academic performance.

help from upper-caste roommates, while I find little evidence of increased study effort or group work. By contrast, the academic losses for upper-caste students are not explained by exposure to less-prepared roommates. Instead, upper-caste students in mixed rooms report receiving less help from their roommates and exhibit fewer collaborative study interactions, suggesting that the losses may reflect reduced academic collaboration rather than peer quality. I cannot, however, rule out other channels, including effects of mental health or caste-related social distance on academic performance.

I next examine social interactions in mixed- and same-caste rooms to understand the mechanisms underlying the adverse mental well-being effects of caste mixing. Descriptive patterns support two key features of the model. First, lower-caste students interact more with roommates in same-caste rooms and participate less in student clubs than upper-caste students in same-caste rooms, suggesting greater dependence on in-room relationships. Consistent with this pattern, lower-caste students in mixed rooms report fewer social interactions with roommates, including eating together and going out, as well as lower-quality interactions, reflected in less psychological and financial support. Second, upper-caste students in mixed rooms experience frictions associated with reduced access to within-caste networks, consistent with their reporting greater exclusion from study groups. Their mental well-being effects disappear in three-person rooms when another upper-caste roommate is present, suggesting that access to same-caste peers can buffer the psychological costs of mixing. Finally, I examine roommate choices in the second year. Consistent with social frictions in mixed rooms, students become more likely to sort into same-caste rooms following the initial randomized assignment. The share of mixed rooms declines by 8.3 percentage points.

These short-run results suggest that mixing imposes academic costs on upper-caste students, while lower-caste students' academic gains come at a cost to their mental health. As students adjust to the institute's environment, expand their social networks beyond their assigned roommates, and transition to specialized coursework, the initial effects of mixing may attenuate or compound. To examine these dynamics, I conducted a follow-up survey of the 2023 cohort three years after entry, two years after roommate randomization ended.

I estimate the medium-run intent-to-treat effects of the initial roommate assignment. Two findings emerge. First, the effects of caste integration on grades largely persist through the third year, while the adverse treatment effects on mental health fade for both upper- and lower-caste students. However, mental health deteriorates over time among students assigned to both mixed-caste and same-caste rooms, with a larger decline among lower-caste students. Consequently, the mental-health gap between upper- and lower-caste students widens from near zero at entry to 0.161 standard deviations by the third year. Second, the initial mixed-room assignment has persistent consequences for labor-market outcomes. By the third year, upper-caste students initially assigned to mixed-caste rooms earn INR 32,542 less in internships (a 20% reduction, approx 338 US dollars[6]) than their counterparts initially assigned to same-caste rooms. These internships are

[6]Converted at an exchange rate of INR 96.1 per US dollar.

consequential: mean stipends are five to six times larger than in the second year and often provide a pathway to permanent employment. By the third year, lower-caste students in mixed rooms are 7.3 percentage points less likely to receive a summer internship offer. Their internship stipends are also lower, by INR 9,535 (14.2%, 99 US dollars), although this estimate is imprecise.

Finally, I examine whether caste integration affects attitudes toward affirmative action (AA). In the short run, support for AA increases among both lower- and upper-caste students, with each group revising its beliefs about how the policy affects the other group. Among lower-caste students, support increases by 0.110 SD ($p < 0.05$), driven by the belief that quotas are not unfair to upper-caste students. Among upper-caste students, support increases by 0.115 SD ($p < 0.05$), driven by the belief that affirmative action is justified on social justice grounds. I conduct three heterogeneity tests to examine whose beliefs change following caste mixing. The results suggest that mixing induces greater belief updating among students whose prior beliefs or social experiences differ from those of their roommates. First, students who enter college believing that entrance-exam performance reflects merit rather than circumstances are more likely to revise their views. Second, among upper-caste students, the effects are strongest for those with the fewest pre-college cross-caste friendships and are concentrated in support for policies benefiting reserved groups—the dimension of AA about which they were least informed at baseline. Third, higher-performing students become more supportive of AA following caste mixing. In the medium run, the gains fade among upper-caste students, with negative point estimates for both beliefs about AA's costs and its social justice justification, while effects among lower-caste students remain positive but only marginally significant. Across policy domains, caste integration significantly reduces upper-caste support for employment reservations, while the negative effect on support for political reservations is imprecisely estimated. Among lower-caste students, estimates are positive but statistically insignificant across employment, politics, and education.

This paper contributes to four strands of the literature. First, I contribute to the literature on social capital and economic mobility. Classical work theorizes that social capital shapes human capital accumulation and labor-market opportunities (Coleman, 1988; Granovetter, 1973), raising concerns about its decline (Putnam, 2000; Putnam et al., 2003). Recent work decomposes cross-class friendship gaps into differences in exposure and tie formation (Chetty et al., 2022b). Higher education institutions shape social connections that affect career outcomes (Michelman et al., 2022; S. D. Zimmerman, 2019), long-run mobility (Barrios-Fernández et al., 2026), and access to higher-status friends and partners (Londoño-Vélez et al., 2026). With tertiary education enrollment rising rapidly across many low- and middle-income countries, social capital formation during these formative years can have long-term consequences for economic growth and inequality. Yet evidence on how social capital forms in higher education and transmits across groups remains limited in low- and middle-income countries. I extend this literature by studying the returns to cross-caste exposure and interactions in India, where cross-group relationships are shaped not only by socioeconomic differences but also by identity-based frictions. Randomized roommate assignment at a highly selective engineering institution isolates the returns to cross-caste peer exposure from the

broader benefits of selective university access, including institutional resources and signaling benefits (Barrera-Osorio and Bayona-Rodríguez, 2019; Sekhri, 2020). Randomized roommate designs have been used to study academic peer effects in developing-country settings (Ahimbisibwe et al., 2026; Corno et al., 2022) and in India (Hasan and Bagde, 2013; Jain and Kapoor, 2015), highlighting mechanisms such as reduced prejudice, cultural similarity, and the transmission of academic ability. My finding that reserved-group students improve their academic performance when assigned to better-prepared roommates is consistent with this evidence. I extend this literature in two ways. First, I document a broader set of consequences of cross-caste integration for reserved-group students, showing that academic gains coexist with costs to psychological well-being and labor-market opportunities. Second, I show that integration also imposes costs on upper caste students. Whereas prior roommate studies find limited adverse academic effects for this group, I document declines in academic performance and internship stipends among students assigned to mixed-caste rooms, consistent with forgone academic collaborations and support from within-group networks.

Second, I contribute to research on peer effects and network formation (Banerjee et al., 2024; Bramoullé et al., 2016; Jackson et al., 2022; Sacerdote, 2011; D. J. Zimmerman, 2003). Peer effects depend on both assigned peers' characteristics and the relationships through which their inputs are transmitted (Carrell et al., 2013; List and Uchida, 2024), but less is known about which resources flow through these relationships and how transmission varies across groups. Using rich data on roommate interactions, academic, psychological and financial support, social activities, and participation in student clubs and leadership, I trace how assigned relationships shape access to resources and social participation. In mixed rooms, academic help flows from upper-caste to lower-caste students, while psychological and financial support is less likely to flow through cross-caste relationships. This pattern is consistent with the distinction between bridging and bonding social capital (Fleischman, 2026; Putnam, 2000).

Third, I contribute to the literature on how intergroup contact shapes support for redistributive policies. Beliefs about fairness and social mobility shape redistributive preferences (Alesina and Giuliano, 2011; Alesina and La Ferrara, 2005a; Alesina et al., 2018), while contact can reduce prejudice and improve social cohesion, particularly when interactions are cooperative (see Lowe, 2025 for a review; Lowe, 2021; Mousa, 2020). However, much of this literature examines attitudes toward outgroups rather than support for redistributive policies that bring groups into contact. The closest study, Rao, 2019, examines affirmative action (AA) admissions to private primary schools in India and finds that exposure to poorer classmates makes wealthier students more prosocial and less likely to discriminate against them. I extend this work by examining how randomized cross-caste roommate assignment shapes support for AA among lower- and upper-caste students. I show that the effects of intergroup contact on redistributive preferences vary across groups and policy dimensions, and evolve over time. In the short run, both groups become more supportive of AA policies concerning the other group. Three years after entry, however, upper-caste students' initial gains in support fade away, while their support for employment declines suggesting that

the economic costs of integration may outweigh the initial effects of social learning and generate backlash against AA.

Fourth, I contribute to the literature on caste and economic outcomes in India by studying how affirmative action (AA) shapes cross-caste connections within educational institutions. While prior work examines the effects of AA on access to higher education and outcomes after admission (Bagde et al., 2016; Bertrand et al., 2010; Cassan, 2019; Frisancho and Krishna, 2016), related research documents how caste shapes economic interactions, technology diffusion, schooling, occupational choices, and labor supply (Anderson, 2011; Emerick, 2018; Munshi, 2019; Munshi and Rosenzweig, 2006; Oh, 2023). Using randomized roommate assignment, I show that mixed-caste rooms reduce social interaction and affect academic performance, internship outcomes, and psychological well-being for both upper- and lower-caste students.

The rest of the paper is organized as follows. Section 2 describes the institutional context and data. Section 3 presents descriptive statistics. Section 4 describes the empirical specification. Section 5 presents the effects of roommate assignment on the primary outcomes. Section 6 develops a model and derives its key predictions. Section 7 uses the predictions of the model to examine the mechanisms underlying the empirical results. Section 8 studies the medium-run effects of integration. Section 9 examines short- and medium-run effects on support for affirmative action (AA), and Section 10 concludes.

## 2 Context and Data

### 2.1 Affirmative action, elite colleges, and merit

The institute is an elite public engineering school that enrolls approximately 1,200 undergraduate students each year. Affirmative action in India's public higher education is largely caste-based and through fixed quotas. Central educational institutions reserve 27% of seats for Other Backward Classes (OBC, non-creamy-layer), 15% for Scheduled Castes (SC), and 7.5% for Scheduled Tribes (ST). OBCs comprise castes classified as socially and educationally disadvantaged, while SCs and STs include groups that have historically faced severe caste-based discrimination and social exclusion.[7] An additional 10% of seats are reserved under the Economically Weaker Sections (EWS) category for students who are not eligible for the OBC, SC, or ST quotas. I classify EWS students together with non-reserved students as upper-caste throughout the analysis. The admissions system also includes supernumerary seats for women, introduced in elite engineering institutions in 2018 to increase women's representation without reducing seats available through other admission categories. All the quotas are implemented at specialization-college level.

Selective engineering colleges provide an important setting in which affirmative action intersects with highly competitive academic selection. Caste-based quotas have been part of the insti-

[7] I refer to them collectively as lower-caste students for brevity, although these categories are institutionally defined and internally heterogeneous. OBCs, in particular, are not stigmatized in the same way as SCs. Pooling these groups is therefore a modeling choice that allows me to analyze the effects on students who enter through caste-based quotas.

tutional environment of India's most selective engineering colleges since 1973 and remain among the country's most debated social policies (A. Deshpande, 2013; Henry and Ferry, 2017). Admission is based on the Joint Entrance Examination (JEE), one of India's most competitive national examinations, taken at the end of grade 12 in mathematics, physics, and chemistry. Each year, approximately 1.6 million candidates register for the examination, competing for around 16,000 undergraduate seats across these public engineering colleges. The JEE provides a common metric for ranking applicants and is central to the meritocratic model of selection in India's engineering institutes (Subramanian, 2015). However, reservation policies alter how examination performance translates into admission: applicants compete within admission categories with category-specific cutoffs published annually. Students often use previous years' cutoffs to assess their admission chances.[8] Consequently, students entering the same specialization can have substantially different entrance-examination scores across admission categories (Bagde et al., 2016; Bertrand et al., 2010). This combination of common academic ranking and category-specific admission thresholds is a defining feature of admission to public higher education in India.

These differences in examination performance reflect, in part, the unequal conditions under which students prepare for the JEE. Preparation depends on prior schooling, family resources, coaching, and educational and social networks, while caste and economic status remain closely related in India (A. Deshpande, 2011). The JEE thus provides a common measure of academic achievement while also reflecting differences in prior opportunities. This relationship between social background and achievement is central to scholarship on merit and engineering education in India (S. Deshpande, 2013). As Subramanian, 2015 argues, the institutional history of these colleges illustrates how advantages associated with caste, education, and social networks can be converted into achievements understood as individual merit. This perspective does not imply that the JEE fails to measure academic ability; rather, it highlights that achievement is produced under unequal conditions and that the interpretation of merit is shaped by social structures. These inequalities may also matter for peer interactions. Caste is not phenotypically ascriptive (A. Deshpande, 2011), and students from different parts of India may not know each other's caste when they first meet. However, conversation and social interaction can reveal signals of caste and social background that subsequently shape economic interactions and access to employment (A. Deshpande and Newman, 2007; Shukla, 2025; Thorat and Newman, 2010).

The stakes of these interactions extend beyond the classroom. Selective engineering institutes provide pathways into competitive labor markets, where students compete for internships, jobs, and occupations, and where college networks can facilitate access to information and opportunities. Evidence from other settings shows that attending elite colleges affects access to top jobs and incomes (Chetty et al., 2026; S. D. Zimmerman, 2019), while cross-group social connections can influence economic mobility (Chetty et al., 2022b). In India, formal-sector hiring is also shaped by social networks and caste (A. Deshpande and Newman, 2007; Jodhka and Newman, 2007).

[8] After receiving their ranks, students submit preferences over colleges and specializations, and seats are allocated using a modified deferred acceptance algorithm.

Peer interactions during college may therefore shape both students' academic experiences and the networks through which they access subsequent economic opportunities.

### 2.2 Room Allocation and the Natural Experiment

The institute is fully residential, with undergraduates assigned to one of 13 single-gender hostels for the duration of their degree[9]. Ninety-seven percent of students are assigned to two- or three-person rooms; I exclude the remaining 3% in single or four-person rooms from the analysis.

Room assignment follows a two-stage process. First, central administration assigns students to hostels: for each specialization, an allocation matrix based on hostel vacancies and number of mentors from that specialization. Once the number of vacancies is decided, students are distributed randomly across hostels, stratified by caste category. Second, within each hostel, administrators assign students to specific rooms, either sequentially from a college-ID-sorted list or in order of move-in arrival, a method that is consistent within each hostel across cohorts. College IDs encode the year of entry and specialization, together with a randomly assigned, unique four-digit number for each student. The list sent to hostels from college administration does not include caste information or entrance exam score ranks. In the baseline survey for the cohort, only 1% of students reported knowing their roommate before college, and Figure 1 shows the observed share of mixed-caste rooms closely matches the theoretical share under random assignment in every hostel, regardless of allocation method. Approximately 5% of students changed rooms during the first year. I also show balance of observables explained in detail in Section 4.1.

### 2.3 Data and Outcomes

I collected data from two cohorts, entering in 2023 and 2024, in three phases: baseline data from the 2024 cohort during orientation week in July 2024; a cross-sectional survey of the 2023 cohort between August and October 2024, roughly one year after their own roommate assignment; and a one-year follow-up with the 2024 cohort in August 2025. I later returned to the 2023 cohort in April 2026 for an additional wave, described below, to measure medium-run outcomes.

All surveys were self-administered online, with in-person sessions and subsequent tracking to facilitate participation and follow-up. Students were recruited through hostel orientation sessions and subsequent hostel-level follow-up. The study was described as a study of "student life in college and how it changes over time," without reference to caste or roommate assignment. Students received INR 200 for the baseline survey and INR 300 for the endline and follow-up surveys. The survey protocol, sampling and tracking procedures, construction of student and hostel lists, respondent identification, and procedures for detecting and resolving duplicate submissions are described in Appendix Section A.

The 2024 cohort's baseline survey was administered during orientation week, when students had had minimal contact with their roommates: 90% of responses were collected within two to

[9] 11 male hostels and 2 female hostels

seven days of move-in, and the remainder within the following week.[10] Table A1 reports detailed survey response rates under alternative definitions of response. The 2024 cohort achieved a baseline response rate of 86.4%, with 82% of eligible students completing the full survey. The one-year follow-up achieved a response rate of 92.1%, with 90.3% completing the full survey. The 2023 cohort was surveyed using a different protocol because of logistical constraints. The initial response rate was 71.8%. I subsequently drew a simple random sample of 25% of initial nonrespondents for intensive follow-up. Of those selected, 73% completed the survey, yielding an effective response rate of 92.8% (90.2% for full survey completion), following Kling et al., 2007. This two-phase sampling procedure provides the basis for the survey weights used in the analysis.[11] All response rates are calculated relative to the eligible sample of students who lived in double- or triple-sharing rooms, which represents 94% of the two cohorts combined.[12]

**Medium-run follow-up (2023 cohort).** Because the 2023 cohort entered one year before the 2024 cohort, I conducted an additional follow-up survey approximately three years after their first-year roommate assignment. The response rate for this survey was 89.4%, as reported in Table A1. This wave add two outcomes not available in the first-year data. First, third-year summer internship placement, both completion and monthly stipend, capturing outcomes organized primarily through the institute's placement cell and substantially higher-stakes than the first-year internship measure. Second, a broader affirmative-action attitudes module, extending the first-year AA items to test whether attitude shifts generalize beyond the campus-specific setting to diversity and inclusion policies in the workplace.

**Administrative and institutional data.** I complement the survey data with JEE examination records published by the institute, containing exam ID, JEE score and rank, admission category, institute, specialization, and examination centre. I match survey respondents to these records using their self-reported JEE rank within cohort and specialization, with examination-centre location, gender, and category-specific cutoff ranks used to resolve ambiguous or inconsistent matches. For remaining unmatched observations, I use publicly available rank information, including coaching-institute rank lists and students' public professional profiles. This procedure identifies JEE records for 99% of the 2024 cohort and 95% of the 2023 cohort.

I obtain first-year room-allocation lists separately and identify roommates using room numbers and student names, linking each student to their caste category through JEE records. For the 2024 cohort, all room-allocation data come from administrative lists. For the 2023 cohort, administrative lists cover 9 of the 13 hostels. For the remaining four hostels, I reconstruct room assignments using students' reported room numbers and roommate names, following up to clarify flagged cases. I use the initial assignment from administrative records and The construction

[10] This timing is directly relevant to interpreting the baseline measures in Fact 3 and several mechanism tests in Section 7; see the discussion there.

[11] Among initial nonrespondents, each student had a 25% probability of being selected for intensive follow-up. Accordingly, initial respondents receive a weight of 1, while selected initial nonrespondents receive a weight of 4 in analyses accounting for this sampling design.

[12] The remaining 6% either did not live in hostels, were assigned single rooms in their first year, or lived in rooms shared by four students.

and validation of the JEE measures, caste categories, and hostel-room assignments are described in Appendix Section A.

## 2.4 Primary Outcomes

### 2.4.1 Academic and Labor-Market Outcomes

**Academic outcomes** The primary short-run academic outcome is first-year GPA. In the medium-run follow-up, I observe second-year GPA and GPA at the time of the survey, corresponding to cumulative GPA through the fifth semester.

**Labor-market outcomes** I measure labor-market outcomes using summer internship offers and internship stipends in the summers following the first, second, and third years of study.

### 2.4.2 Mental Health and Attitudes

**Mental health** I measure mental health using three modules: the PHQ-4 clinical screener, comprising two GAD-2 anxiety items and two PHQ-2 depression items; a relative well-being module comparing current and pre-college well-being across four dimensions; and a college-worries module covering academics, internships, discrimination, cultural and language differences, and homesickness. I construct a separate index for each module and combine the three module-level indices into a composite Mental Health Index. Higher values indicate better mental health.

**Support for affirmative action** I measure attitudes toward affirmative action using five-point Likert-scale items on the perceived costs and benefits of affirmative action for reserved- and non-reserved-category students. I construct separate indices capturing support based on perceived costs and benefits for each group, as well as a composite index combining both. Higher values indicate greater support for affirmative action.

All indices in the paper follow the procedure in Kling et al., 2007. I standardize each component using the mean and standard deviation among students assigned to non-mixed rooms, the control group. I then construct each index as an unweighted average of its standardized components. For composite indices, I first construct the component indices and then take an unweighted average across the available component indices. When a respondent is missing one or more components, I calculate the index using the non-missing components.

## 2.5 Secondary Outcomes

**Social interactions** I measure interactions with roommates along several dimensions, including time spent studying together and participation in social activities such as eating together, going out, and playing sports. I combine these measures into an index of social interaction. I also ask students whether they have received help from or provided help to each roommate with exam preparation, obtaining internships, dealing with stress, financial assistance, and access to social and professional networks. I construct separate indices of help received and help provided, as

well as measures of the types of help exchanged. I additionally measure help received from other hostel mates.

**Social networks** I measure the number of close friends within the institute, the number of close friends at other selective institutions, and the share of close friends belonging to a different caste.

**Study effort and student activities** I measure self-reported study time, participation in student clubs, and whether students hold leadership positions in clubs.

**Roommate choice** From the second year onward, students choose their own roommates. I observe these choices in hostel-allocation records and examine whether first-year mixed- versus same-caste roommate assignments predict subsequent roommate choices along caste lines.

## 3 Descriptive Stats

Table 1 presents summary statistics on students' economic background, social capital, college preparation, pre-college test scores, mental health, and attitudes toward affirmative action. These characteristics also provide key descriptive facts that motivate the model[13].

**Fact 1: Upper-caste students have socioeconomic advantage.** From Panel A of Table 1, upper-caste students are more likely to have parents with higher levels of education, to know someone who attended an elite engineering college or studied engineering, and to come from wealthier households, as measured by income and assets. They are also less likely to take out education loans.

**Fact 2: Upper-caste students enter college with stronger academic performance.** From Panel B of Table 1, their entrance-exam scores are about 60.4 points (1.08 standard deviations) higher than those of lower-caste students. They are also 13.6 percentage points less likely to take an additional year to clear the exam. Upper-caste students begin preparing for the exam approximately 0.3 years earlier, although spending on coaching, which is relatively standardized across students, is similar across groups. Lower-caste students do not appear to exert less effort in terms of study hours. Upper-caste students also have small but higher academic performance in high school, as measured by their Class 10 and Class 12 scores.

**Fact 3: Upper-caste students enter college with more advantaged friendship networks.** From Panel C of Table 1, Upper-caste students report more close friends and fewer friends who did not clear the entrance examination. They also have slightly more friends who attended IITs. In contrast, lower-caste students have more caste-diverse friendship networks.

**Fact 4: Lower-caste students hold more favorable views of affirmative action.** Panel D of Table 1 shows that lower-caste students have higher scores on both a reserved group index, capturing perceived costs and benefits of affirmative action for reserved-group students, and a non-reserved-group index, capturing perceived costs and benefits for non-reserved-group students

[13]Panels A and B draw on both the 2023 and 2024 cohorts; the variables in Panels C, D, and E were collected only for the 2024 cohort.

(0.679 and 0.825 s.d., respectively). The same pattern shows up in a policy preference: lower-caste students favor allocating a larger share of seats to reserved groups, 24 out of 100 on average, compared with 10 among upper-caste students, though both groups favor a share well below the actual reservation rate of 50%. Lower-caste students are also less likely to endorse the view that the entrance examination is cleared solely through merit. Both groups are equally likely to believe opportunities inside college are equal.

**Fact 5: Mental health at the start of the academic year is broadly similar across caste groups, but differs in specific dimensions.** Panel E of Table 1 shows that the overall Mental health index is similar across caste groups at the start of the academic year. Lower-caste students report higher relative well-being compared to their time preparing for the entrance exam, but also higher levels of worry, particularly about the social aspects of college life[14]. They are also more satisfied with their specialization or department. There is no statistically significant difference in the PHQ-4 index at the start of the academic year.

### 3.1 Roommate Interactions and Academic and Social Support

Table 2 documents frequent academic and social interactions among students in same-caste rooms, with some differences by caste.

**Substantial Academic and social interactions exist between roommates.** Studying together at least once a week is reported by 46.2% of upper-caste and 57.4% of lower-caste students. 66% of students in both groups report receiving substantial help from a roommate with exam preparation. Social interactions are also common: 59.7% of upper-caste and 65.1% of lower-caste students report eating together at least once a week, while 30.4% and 34.3%, respectively, report going out together. The caste differences in these social activities are small and not statistically significant.

**Lower-caste students report greater exchanges of support.** Studying together at least once a week is reported by 46.2% of upper-caste and 57.4% of lower-caste students. About 66% of students in both groups report receiving substantial help from a roommate with exam preparation. Lower-caste students are more likely to provide emotional support and report greater exchanges of financial support. Social interactions, such as eating and playing sports together, are also more common among lower-caste students. I report support exchanges at the extensive and intensive margins in Table A2. The differences are driven by the extensive margin: lower-caste students are more likely to both seek and provide support. Conditional on being asked for help, upper-caste students are more likely to provide job-related assistance, but there are no significant caste differences in emotional or financial support.

**Upper-caste students are more active in clubs and hold more positions** Upper-caste students participate more in student clubs that provide opportunities to build networks and skills (Table A3). They are significantly more likely to be active members of cultural clubs, technical clubs, institute student bodies, and hostel student bodies, and to hold leadership positions in these or-

[14]Because this measure was collected after room assignment, it may already reflect early worries induced by the treatment, I therefore do not use it as a baseline control, to avoid conditioning on a post-treatment variable.

ganizations. Sports and volunteering clubs are exceptions: participation shows no clear caste differences, consistent with institutional requirements that students complete 100 hours of activities through sports, volunteering, or scouts.[15]

## 4 Empirical Specification

I estimate the effect of mixed-caste room assignment on a range of outcomes using the following baseline specification, estimated on the full sample and separately on the subsamples of upper- and lower-caste respondents:

$$Y_{ikcst} = \beta_0 + \beta_1 \text{Mixed}_{ikc0} + \beta_2 Y_{ikcs0} + \gamma_{kc} + \delta_{sc} + X_{ikcs0} + \varepsilon_{ikcst} \tag{1}$$

where $Y_{ikcst}$ is the outcome for student $i$, in hostel $k$, cohort $c$, specialization $s$, at follow-up time $t$, and $Y_{ikcs0}$ is the baseline value of the same variable.[16] The treatment variable $\text{Mixed}_{ikc0}$ equals one if the student is assigned a room with at least one different-caste roommate. $\gamma_{kc}$ is a vector of hostel-by-cohort fixed effects, controlling for systematic differences across hostels, such as room size, gender composition, and hostel size, and for differences in student composition across cohorts. $\delta_{sc}$ is a vector of specialization-by-cohort fixed effects, controlling for differences in students' academic backgrounds. $X_{ikcs0}$ is a vector of controls, which includes the number of roommates. Standard errors are clustered at the room level, the level at which roommate assignment is determined following Abadie et al., 2017. As a robustness check against correlation in outcomes that extends beyond the room, I additionally report p-values clustered at the wing level.

The regression is estimated separately for upper-caste and lower-caste students, allowing the effect of roommate assignment to vary across groups. The coefficient of interest, $\beta_1$, is the intent-to-treat effect of inter-caste mixing on $Y$, given random assignment of roommates within the hostel and the cohort. I report ITT estimates.

I use additional variation from three-sharing rooms, distinguishing partially and fully mixed assignments:

$$Y_{ikcst} = \beta_0 + \beta_1 \text{Fully Mixed}_{ikc0} + \beta_2 \text{Partial Mixed}_{ikc0} + \gamma_{kc} + \delta_{sc} + X_{ikcs0} + \varepsilon_{ikcst} \tag{2}$$

where $\text{Partial Mixed}_{ikc0}$ equals one for a three-person room with exactly one different-caste roommate, and $\text{Fully Mixed}_{ikc0}$ equals one if all roommates are a different caste; two-person rooms are fully mixed by definition when different-caste. The omitted category is a same-caste room. This specification tests whether having at least one same-caste roommate moderates the effects of diversity in mixed rooms.

[15] Cultural festivals at these institutes are large-scale events that require broad student participation. Top leadership positions are typically held by club office bearers, while lower-level positions are also available to newer members.

[16] Baseline measures of mental health and affirmative-action attitudes are available only for the 2024 cohort. Where a baseline measure is unavailable, I replace it with zero and include a dummy for missingness.

### 4.1 Balance Tables

Appendix Tables A4, A5 and A6 examine balance on pre-treatment characteristics. Table A4 presents balance on observable socioeconomic indicators and pre-college characteristics for mixed versus non-mixed rooms. There are no systematic differences between mixed and non-mixed rooms for either lower- or upper-caste students, with joint F-test p-values of 0.181 and 0.296 for lower-caste and upper-caste students, respectively[17]. Table A6 reports the analogous test for the alternative partial-mixed and fully-mixed specification, restricted to the subsample of students in three-person rooms. There are no systematic differences between same-caste and partially mixed rooms (p-values of 0.789 and 0.408 for lower- and upper-caste students, respectively) or between same-caste and fully mixed rooms (p-values of 0.515 and 0.600, respectively).

Table A5 presents balance on pre-college networks, measured using baseline data for the 2024 cohort only, and similarly shows no systematic differences between mixed and non-mixed rooms for either group. Taken together with Figure 1, which shows that the observed proportion of mixed rooms closely matches the theoretical probability under random assignment, weighted by hostel size, these results support the identification assumption that roommate allocation within the hostel is effectively random.

#### 4.1.1 Attrition:

To address the concern that survey non-response may be related to room assignment, potentially biasing estimates even under random assignment, I examine whether item-level refusals and overall survey non-response are associated with mixed-room assignment, separately for upper- and lower-caste students. Table A7 reports attrition on baseline socioeconomic indicators and JEE preparation variables; Table A8 reports attrition on the mental health (PHQ-4) and academic (CGPA) outcomes used in the main analysis; and Table A9 reports attrition on affirmative-action attitude items. Across all three tables, differences in refusal and non-response rates between mixed and non-mixed rooms are small and almost uniformly statistically insignificant for both upper- and lower-caste students. These results suggest that attrition is not systematically related to treatment assignment.

[17]The only individual covariate showing imbalance in the balance table (Table A4) is the family income dummy, and this imbalance disappears when income is measured continuously. It appears to be driven by a small fraction of upper-caste students classified as economically weaker section (EWS), who are 6 percentage points more likely to be assigned to mixed rooms relative to a baseline mixing share of 73% (equivalent to roughly 14 students), a small share of the 1,100 upper-caste students in the sample. This pattern is driven largely by small hostel-by-gender-by-specialization strata: nearly all of the imbalance comes from strata among girls, who typically have only one or two EWS students per specialization, together with a small number of strata among boys in three-sharing rooms where specialization size is small. There is no systematic income difference between general-category upper-caste students and EWS upper-caste students across mixed and non-mixed rooms. I show robustness of main results to reservation category fixed effects and also explicitly controlling for family income, parents' education and high-school test scores.

# 5 Results

## 5.1 Main Outcomes: Short run 1 year after entering college

Table 3 reports the effects of mixed-caste room assignment on first-year grades, a composite mental health index (higher values indicate better mental health), and two dimensions of support for affirmative action: support in line with the policy's benefits and costs for reserved-category students, and support in line with its costs and benefits for non-reserved students. I find that caste mixing lowers grades for upper-caste students and improves them for lower-caste students, and it imposes mental health costs on both groups. Mixing also increases affirmative action support, but each group updates on the dimension concerning the other group's policy stake.

**Academic outcomes:** Upper-caste students assigned to mixed rooms score 0.103 s.d. lower at the end of the first year ($p < 0.05$) than upper-caste students assigned to same-caste rooms. In contrast, lower-caste students assigned to mixed rooms score 0.091 s.d. ($p < 0.1$) higher than their counterparts in same-caste rooms. Overall, mixing reduces the upper-lower caste achievement gap by 22%, relative to the 0.919 s.d. gap between lower- and upper-caste students in homogeneous rooms. This reduction in the gap doesn't come at the expense of average academic achievement: the pooled effect of mixing on grades is small, negative, and statistically indistinguishable from zero.

As additional checks, I find no significant heterogeneity in the grade effect of mixed-room assignment by gender (Table A10). For room composition, point estimates for upper-caste students suggest a somewhat smaller GPA reduction in partially mixed rooms (-0.085) than in fully mixed rooms (-0.112), but these estimates are not statistically different from each other. For lower-caste students, effects do not differ significantly by room composition.

**Mental health:** Mixed-room assignment worsens mental health for both caste groups, although the estimates are statistically significant only for lower-caste students (Column 2 of Table 3). The composite Mental Health Index falls by 0.082 standard deviations for lower-caste students ($p < 0.05$), and by 0.062 standard deviations for upper-caste students ($p = 0.162$). The difference between these estimates is not statistically significant ($p = 0.509$). Pooling across caste groups, mixed-room assignment reduces the index by 0.073 standard deviations($p < 0.05$). Mental health, on average, is worse in mixed-caste rooms compared to the same-caste rooms.

The pooled effect is driven primarily by the PHQ-4 index, which measures symptoms of anxiety and depression (Table A11). The estimates are positive for both upper-caste students (0.093 standard deviations) and lower-caste students (0.084 standard deviations), although neither is statistically significant individually. The pooled estimate is 0.099 standard deviations ($p < 0.05$), indicating an increase in anxiety and depressive symptoms on average. No single component accounts for the overall pattern. Depressive-symptom components (Columns 4 and 5 of Table A11) show somewhat larger effects for upper-caste students, whereas anxiety-symptom components (Columns 2 and 3) show somewhat larger effects for lower-caste students. However, these differences are too small to make meaningful conclusions about differential effects by symptom type.

The effects of mixing on individual components of the worry index are imprecisely estimated, but their pattern suggests that increased worry may operate through different channels across caste groups. For upper-caste students, the pattern points to concerns about being far from home and time-management pressures, whereas for lower-caste students, it points to concerns about discrimination, cultural adaptation, and academic competition (Table A12). [18].

Additionally, I find no significant heterogeneity in the mental health effect of mixed-room assignment by gender: the mixed-room-by-female interaction is small (-0.107) and insignificant for lower caste students and small and insignificant for upper caste students. This null interaction sits alongside a large baseline gender gap in mental health levels: in same-caste rooms, upper-caste females report mental health 0.215 s.d. lower than upper-caste males ($p < 0.01$), and lower-caste females similarly report lower levels than lower-caste males (-0.137 s.d., not significant), and in other words, there is a substantial gender gap in mental health levels for both upper and lower caste females independent of room assignment, but mixed-room assignment does not appear to widen or narrow that gap.

**Affirmative Action attitudes**. Columns 3 and 4 of Table 3 report effects on two dimensions of support for affirmative action (AA): the reserved-group index (Column 3), which captures beliefs about the costs and benefits of AA for reserved-category students, and the non-reserved-group index (Column 4), which captures beliefs about its costs and benefits for non-reserved-category students. All indices are coded so that positive values indicate greater support for AA. The results reveal an asymmetric pattern: each group shifts primarily on the dimension concerning the other group rather than its own. Upper-caste students become more supportive of AA on the reserved-group dimension (0.115 standard deviations), while lower-caste students become more supportive on the non-reserved-group dimension (0.110 standard deviations). Correspondingly, mixing reduces the cross-caste gap in support for AA by 27.95% on the dimension that AA is beneficial to the targeted groups, whereas the gap in costs and benefits to the non-targeted group does not change significantly.

For upper-caste students, the increase in support on the reserved-group dimension appears to reflect learning about the disadvantage of lower-caste students. To examine the underlying beliefs driving this change, I analyze the individual items composing the reserved-group index (Table A14). Upper-caste students update in the direction of greater support across most items, although the individual estimates are generally statistically insignificant. These include beliefs about social justice, fostering diversity, and whether AA leads to mismatch, with a somewhat smaller change in beliefs about whether AA reduces incentives to work hard. Upper-caste students also become more likely to believe that AA does not reduce institutional quality (0.142

[18]Mixed-room assignment has no detectable effect on relative well-being (Table A13), measured against students' pre-college well-being; the estimates are precisely estimated zeros for both groups. Descriptive comparisons nevertheless reveal different patterns across caste groups. Relative to their pre-college levels, lower-caste students report greater happiness but also greater stress in same-caste rooms, consistent with the possibility that entry into an selective institution improves their overall well-being while the more competitive environment increases stress. Upper-caste students exhibit the opposite pattern in same-caste rooms. These descriptive patterns provide context for the treatment effects but don't make causal that entry into the institution itself caused the changes (Table A13)

standard deviations, $p < 0.1$). Overall support for AA also increases among students assigned socially distant roommates. However, there is no detectable change in the belief that AA is unfair relative to a purely merit-based admissions policy; the estimate is precisely zero. For lower-caste students, the increase in support on the non-reserved-group dimension is driven primarily by a shift in beliefs about the fairness of AA toward upper-caste students (Table A15). The point estimate indicates that lower-caste students become more likely to believe that AA is not unfair to upper-caste students relative to a purely merit-based admissions policy (0.114 standard deviations), although the estimate is not statistically significant. By contrast, their point estimates for beliefs about the costs and benefits of AA for their own group are negative but statistically insignificant (Table A14). Thus, mixing in the short run helps students learn about the other groups' advantages and disadvantages and update their support for AA policy accordingly.

The main results are robust to two alternative specifications. First, I add controls for family income, parental education, and high school graduation scores (Table A16). The results remain almost unchanged. One exception is the effect on lower-caste students' support for AA on the non-reserved-group dimension. The $p$-value increases from 0.040 to 0.053. The estimate is no longer statistically significant at the 5% level. Second, I add reservation-category fixed effects (Table A17). This specification compares General and EWS students within the upper-caste group, and OBC and SC/ST students within the lower-caste group. It is more conservative as it absorbs variation across caste groups with-in upper and lower caste categories. For upper-caste students, the estimated effects on grades and AA attitudes remain similar in size. However, the estimates become less precise. The $p$-values increase to 0.066 and 0.060, respectively, from below 0.05 in the main specification. For lower-caste students, the estimated effects on mental health and AA support remain similar. The estimated effect on GPA falls from 0.091 to 0.083 standard deviations and is no longer statistically significant ($p = 0.11$). When I add demographic controls to this specification, the GPA effect becomes statistically significant at the 10% level. Overall, the estimates remain robust to alternative specifications.

## 6 Model

Facts 1, 3, and 4 in Section 3 show that integration brings together groups with different levels of socioeconomic background, social networks, and attitudes toward policies such as affirmative action. The short-run results pose a puzzle: why do grades and mental health diverge for lower-caste students, while upper-caste students bear costs on both dimensions?

In residential elite universities, students spend a substantial share of their time in hostels, but also in student clubs, some tied to hostel life and others operating at the broader college level, spanning social and technical activities. These spaces can provide an important opportunity for social mixing (Obminski, 2026), but access to and membership in them is often shaped by preexisting preparation (Michelman et al., 2022), such as having attended elite private schools. If frictions arise inside the room, students with better preparation may be able to substitute toward

these alternative social spaces, but access to that substitute may itself be asymmetric across groups.

I use this hostel-and-club setting to develop a model of social integration, in which interactions between groups shape the accumulation of social and academic capital both within the room and in outside spaces such as clubs, with advantaged students better able to substitute toward the latter when frictions arise. These in turn affect grades, mental health, and labor-market outcomes. A companion model of belief updating, which accounts for the shift in attitudes toward affirmative action, is developed in Appendix B.

### 6.1 Environment and Social Capital

Let $\mathcal{N} = \{1, \ldots, n\}$ index an entering cohort. Student $i$ has caste type $c_i \in \{U, L\}$, academic preparation $\theta_i$ (entrance score), and social advantage $A_i \geq 0$ (family income, parental education, schooling quality), distinct from but correlated with academic preparation. A room assignment $\rho \colon \mathcal{N} \rightrightarrows \mathcal{N}$ is imposed, $\rho_i \subseteq \mathcal{N} \setminus \{i\}$, with random assignment used for identification: within the strata used in the empirical analysis, a student's roommate is drawn independently of the student's own characteristics.

**Definition 1** (Social distance). *$d_{ij} \geq 0$ is the social distance between roommates $i$ and $j$, with $d_{ij} = 0$ for a same-caste pair and $d_{ij} = d_M > 0$ for a mixed pair.*

**Assumption 1** (Endowment gap). *Affirmative action admits lower-caste students at a lower entrance threshold: $\theta \mid U$ first-order stochastically dominates $\theta \mid L$, and likewise $A \mid U$ dominates $A \mid L$ (Fact 1, Fact 2). Write $\Delta\theta \equiv \mathbb{E}[\theta \mid U] - \mathbb{E}[\theta \mid L] > 0$ and $\Delta A \equiv \mathbb{E}[A \mid U] - \mathbb{E}[A \mid L] > 0$. Let*

$$p \equiv \Pr(\theta_j > \theta_i \mid i \text{ lower-caste, room mixed}) \tag{3}$$

*denote the probability that a mixed pairing runs in the expected direction. First-order stochastic dominance implies $p > 1/2$.*

**Assumption 2** (Two aligned relationships). *Roommate alignment $\lambda_{ij} = \lambda(d_{ij}) \in (0, 1]$ is decreasing in social distance $d_{ij}$ (Definition 1), with $\lambda(0) = 1$ for same-caste roommates; in a mixed room $\lambda_{ij} = \lambda_M \equiv \lambda(d_M) < 1$.*

*Club alignment $\iota_i \equiv \iota(c_i, A_i) \in [0, 1)$ is a student's alignment with the institution's student clubs, a function of caste $c_i$ and social advantage $A_i$, nondecreasing in $A_i$ for fixed $c_i$: within a caste, more advantaged students fit the club culture more closely. The caste ordering holds at every advantage level $x$, $\iota(U, x) > \iota(L, x)$, since returns to club participation are higher for upper-caste students at any given level of advantage. Alignment is strictly below one*[19]*, so that in a same-caste room, where $\lambda_{ij} = 1$, time with the roommate always produces more belonging than time in clubs.*

[19] Student clubs contain a mix of upper- and lower-caste students, so a student's alignment with club peers is below the alignment with a same-caste roommate, $\lambda(0) = 1$.

**Definition 2** (Belonging and bridging capital). *Social time is scarce: $s_i + a_i = 1$, where $s_i$ is time with the roommate and $a_i$ is time in clubs. Time investment converts into belonging and bridging capital,*

$$B_i = \lambda_{ij}\, s_i + \iota_i\, a_i, \qquad R_i = 1 - B_i. \tag{4}$$

*Time with socially aligned peers generates belonging (strong ties, $B_i$). The remainder of social time, spent across social groups, generates bridging capital (weak ties, $R_i$), which provides access to new information and networks.*

**Definition 3** (Preparation gap and utility, cost, and return functions). *$\Delta_i \equiv (\theta_j - \theta_i)_+ \geq 0$ is the positive preparation score gap between roommates, generally positive even in same-caste rooms (same-caste expectation $\frac{1}{2}\delta_c$, Proposition 1); for a lower-caste student paired above in a mixed room, $\Delta_i$ is typically larger. $v(B_i)$ is the direct utility of belonging. $c(R_i; \Delta_i)$ is the cost of holding bridging capital $R_i$, evaluated at the preparation gap $\Delta_i$. $\pi_{ij} \equiv \pi(A_j)$ is the network return to bridging with roommate $j$, a function of $j$'s advantage $A_j$. $\pi_g$ is the return to grades.*

**Assumption 3** (Curvature and returns). *$v(\cdot)$ is increasing and strictly concave. $c(\cdot\,; \Delta)$ is twice continuously differentiable, increasing and convex in its first argument, with $c(0; \Delta) = c_R(0; \Delta) = 0$, and is increasing in $\Delta$ with $c_{R\Delta} \geq 0$, so that the marginal cost of bridging capital rises with the preparation gap. $\pi(\cdot) \geq 0$ is nondecreasing, so $\pi_{ij}$ weakly rises in the roommate's advantage $A_j$. $\pi_g \geq 0$.*

**Assumption 4** (Same-caste benchmark). *The return to bridging satisfies $\pi(A) \leq v'(1)$ on the support of lower-caste advantage. Lower-caste students in same-caste rooms then choose full contact, $B_i = 1$ and $R_i = 0$. No such restriction is imposed for upper-caste students, who bridge in a same-caste room when their roommate's network value exceeds $v'(1)$.*

**Assumption 5** (Social distance costs). *Cross-caste roommate time carries a psychic cost $\chi_{c_i}(d_{ij}) \geq 0$, a function of social distance $d_{ij}$ alone. In a mixed room $d_{ij} = d_M$ and I write $\chi_c(d_M)$ or simply $\chi_c(d)$. The slope $\gamma_c \equiv \chi_c'(d_M)$ satisfies $\gamma_L > 0$; $\gamma_U$ is left unrestricted, so the model does not presuppose whether upper-caste responses reflect discomfort or competition. In a same-caste room, $d_{ij} = 0$ gives $\chi_c(0) = 0$.*

**Assumption 6** (Club access). *$\underline{A}_c \geq 0$ is a caste-specific advantage threshold for participation in the institution's clubs and societies for cross-group contact outside the room, reflecting institutional barriers to entry. Student $i$ is* club-capable *if $A_i \geq \underline{A}_{c_i}$, and* club-excluded *otherwise. Club-excluded students derive no belonging from time outside the room, $\iota_i = 0$. Thresholds do not favor lower-caste students: $\underline{A}_L \geq \underline{A}_U$.*

### 6.2 Grades as Academic Transmission

Grades are determined first and enter the placement decision (§6.4). Learning is directional: a student benefits only from a better-prepared roommate. Grades are

$$g_i = \theta_i + \beta\, \lambda_{ij}\, (\theta_j - \theta_i)_+ - \mu_{c_i}\, d_{ij} + \varepsilon_i, \qquad \mathbb{E}[\varepsilon_i \mid \theta_i, \theta_j, A_i, A_j] = 0, \tag{5}$$

with $\beta > 0$ the transmission rate and $\mu_{c_i} \geq 0$ a constant capturing costs of mixing to grades beyond the transmission channel itself. Potential explanations include mental wellbeing acting as a mediator for grade decline, forgone same-caste collaboration, particularly for upper-caste students, or a direct cost of navigating social distance that reduces study effort. The model does not distinguish between these; I explore them in the mechanisms section.

**Proposition 1** (Academic transmission). *Let $\delta \equiv \mathbb{E}[\theta_j - \theta_i \mid \theta_j > \theta_i,$ mixed$]$ and $\delta' \equiv \mathbb{E}[\theta_i - \theta_j \mid \theta_i > \theta_j,$ mixed$]$ denote the cross-caste score gaps conditional on each ordering, and let $\delta_c \equiv \mathbb{E}[\theta_j - \theta_i \mid \theta_j > \theta_i,$ both caste $c]$ denote the within-caste upward gap. Under Assumption 1, in a same-caste room each student receives baseline transmission $\beta \cdot \frac{1}{2} \cdot \delta_c$ (since within caste $\lambda_{ij} = 1$, $d_{ij} = 0$, and the probability that the roommate scores higher is $1/2$ by symmetry). Relative to this baseline:*

(i) *A lower-caste student's expected grade change is $\beta[\lambda_{ij}\, p\, \delta - \delta_L/2] - \mu_L\, d_{ij}$.*

(ii) *An upper-caste student's expected grade change is $\beta[\lambda_{ij}\, (1-p)\, \delta' - \delta_U/2] - \mu_U\, d_{ij}$.*

**Corollary 1** (Net transmission effects when $p = 1$). *Take the limiting case $p = 1$ (empirically $p \in [0.85, 0.90]$, Appendix C.2). Since $p$ is common to both parts of Proposition 1, the same limit yields sharply asymmetric net effects for the two castes in a mixed room:*

(i) *For a lower-caste student, part (i) reduces to $\beta[\lambda_{ij}\delta - \delta_L/2] - \mu_L d_{ij}$, which is positive if and only if*

$$\lambda_{ij} > \frac{\delta_L}{2\delta} + \frac{\mu_L\, d_{ij}}{\beta\delta}. \tag{6}$$

*That is, the discounted return to cross-caste transmission, $\beta\lambda_{ij}\delta$, must exceed the sum of the opportunity cost of forgone within-caste transmission, $\beta\delta_L/2$, and the social-mixing cost, $\mu_L d_{ij}$.*

(ii) *For an upper-caste student, setting $p = 1$ sets the reversal probability $1 - p$ in part (ii) to zero, so the expected grade change collapses to $-\beta\delta_U/2 - \mu_U d_{ij}$. It is negative for every $\lambda_{ij} \in (0, 1]$ whenever $\delta_U > 0$ or $\mu_U d_{ij} > 0$: both the forgone within-caste transmission and the social-mixing cost are weakly positive costs, so upper-caste grades decline in mixed rooms.*

### 6.3 The Social Life of Integration

Students allocate their social time between roommates and campus clubs, generating two forms of social capital. Belonging capital is a consumption good that captures mental well-being and is generated through time spent with socially aligned peers, both in the room and in campus clubs. Bridging capital is an investment good that accumulates through time spent across social groups and with returns depending on the socioeconomic advantage of the roommate. Internship outcomes depend on bridging capital, students' own socioeconomic advantage, and grades, while grades are determined by roommate assignment rather than social time spent together. Final utility combines mental well-being with the returns to academic performance and internship outcomes.

$$S_i = v(B_i) - c(R_i; \Delta_i) - \chi_{c_i}(d_{ij})\, s_i, \qquad Y_i = N_i + \pi_g\, g_i, \qquad N_i \equiv A_i + \pi_{ij}\, R_i, \qquad U_i = S_i + Y_i, \quad (7)$$

with $\Delta_i$, $v$, $c$, $\pi_{ij}$, and $\pi_g$ as defined in Definition 3.[20] [21]

**Timing.** (i) $\rho$ is drawn at random. (ii) Each student announces desired roommate time $s_i^* \in [\underline{s}, 1]$, the maximizer of their payoff (7) if realized; the floor $\underline{s} \in [0, 1)$ is the unavoidable contact of co-residence. (iii) Realized interaction is $\tilde{s}_{ij} = \min\{s_i^*, s_j^*\}$: either roommate can limit contact, and neither can force it beyond the other's willingness.[22] (iv) Social outcomes are evaluated at $\tilde{s}_{ij}$, while grades are fixed by the assignment (equation (5)).

### 6.3.1 Belonging and club alignment

Rearranging Definition 2 with $a_i = 1 - s_i$, belonging is affine in roommate time,

$$B_i(s_i) = \iota_i + \tau_i\, s_i, \qquad \tau_i \equiv \lambda_{ij} - \iota_i,$$

where $\iota_i$ is club alignment (Assumption 2) and $\tau_i$ is the bonding pass-through: the marginal belonging return to shifting time from clubs into the room. Because club alignment rises with advantage within caste, $\tau_i$ varies within each caste rather than splitting by caste label.

**Definition 4** (Room-oriented and club-oriented students)**.** *In a mixed room, student $i$ is* room-oriented *if $\tau_i = \lambda_M - \iota_i > 0$ and* club-oriented *otherwise. A club-excluded student ($\underline{A}_{c_i} > A_i$, Assumption 6) derives no belonging from time outside the room, so $\iota_i = 0$ and the student is room-oriented. In a same-caste room $\lambda_{ij} = 1$, so every student can attain full belonging through the roommate.*

**Proposition 2** (Club alignment and the composition of wellbeing costs)**.** *Let $C_i \equiv v(1) - S_i^{mixed}$ denote the wellbeing cost of a mixed room relative to full belonging, which equals the cost relative to a*

[20] Own advantage $A_i$ is predetermined and therefore shifts the level of $Y_i$ without affecting the student's choice. The additive specification of consumption and investment is a simplifying assumption, not a claim that students value them equally: students who place less weight on the wellbeing costs of mixing, or greater weight on placement, may choose different contact levels. The specification abstracts from this heterogeneity, which is relevant for the welfare analysis (Appendix C.6).

[21] The model values all bridging capital at the roommate-specific return $\pi_{ij}$. If bridging capital generated in student clubs instead earns a constant return $\pi_c$, the effective return governing time allocation, the network value gained per unit of belonging given up, is $\pi_{\text{eff},i}$, which equals $\pi_{ij}$ when $\pi_c = \pi_{ij}$. If club peers yield, on average, a higher return to bridging than lower-caste roommates and a lower return than upper-caste roommates, so that $\bar{\pi}_L \leq \pi_c \leq \bar{\pi}_U$, the effective return is weakly lower than $\pi_{ij}$ for lower-caste room-oriented and upper-caste club-oriented students, which makes the belonging-seeking regime easier to satisfy for them. These are the types that are relatively more common in each caste than in the other (Proposition 2(i)). For the other two types, the effective return is higher and can induce a trade-off between belonging and bridging capital. Appendix C.4 examines the implications for regime conditions, wellbeing, and placement.

[22] Under Assumption 3, payoffs are concave, hence single-peaked, in realized contact, and depend on the partner's choice only through $\tilde{s}_{ij}$. Announcing one's own peak $s_i^*$ is then weakly dominant under the min rule. I assume students play it, so the outcome depends only on the pair's types and there is no fixed point to solve for. Equilibria in which both announce below their peaks exist, but they require a student to announce less than they want even though doing so can never help them.

*same-caste room when same-caste students attain full belonging, comprising three components: belonging loss (through $v$), bridging costs (through $c$, including the preparation-gap premium $c(R;\Delta_i) - c(R;0)$), and friction $\chi_{c_i}(d_M)\tilde{s}_{ij}$. Let $\underline{\pi}_i$ denote the largest return to bridging at which student $i$ still chooses the belonging-maximizing contact in a mixed room (Appendix C.6 gives the expression). Then:*

(i) Incidence: *Given $\underline{A}_L \geq \underline{A}_U$ (Assumption 6), first-order stochastic dominance of advantage (Assumption 1) implies that a weakly larger share of lower-caste than upper-caste students are room-oriented.*

(ii) Belonging-seeking regime: *Suppose $\pi_{ij} \leq \underline{\pi}_i$ for every student in a mixed room, so that each chooses the contact level that maximizes their belonging; this holds automatically for club-oriented students whose roommate satisfies $\pi_{ij} \leq v'(1)$. Realized contact is $\tilde{s}_{ij} = \min\{s_i^*, s_j^*\}$. Within caste and for a given preparation gap, $C_i$ is weakly larger for room-oriented than for club-oriented students, and is largest for a room-oriented student paired with a club-oriented roommate. For room-oriented students, $C_i$ is therefore weakly increasing in the roommate's club alignment, and hence in the roommate's advantage, with a single upward jump where $\iota_j$ reaches $\lambda_M$ and the roommate substitutes club-based interactions for room contact.*

(iii) Bridging-seeking regime: *Suppose a student's return to bridging exceeds the threshold, $\pi_{ij} > \underline{\pi}_i$, so that desired contact is interior, and the roommate is willing to match it. Then wellbeing decreases and network capital increases with $\pi_{ij}$, and at the margin the wellbeing loss equals the value of the additional bridging capital, $dS_i = -\pi_{ij}\, dR_i$. For roommates with $\pi_{ij} \leq v'(1)$, only room-oriented students can be in this regime, and only if friction is large relative to the bonding pass-through, $\chi_{c_i}(d_M)/\tau_i > v'(\lambda_M) + c_R(1-\lambda_M;\Delta_i) - \pi_{ij} > 0$: interior contact in a mixed room reflects costly contact as well as valuable bridging.*

(iv) Academic comparison and wellbeing: *In the regime of part (ii), wellbeing is weakly decreasing in the roommate's entrance score only when the roommate outscores the student ($\Delta_i > 0$). This condition holds with probability $p$ for lower-caste students and $1-p$ for upper-caste students, so the effect is concentrated among lower-caste students. The decline is steeper for room-oriented students, who bear greater wellbeing costs from academic comparisons with stronger roommates.*

The belonging-seeking regime of part (ii) coincides with bonding constraint: students would choose more belonging than is attainable. Its welfare implications are taken up in Appendix C.6.

### 6.4 Social Capital and Internships

Network capital $N_i = A_i + \pi_{ij}R_i$, which adds the value of bridging capital to own advantage, and grades together determine the internship index $Y_i = N_i + \pi_g g_i$ (equation (7)). Network capital measures the value of network access, not the number of contacts.

Let $j$ and $j'$ denote the roommates in the mixed room and the counterfactual same-caste room, respectively, and let $\Delta$ denote the difference in outcomes between the two assignments (mixed

minus same-caste). Then $\Delta Y_i = \Delta V_i + \pi_g \Delta g_i$, where $\Delta V_i \equiv \pi(A_j)R_i - \pi(A_{j'})R_i^{\text{same}}$ is the change in the value of bridging capital under mixed assignment, with $R_i$ and $R_i^{\text{same}}$ denoting bridging capital in the mixed and same-caste rooms, respectively, and $\Delta g_i$ is the change in grades (Proposition 1). Let $\mathbb{E}_c$ denote the expectation over caste-$c$ students and their roommate draws, and define $\bar{g}_c \equiv \mathbb{E}_c[\Delta g_i]$ as the expected grade change. In a same-caste room, a student desires to bridge if and only if the return to bridging exceeds the marginal value of full belonging, $\pi(A_{j'}) > v'(1)$, and realized contact is the lower of the two roommates' desired levels (Lemma 3, Appendix C.3). The condition requires at least one student to be sufficiently advantaged and is therefore more likely to hold in upper-caste rooms, where socioeconomic advantage is higher (Assumption 1). By contrast, lower-caste students in same-caste rooms devote all their social time to bonding with their roommate and do not gain bridging capital (Assumption 4).

**Proposition 3** (Internship effects of mixed assignment)**.** *Compare mixed-room with same-caste-room assignment under random assignment (§6.1) and Assumptions 1, 2, 3, and 4. Then:*

(i) Lower-caste students. *Bridging capital in same-caste rooms is zero, so mixed assignment raises network capital through bridging capital, and*

$$\mathbb{E}_L[\Delta Y_i] = \mathbb{E}_L[\pi(A_j)R_i] + \pi_g \bar{g}_L.$$

*The expected change in the placement index is therefore nonnegative whenever $\bar{g}_L \geq 0$ (Corollary 1(i)).*

(ii) Upper-caste students. *The change in the value of bridging capital, $\Delta V_i$, has no sign, since a more advantaged same-caste roommate raises the value of bridging capital in same-caste rooms, and the grade effect is nonpositive, $\bar{g}_U \leq 0$ (Corollary 1(ii)):*

$$\mathbb{E}_U[\Delta Y_i] = \mathbb{E}_U[\Delta V_i] + \pi_g \bar{g}_U,$$

*which is negative if and only if $\mathbb{E}_U[\Delta V_i] < -\pi_g \bar{g}_U$.*

**Remark** (Competition for elite internships)**.** *The proposition characterizes the effects of mixing on internship outcomes. How changes in the internship index translate into access to internships depends on the competitiveness of the recruitment process, which Appendix C.5 examines. As competition for elite internships increases, the returns to bridging operate through three distinct channels. First, in organized recruitment, the placement cell makes information about openings available to all students, reducing the value of bridging capital as a source of information. Instead, bridging matters through access to the hidden curriculum of recruitment, including preparation for selection tests and interviews. Second, the returns to bridging depend on the complementarity between a student's own advantage and that of a closely aligned roommate. Third, eligibility to apply is restricted by grades and specialization, which makes changes in academic performance particularly consequential for students near the grade cutoff. These channels have distinct implications by caste: public information limits the competitive returns to bridging for lower-caste*

*students, complementarity in recruitment preparation favors students who combine their own advantage with an advantaged, closely aligned roommate, and grade cutoffs amplify the consequences of grade declines for upper-caste students near the eligibility threshold. The appendix formalizes these implications.*

# 7 Mechanisms

The model in Section 6 makes three predictions that I take to the data in this section. First, grade improvement for the lower caste is due to being paired up with academically better-prepared peers. Second, mental health costs are a result of social frictions in the room, and only the advantaged group can asymmetrically substitute with other spaces in the institute to integrate with their own caste networks. Third, there exist complementarities within caste networks when competing for elite jobs or leadership positions.

## 7.1 Grades effects are due to directional transmission of help:

In this subsection, I test Proposition 1. I examine whether roommate academic preparation explains the effects of mixed-room assignment on grades. I also test whether there is any diversity premium or penalty for roommate academic preparation by interacting treatment with roommates' entrance exam scores. Column 4 of Table 4 shows that the effect of mixed-room assignment on grades disappears after I control for roommates' entrance-exam scores. This result suggests that the effect on grades operates through exposure to better-prepared roommates. Column 6 of Table 4 shows no evidence of an additional diversity premium in academic transmission. If anything, the estimate suggests a small penalty when students are paired with better-prepared roommates from a different caste, but this is not statistically significant.

The evidence on academic interactions is consistent with this pattern. Lower-caste students in mixed-caste rooms report similar levels of study interaction intensity as their counterparts in same-caste rooms (Column 2 of Table 5). However, because their roommates are better prepared academically, these interactions may be more productive for lower-caste students. Consistent with this interpretation, lower-caste students report receiving more academic help from roommates in mixed-caste rooms (0.12 SD, $p = 0.11$, Column 6 of Table A18). Conversely, upper-caste students report providing more academic help in mixed-caste rooms (0.144, $p < 0.1$, Column 2 of Table A23). Together, these findings suggest that, with better-prepared roommates, a similar level of study interaction can generate greater academic benefits for lower-caste students. Thus the empirical results show that the net effect of mixing on academic transmission is positive for lower-caste students, resolving the ambiguity in Corollary 1.

For upper-caste students, the negative effect on grades does not appear to result from being paired with lower-performing roommates. In particular, the level of lower caste students' exam scores doesn't hurt upper caste students. This finding is consistent with the asymmetric effects proposed in Proposition 1. Controlling for roommate's exam score doesn't change the effect on mixed room in Column 2 of Table 4 for upper caste students. Column 3 of Table 4 also shows

no evidence of an additional penalty from being paired with a lower-performing student from a different caste. If anything, being paired with a lower-performing, lower-caste roommate appears to improve upper-caste students' grades, but this effect is not statistically significant.

I further examine heterogeneity by the caste distance between roommates among upper-caste students (Table A28). I construct caste distance by assigning ordinal ranks to caste groups: upper caste = 1, OBC = 2, and SC/ST = 3. Room-level caste distance is measured as the average absolute difference between a student's caste rank and those of their roommates. A one-unit increase in caste distance reduces GPA by 0.09 SD, indicating that upper-caste students perform worse when assigned roommates farther below them in the caste hierarchy. By contrast, I find no evidence that greater caste distance adversely affects the academic performance of lower-caste students. Three patterns suggest that upper-caste students lose access to reciprocal academic support from similarly prepared peers in mixed rooms relative to same-caste rooms. First, upper-caste students in mixed-caste rooms report receiving less exam-related support (-0.170 SD, $p < 0.1$, Column 2 of Table A18) than upper-caste students in same-caste rooms. Columns 2 and 6 of Table A18 show that upper-caste students provide academic help to their roommates in mixed-caste rooms but do not receive comparable help from their lower-caste roommates. Second, they also report somewhat less frequent study interactions, although this difference is not statistically significant (Table A21). Third, I also examine whether upper-caste students in mixed-caste rooms compensate by seeking academic help from other hostel-mates (Table A19). I find no evidence of such substitution. The point estimates are negative, although statistically insignificant. By comparison, upper-caste students in same-caste rooms report receiving more academic help from other hostel-mates than lower-caste students in same-caste rooms (a difference of 0.174 SD; Table A19). These results are consistent with reduced access to reciprocal academic support contributing to upper-caste students' academic losses. However, I cannot disentangle the costs of forgone academic networks from other social and psychological frictions arising from caste mixing, as discussed in Corollary 1(ii).

#### 7.1.1 Is help leading to learning or cheating?

To investigate further whether the grade gains for lower-caste students in mixed rooms reflect actual learning and, consequently, an increase in human capital, rather than grade inflation arising from shared assignments or copying from better-prepared roommates, I examine whether these effects vary with academic overlap. I define academic overlap as being assigned to the same course track as one's roommates. All first-year students are assigned to one of two course tracks, independently of their specialization and orthogonal to mixed-room assignment. Students take the same courses regardless of specialization. Students follow different course sequences in the first semester, switching sequences in the second semester.

If grade gains arise from copying or shared assignments, I would expect them to be larger when roommates follow the same course track and have greater overlap in their coursework. However, a positive effect in the presence of overlap would not, by itself, establish cheating, since

students taking the same courses may also exchange knowledge and help each other learn. Conversely, the absence of differential effects by academic overlap would be inconsistent with cheating/grade inflation being the primary explanation for the grade gains.

There are also reasons why academic overlap may not be necessary for knowledge transmission. First, first-year courses build on high-school mathematics and physics and cover foundational subjects, including calculus, linear algebra, and applied physics. Roommates with stronger prior preparation may therefore help one another understand these subjects even when they follow different course tracks. Second, because the course sequences switch between semesters, roommates who take a course earlier may be able to help one another when the sequence changes. I cannot directly test this second channel because I do not observe grades by semester.

I find no evidence that academic overlap explains the grade gains for lower-caste students in mixed rooms (column 5 of Table A20). If these gains were driven by copying or grade inflation through shared assignments, I would expect them to be larger when roommates follow the same course track. Instead, the interaction between mixed-room assignment and academic overlap is negative, suggesting that overlap does not amplify the grade gains. In addition to the effects on grades, I find no evidence that students in mixed rooms engage in more group work or exert less study effort overall (Table A21). These aggregate findings do not, however, imply that academic overlap is irrelevant. Table A20 shows that academic overlap is associated with more group work and study interactions in same-caste rooms, for both upper- and lower-caste students. Along with the estimates on grades (column 5), estimates on group work and study interactions (columns 6 and 7) are negative in mixed rooms when roommates share the same course track. These patterns are consistent with the possibility that in mixed rooms, some frictions exist when paired up with better prepared roommate but level effect of roommate's exam scores dominate the transmission and increase grades for lower caste students. Taken together, these findings provide no support for copying or grade inflation through shared academic work as the primary explanation for lower-caste students' grade gains.

For upper-caste students, academic overlap is associated with higher grades in same-caste rooms, although this effect is statistically insignificant. Point estimates suggest upper-caste students also appear to do less group work in mixed rooms than their counterparts in same-caste rooms. Both these patterns are further suggestive of the forgone academic support channel, explaining lower grades for upper-caste students in mixed rooms. I find no evidence that self-reported study effort differs between mixed- and same-caste rooms for either group (Table A21). This weighs against explanations based on lower-caste students increasing their effort to catch up with better-prepared roommates, or either group reducing study effort in response to the social costs of caste mixing.

### 7.2 Social Frictions and Mental Health:

Upper caste in elite institutions diversify their networks as they can access other social spaces like student clubs and depend less on roommates for their socio-emotional needs but social frictions

inside the room can affect their well-being. For lower caste students roommate bonding is high and is hypothesized to play a crucial role in their mental well-being and they can't diversify their social networks. When academic differences with upper castes is higher it also increases their worry and would negatively affect their well-being. In this section, I show evidence supportive of social frictions in mixed rooms are the main driving force for worse mental health in both groups.

#### 7.2.1 Early signs of social frictions:

First, I show in table A22 that social frictions in mixed room arise as early as the first week of college. Exposure produces detectable frictions within the first week of college for both groups, though of a different type. Upper-caste students report lower expected friendship with their roommates and higher concern about cultural and language differences. Lower-caste students show little early reactions, but mixing increases their worry about discrimination specifically. These early signs indicate social frictions start before substantial interactions.

#### 7.2.2 Roommate interactions and mental health

First, in same-caste rooms, lower-caste students exhibit greater interaction intensity with their roommates than upper-caste students. Second, upper-caste students appear more engaged in student clubs, suggesting greater diversification of social interactions beyond the roommate relationship. Both patterns are consistent with the alignment described in Definition 4 of the model.

I now examine how mixed-room assignment affects roommate interactions and whether these changes are consistent with the proposed mental-health mechanisms. Table 5 shows that mixed-room assignment significantly reduces roommate interaction intensity for lower-caste students (composite index: $-0.159$, $p < 0.05$). This decline is driven by social interactions ($-0.181$, $p < 0.01$), while the effect on study-related interactions is smaller and statistically insignificant ($-0.042$). Consistent with this pattern, lower-caste students are also 0.130 standard deviations less likely to receive emotional and financial support from their roommates in mixed rooms than in same-caste rooms, reported in Table A18.

These findings are consistent with Propositions 2(ii) and 2(iii) of the model, which predict that cross-caste interactions can reduce bonding when social frictions weaken the benefits of roommate relationships. Table A25 provides suggestive evidence that this reduction in social interaction is related to the decline in lower-caste students' mental health. The mixed-room coefficient falls from $-0.080$ s.d. ($p < 0.1$) to $-0.024$ s.d. when social interaction is included as a control. By contrast, adding study-related interaction does not materially change the estimated mental-health effect.[23]

A further channel may compound the mental-health costs of integration for lower-caste students: competitive pressure arising from differences in academic preparation. Consistent with

[23] Because interaction intensity is itself affected by treatment, this exercise does not identify a causal mediating channel. The attenuation of the treatment coefficient is instead suggestive evidence consistent with the model's predictions in Propositions 2(ii) and (iii).

Proposition 2(iv) of the model, the worry index increases with the academic-preparation gap between roommates for lower-caste students. I report that lower caste students are more worried when gap increases with roommate and I don't see any such effects on PHQ4. This pattern is suggestive of a role for unfavorable academic comparisons in shaping lower-caste students' mental health.

For upper-caste students, the evidence on roommate interactions is weaker, consistent with their greater engagement in social spaces beyond the room. Table 5 shows that social interaction declines by 0.08 standard deviations in mixed rooms, although the estimate is not statistically significant. Table A18 shows a similar pattern for emotional and financial support received from roommates. Moreover, unlike for lower-caste students, controlling for social interaction does not meaningfully change the estimated mental-health effect for upper-caste students (Table A25). Taken together, these findings are suggestive of reduced roommate bonding in mixed rooms but its impact on mental health of upper caste students is relatively smaller.

To further investigate this argument, I examine heterogeneity by room type (Table A26, Table A27). For upper-caste students, the mental-health costs are larger in two-person mixed rooms and close to zero in three-person rooms. This pattern is suggestive of a buffering role for alternative social networks. In three-person rooms, the presence of another upper-caste roommate may allow students to maintain same-caste connections, while a more diverse set of lower-caste roommates may offer additional opportunities to diversify social interactions. Either way, larger rooms may reduce dependence on a single cross-caste relationship and mitigate the mental-health costs of integration. For lower-caste students, by contrast, the mental-health effects are similar across two-person mixed rooms, partially mixed three-person rooms (one upper-caste and one lower-caste roommate), and fully mixed three-person rooms. This similarity is consistent with social frictions and unfavorable academic comparisons remaining important channels regardless of room composition.

Finally, I examine heterogeneity by the caste distance between roommates (Table A28). For lower-caste students, greater social distance is associated with a significantly larger negative mental-health effect (0.086 s.d., ($p < 0.05$)). For upper-caste students, the corresponding estimate is smaller (0.034 s.d.) and statistically insignificant. This pattern is consistent with social frictions being more consequential for lower-caste students when paired with more socially distant roommates.

### 7.3 Room transitions and Segregation

At the beginning of the second year, students can choose their roommates from within their hostel cohort, making roommate selection a constrained choice. I use this transition to examine the persistence of initial room types and whether students sort into same-caste rooms after the randomized assignment period. Second year room-choice data come from hostel administrative records, providing an objective measure of transitions that is not subject to self-reporting bias Figure 2 shows substantial persistence in room composition, although the patterns differ by initial room

type.

Students initially assigned to same-caste rooms, both upper-caste and lower-caste, are more likely to remain in same-caste rooms than students initially assigned to mixed rooms are to remain in mixed rooms. Conversely, students initially assigned to mixed rooms are more likely to transition to same-caste rooms. UC students initially assigned to same-caste rooms are 9.7 percentage points more likely to remain in that room type than UC students initially assigned to mixed rooms ($p < 0.01$); the corresponding difference for LC students is 5 percentage points ($p < 0.1$). Overall, the share of mixed rooms is 8.3 percentage points lower than would be expected under random allocation. This reduction is larger in rooms with greater scope for compositional adjustment, particularly three-person rooms. Within these rooms, partially mixed rooms—with two students from one caste group and one from the other—are especially likely to transition to same-caste rooms. I report the detailed transition patterns in Table A29.

### 7.4 Summary on Mental Health and Grades:

Taken together, the model and empirical results suggest distinct mechanisms underlying the effects of integration across caste groups. Lower-caste students improve their academic performance when paired with better-prepared roommates, but social frictions and unfavorable academic comparisons within mixed rooms may undermine their well-being. For upper-caste students, the evidence is less consistent with specific roommate attributes driving the effects on grades and mental health. Instead, reduced access to same-caste networks and forgone opportunities for collaboration appear to be more important in explaining their negative academic and well-being outcomes. Caste frictions experienced by the lower castes and upper castes also seem different, consistent with all the outcomes above. Lower caste students are more likely to report higher experiences of discrimination (Table A30 and Table A31) and whereas upper-caste students are more likely to feel exclusion from study groups (Table A31). These patterns are consistent with the costs of mixed-caste rooms discussed above.

Academic and psychological effects of mixed-room assignment differ across groups. Lower-caste students improve academically at the expense of their mental health, while upper-caste students experience a decline in grades by the end of the first year. These findings raise questions about the persistence of these effects and their implications for longer-run outcomes. Do upper-caste students recover from their initial academic losses, and how do the academic and psychological consequences evolve for lower-caste students? Does roommate mixing affect labor-market outcomes? To address these questions, I follow the 2023 entry cohort shortly before the end of their third year of college, examining medium-run effects on academic performance, mental health, internship outcomes, and attitudes toward affirmative action. I report ITT effects of first year roommate assignment.

# 8 Medium run consequences

## 8.1 Main Outcomes in the Medium Run: Three Years after Entry

Table 6 reports the effects of first-year mixed-caste roommate assignment on outcomes measured in the third year of college: cumulative GPA,[24] summer internship offer received, internship stipends, a composite mental health index, and indices of support for affirmative action. I use the same specification as in Table 3. This section discusses results on grades, internships and mental health, while the next section returns to the AA results.

By the time of the survey, the randomized assignment had ended roughly two years earlier, and students had chosen their own roommates. The estimates therefore capture the medium run effects of at least one-year exposure.

I document two key findings. First, the initial effects of mixed-room assignment on grades have persisted by the end of third year but estimates are noisy and mental health effect has faded by the third year. Second, the effects on internship outcomes differ by caste. For upper-caste students, there is no detectable effect on whether they received an internship offer, but their internship stipends are significantly lower. For lower-caste students, the effect operates primarily on the extensive margin: they receive fewer internship offers, while the estimated effect on stipend amounts is also negative but imprecisely estimated. Third, the effects on support for affirmative action differ across groups. Among lower-caste students, support increases along both dimensions, with marginally significant effects on beliefs about the benefits and costs of affirmative action for disadvantaged groups.

*Grades:* By the end of the fifth semester, upper-caste students initially assigned to mixed rooms have GPAs that are 0.125 standard deviations lower than those of UC students assigned to same-caste rooms (column 1 of Table 6). For lower-caste students, the estimated effect is positive (0.085 standard deviations) but statistically insignificant. The second-year estimates are similar in magnitude for UC students (column 1 of Table A32), with mixing reducing their GPA by 0.119 standard deviations. For LC students mixing increases GPA by 0.119 standard deviations; both second-year estimates are statistically significant at the 10% level. Mixing has persistent effects on students' GPA.[25] Overall, the results suggest that the academic effects of initial roommate mixing persist beyond the first year and the achievement gap between the two groups reduces over time.

*Mental health:* Effect of mixing doesn't have persistent effect on mental health of both groups (column 4 of Table 6).[26]

[24] The survey was done shortly before sixth-semester exams, so reported GPA is cumulative through the fifth semester.

[25] I look at how caste gap changes over time by plotting GPA of upper caste and lower caste students in Figure A1 normalized by first-year GPA, the gap declines from 0.91 standard deviations at the end of the first year to 0.81 standard deviations by the end of the fifth semester, an 10.6% reduction over the subsequent three semesters, after the roommate experiment ended. This narrowing is driven both by decreasing grades among UC students and increasing GPA for LC students.

[26] But Figure A2 indicates caste gap in mental health also emerges over college. In same-caste rooms, lower-caste students score about 0.161 s.d. below upper-caste students by the end of third year, compared with almost no gap at entry (Fact 3). This is consistent with a relative deterioration in lower-caste students' mental health over college. Trends

*Internships Outcomes* Third-year summer internships are organized primarily through the institute's placement cell and are very competitive and well-paid opportunities. Among students assigned to same-caste rooms, 78.2% of upper-caste students get an offer for summer internship by the time of survey, compared with 48.7% of lower-caste students, a 30pp difference between upper and lower caste students. Compensation is reported in brackets. I assign bounded brackets their midpoints and code the open-ended INR 400,000-plus category as INR 400,000, imposing a top coding cap at that amount.

Upper-caste students earn an average monthly stipend of INR 163,631 (approximately USD 1,703), while lower-caste students earn around INR 66,921 per month, or roughly 40% of the upper-caste mean (see Table 6).[27] Mixed-room assignment has no detectable effect on whether upper-caste students receive an internship offer, but it reduces their monthly stipends by INR 32,542 ($p < 0.01$), or about 20% relative to the mean among upper-caste students in same-caste rooms (column 3 of Table 6). For lower-caste students, mixed-room assignment reduces internship offers by 7.3 percentage points ($p < 0.1$). The estimated effect on monthly stipends is also negative, implying a 14.3% reduction (INR 9535) relative to the same-caste-room mean, but the effect is not significant.[28]

### 8.2 Why are internship outcomes worse for both caste groups?

To understand the mechanisms behind the negative effects of mixed-room assignment on internship outcomes, I go back to the model again and Proposition 3 can shed light on this. Even though my model is static and doesn't account for changes in social or network capital, the levels of network capital remain consistent along caste lines over time and mechanism through which job market outcomes are affected can be studied through its lens. Consistent with Proposition 3, the effects of roommate mixing on labor-market outcomes vary with the competitiveness of the opportunity. In the second year, when summer internships are typically low-paying and less competitive, mixing improves outcomes for lower-caste (LC) students, while the estimated effects for upper-caste (UC) students are modestly negative but statistically insignificant. Table A32 shows that mixing increases summer internship stipends for LC students by approximately INR 5,985 (USD 62), significant at the 10% level. The stipend distribution suggests that these opportunities are relatively low-paying: the median stipend is zero and the 75th percentile is INR 15,000. By contrast, third-year internships are substantially more competitive and better paid, with a median stipend of INR

also indicate mental health becomes worse for everyone and it becomes much worse, in particular scheduled caste and scheduled tribes.

[27] Stipends are converted at USD 1 = INR 96.1. Means include students with a zero stipend. The median upper-caste student in a same-caste room falls in the bracket with a midpoint of INR 125,000 (approximately USD 1,300), while the median lower-caste student falls in the bracket with a midpoint of INR 25,000 (approximately USD 260).

[28] I report effects on internship stipends in Table A41, using alternative specifications that top-code stipends at the 90th percentile, restrict the sample to students who report receiving a summer internship offer (assigning zero stipends to all others), and use students' plans to undertake a summer internship as an alternative outcome. The estimated effects on stipends remain robust and similar in magnitude across these definitions.

85,000 (approximately USD 900) and a 75th percentile of INR 125,000[29]. These internships can also lead to placement offers or provide important pathways into subsequent employment.

To examine how these early labor-market gains emerge, I document students' summer activities in the first and second years in Figures A3 and A4. LC students assigned to mixed rooms are more likely to undertake summer internships and academic projects, although the estimated effects on academic projects are smaller and statistically less precise. In particular, mixed-room assignment increases LC students' likelihood of undertaking a summer internship by 8.3 percentage points. These students are also less likely to engage in volunteering or part-time work. This pattern suggests a shift toward activities more directly related to career development. Although I cannot directly establish that these changes result from learning from UC roommates, they are consistent with the idea that cross-caste ties facilitate access to information and opportunities that help LC students build bridging capital and pursue job-market-oriented activities.

In the early years, internships are less competitive and reward information and exposure, which bridging capital provides. This is when LC students gain, while UC students' pre-existing advantages keep them above the threshold (Proposition 3). By the third year, recruitment is more competitive and organized through placement cells, making information about openings widely available and reducing the returns to bridging capital. Access instead depends more on support from an advantaged, closely aligned roommate, such as preparation for tests and interviews or referrals, as well as eligibility cutoffs based on grades and specialization (Remark 6.4; Appendix C.5). Mixing may therefore reduce UC students' access to such support relative to same-caste peers, while LC students may benefit less from it when the alignment discount is large. Persistent academic gaps may further constrain LC students' eligibility. These channels are consistent with the third-year results, although the data cannot distinguish between them, including the relative roles of preparation support and referrals.

To further examine whether mixing affects access to professional networks and career trajectories, I examine students' participation in campus organizations and career preferences. Mixed-room assignment significantly reduces students' likelihood of holding leadership positions in student clubs and lowers their preferences for high-paying sectors, particularly finance and consulting (Table 7). Both effects are statistically significant at the 5% level. These patterns are consistent with reduced access to same-caste networks shaping students' career trajectories. Club leadership can provide access to valuable professional connections and serve as a differentiator on CVs, particularly when differences in GPA are small. This interpretation is consistent with evidence linking club participation to career preferences and earnings at selective US colleges (Michelman et al., 2022). Importantly, I find no evidence that students assigned to mixed rooms are less likely to apply to these sectors. Since applications are submitted through a centralized college job portal, the marginal cost of applying is low and largely invariant to roommate assignment. Taken together, these findings suggest that differences in internship outcomes are not driven by applica-

[29]The stipend distribution, calculated across all students, including those who did not undertake an internship and those whose internships were unpaid.

tion decisions alone, but may also reflect changes in career preferences and access to professional networks, alongside differences in preparation and eligibility.

## 9 Affirmative Action Attitudes

In this section, I examine the mechanisms underlying the short-run improvements in attitudes among both groups, how these treatment effects evolve three years later, and whether they extend to support for affirmative action in employment and political representation.

The model in Section B predicts that a roommate's signal induces larger attitude changes when prior beliefs are less accurate and smaller changes when students already possess independent information conveying similar content. I test these predictions using three heterogeneity analyses.[30]

**Updating is largest among students with stronger meritocratic beliefs.** Table 8 interacts mixed-room assignment with students' baseline belief that success in the entrance exam depends entirely on merit. Meritocratic beliefs were measured during orientation week, shortly after roommate assignment. I find no statistically detectable effect of mixed-room assignment on this measure in table A6[31]. This belief strongly predicts lower baseline support for affirmative action (AA) in both groups. Among upper-caste students, those holding stronger meritocratic beliefs exhibit larger shifts in attitudes toward both the benefits of AA for reserved groups and its costs for non-reserved groups, 0.142 standard deviation ($p < 0.05$) and 0.135 standard deviations, ($p < 0.1$), respectively. Among lower-caste students, the interaction is positive and significant only for attitudes toward the costs and benefits of AA for disadvantaged groups (0.143, $p < 0.05$). These patterns are consistent with Bayesian updating in the model (Proposition 4(i)): students whose prior beliefs are less aligned with the information conveyed by cross-caste contact exhibit larger revisions in their attitudes.

**Baseline social segregation predicts greater updating.** Table 9 interacts mixed-room assignment with students' pre-college share of cross-caste friends, coded so that higher values indicate greater social segregation. Proposition 4 predicts that more socially segregated students have less information about other groups ex ante and hold less supportive views of the benefits and costs of AA for those groups. Consistent with this prediction, more socially segregated upper-caste students exhibit larger increases in support for AA benefiting reserved groups (0.131, $p < 0.1$). Among lower-caste students, the point estimates similarly indicate greater attitude changes among those who were more socially segregated before college, in the direction of greater recognition of the benefits and costs of AA for the other group. However, these estimates are less precise. Overall, the patterns are consistent with substitution (Proposition 4): the roommate's signal carries less new information for students who already have greater cross-caste exposure.

**Own academic standing may shape attitudes through ego utility.** Table A33 interacts mixed-

[30] The first two tests use only the 2024 cohort, for which both baseline and one-year follow-up data are available.

[31] Although the absence of a detectable treatment effect provides some reassurance, interpreting the interaction as heterogeneity by pre-existing beliefs requires the assumption that roommate assignment did not affect beliefs before they were measured

room assignment with students' standardized entrance-exam scores. Higher-scoring students express lower baseline support for AA. This relationship is consistent with the role of ego utility emphasized by Köszegi, 2006: exam success may reinforce the belief that one's academic standing reflects personal merit rather than circumstances. Academic standing may also moderate how students respond to cross-caste contact. Students who feel less threatened by academic comparisons may be more willing to revise their attitudes in favor of the other group. Alternatively, entrance-exam scores may proxy for differences in prior beliefs and the information students bring to the interaction. Own exam score heterogeneity doesn't disentangle these two mechanisms.

Taken together, the results are consistent with the model's central prediction that the effect of contact on AA attitudes depends on students' prior beliefs and existing information. Attitude changes vary with baseline meritocratic beliefs, prior cross-caste exposure, and academic standing, suggesting that contact helps people with prior misbelieves update their beliefs stronger but update is stronger on the perceived benefits and costs of AA for the other group, consistent with model's key predictions.

### 9.1 Heterogeneity by Gender in Attitudes Toward Affirmative Action

I examine whether the effects of mixed-room assignment on support for affirmative action (AA) differ by gender in Table A10. Among upper-caste students, female students assigned to mixed-caste rooms exhibit substantially larger shifts away from support for AA. This pattern is notable in the institutional context: in 2018, the institution introduced a 20% supernumerary quota for women within each caste category to improve gender representation. These additional seats are allocated when women's representation in a specialization falls below 20%, and all women in my sample benefit from these quotas.

Although female students express greater baseline support for AA overall, exposure to mixed-caste roommates substantially attenuates this gender difference, eliminating the positive effect of mixing. I find no comparable gender heterogeneity among lower-caste students. One possible explanation is that upper-caste women perceive cross-caste integration as threatening the position of women within the institution, particularly if they anticipate a backlash against gender-based affirmative action. Alternatively, the intersection of caste and gender disadvantage may shape how students interpret integration differently across groups. These results need further inquiry to understand what channel is driving this reduction in support for AA among females.

### 9.2 Support for affirmative action: Medium run

This subsection examines whether the effects of roommate mixing on support for affirmative action (AA) persist into the medium run (Table 6). For upper-caste students, the first-year effects do not persist: point estimates are negative, particularly for items concerning the costs and benefits of AA for their own group, but none is statistically significant. For lower-caste students, mixed-room assignment increases support for AA, with effects significant at the 10% level on both the cost and

benefit dimensions. One possibility is that experiences during the transition to the labor market, including the stipend differences documented above, shape attitudes toward AA in the later years of college.[32]

**Downstream Affirmative action attitudes in the medium run** Upper-caste students assigned to mixed rooms become less supportive of AA in the medium run, particularly in employment reported in Table 11. Their support for AA in jobs declines by 0.170 standard deviations (column 2 of table 11), a statistically significant effect at the 5% level. Support for AA in politics also falls by 0.14 standard deviations, while the estimated effect on support for AA in elite higher education is smaller and negative. In contrast, I find no evidence of mixing changing lower-caste students' support for AA in employment, politics, or education. The point estimates are small, positive, and statistically insignificant.

The decline in upper-caste students' support for affirmative action may partly reflect their decline in economic outcomes due to mixed-room assignment. The effect is largest for affirmative action in employment, where I also document a significant decline in internship stipends. This pattern is consistent with students becoming less supportive of policies perceived to disadvantage their own group when they experience adverse labor-market outcomes.

## 10 Conclusion

This paper studies caste integration using randomly assigned first-year roommates among approximately 2,267 students at a highly selective public engineering institution in India. Combining administrative records with detailed surveys, I find that mixed-caste rooms improve disadvantaged students' academic performance but worsen their mental health, while advantaged students experience a decline in academic performance. Three years later, academic losses persist among upper-caste students, while gains among lower-caste students remain largely unchanged. Labor-market outcomes depend on the competitiveness of the opportunity: disadvantaged students have better outcomes in less competitive internships but are less likely to secure more competitive internships, while advantaged students assigned mixed-caste roommates receive lower internship stipends. Integration also reshapes political attitudes. In the short run, students in both groups become more supportive of affirmative action policies benefiting the other group. In the medium run, however, advantaged students' support for employment reservations declines as they experience losses in more competitive internships.

An important limitation of this study is that, because students are surveyed while still enrolled at the institution, I cannot examine the longer-term consequences of inter-caste exposure for em-

[32] I examine how support for AA evolves over time for both groups in Figures A5 and A6. The narrowing of the gap is driven primarily by changes among upper-caste students, whose support increases across both dimensions of AA: beliefs about benefits to disadvantaged groups and costs to advantaged groups. Lower-caste students' support remains comparatively stable overall, following a slight decline in the first year and a subsequent recovery by the third year. There is, however, heterogeneity within this group: Scheduled Caste (SC) and Scheduled Tribe (ST) students reduce their support for AA over time. This decline may reflect the psychological costs or caste-related frictions they experience in mixed rooms, although the trends alone cannot establish these mechanisms.

ployment, particularly access to and the quality of full-time jobs. This is an important dimension of economic mobility that the internship outcomes examined here maynot fully capture.

Several questions remain for future research. How do the effects of integration vary across educational settings with different levels of competition, initial social distance, and performance inequality? Do cross-caste interactions during college shape graduates' subsequent hiring decisions, residential choices, marriage patterns, and political beliefs? These questions are particularly relevant in contexts where caste continues to shape access to economic opportunities, including hiring (Shukla, 2025). Evidence from developed-country settings suggests that intergroup contact during childhood can influence later hiring decisions (Wren-Lewis et al., 2025) and residential choices (Merlino et al., 2024). Whether similar effects emerge from exposure during college, particularly in contexts of persistent caste inequality, remains an open question. Future work could also examine whether institutional arrangements such as structured peer groups, cross-cohort mentorship, and access to student clubs can reduce identity-based frictions and strengthen the benefits of cross-caste interactions.

Caste integration creates opportunities for connections across historically entrenched social boundaries, but the returns to these connections depend on the resources students bring into these relationships and the frictions they encounter. Students enter educational institutions with unequal levels of academic preparation and social capital, shaping both the benefits they derive from cross-caste connections and the costs they incur. Evaluating the consequences of integration therefore requires looking beyond academic performance and attitudes to consider psychological well-being, social interactions, and access to economic and labor-market opportunities, as well as how these effects evolve over time. Taken together, these findings show that the effects of integration depend not only on bringing students together but also on the social and institutional conditions that shape how they interact and the resources they can access.

## References


Abadie, A., Athey, S., Imbens, G. W., & Wooldridge, J. (2017). *When should you adjust standard errors for clustering?* (NBER Working Paper No. 24003). National Bureau of Economic Research. https://ideas.repec.org/p/nbr/nberwo/24003.html (cit. on p. 14).

Ahimbisibwe, I., Carrell, S. E., & Lybbert, T. J. (2026). *Who matters in college? familiarity, ability signals, and student achievement* (NBER Working Paper). National Bureau of Economic Research. (Cit. on p. 6).

Akerlof, G., & Kranton, R. E. (2000). Economics and identity. *The Quarterly Journal of Economics*, *115*(3), 715–753. https://EconPapers.repec.org/RePEc:oup:qjecon:v:115:y:2000:i:3:p:715-753. (cit. on p. 1).

Alesina, A., & Giuliano, P. (2011). Preferences for redistribution. In J. Benhabib, A. Bisin, & M. O. Jackson (Eds.), *Handbook of social economics* (pp. 93–131, Vol. 1A). North-Holland. (Cit. on p. 6).

Alesina, A., & La Ferrara, E. (2005a). Preferences for redistribution in the land of opportunities. *Journal of Public Economics*, *89*(5–6), 897–931 (cit. on p. 6).

Alesina, A., & La Ferrara, E. (2005b). Ethnic diversity and economic performance. *Journal of Economic Literature*, *43*(3), 762–800. https://doi.org/10.1257/002205105774431243 (cit. on p. 1).

Alesina, A., Stantcheva, S., & Teso, E. (2018). Intergenerational mobility and preferences for redistribution. *American Economic Review*, *108*(2), 521–554 (cit. on p. 6).

Allport, G. W. (1954). *The nature of prejudice*. Addison-Wesley. (Cit. on p. 2).

Anderson, S. (2011). Caste as an impediment to trade. *American Economic Journal: Applied Economics*, *3*(1), 239–263. https://doi.org/10.1257/app.3.1.239 (cit. on p. 7).

Asher, S., Novosad, P., & Rafkin, C. (2024). Intergenerational mobility in India: New measures and estimates across time and social groups. *American Economic Journal: Applied Economics*, *16*(2), 66–98. https://doi.org/10.1257/app.20210686 (cit. on p. 1).

Bagde, S., Epple, D., & Taylor, L. (2016). Does affirmative action work? caste, gender, college quality, and academic success in india. *American Economic Review*, *106*(6), 1495–1521 (cit. on pp. 1, 7–8).

Banerjee, A., Breza, E., Chandrasekhar, A. G., Duflo, E., Jackson, M. O., & Kinnan, C. (2024). Changes in social network structure in response to exposure to formal credit markets. *The Review of Economic Studies*, *91*(3), 1331–1372. https://doi.org/10.1093/restud/rdad065 (cit. on p. 6).

Barrera-Osorio, F., & Bayona-Rodríguez, H. (2019). Signaling or better human capital: Evidence from Colombia. *Economics of Education Review*, *70*, 20–34. https://doi.org/10.1016/j.econedurev.2019.02.006 (cit. on p. 6).

Barrios-Fernández, A., Neilson, C., & Zimmerman, S. (2026). Elite universities and the intergenerational transmission of human and social capital. *American Economic Review*, *116*(6), 2120–2165. https://doi.org/10.1257/aer.20230802 (cit. on pp. 1, 5).

Bertrand, M., & Duflo, E. (2017). Field experiments on discrimination. In A. V. Banerjee & E. Duflo (Eds.), *Handbook of economic field experiments* (pp. 309–393, Vol. 1). North-Holland. https://doi.org/10.1016/bs.hefe.2016.08.004 (cit. on p. 1).

Bertrand, M., Hanna, R., & Mullainathan, S. (2010). Affirmative action in education: Evidence from engineering college admissions in india. *Journal of Public Economics*, *94*(1), 16–29 (cit. on pp. 1, 7–8).

Bramoullé, Y., Galeotti, A., & Rogers, B. (Eds.). (2016). *The oxford handbook of the economics of networks*. Oxford University Press. (Cit. on p. 6).

Carrell, S. E., Sacerdote, B. I., & West, J. E. (2013). From natural variation to optimal policy? the importance of endogenous peer group formation. *Econometrica*, *81*(3), 855–882. https://doi.org/10.3982/ECTA10168 (cit. on p. 6).

Cassan, G. (2019). Affirmative action, education and gender: Evidence from India. *Journal of Development Economics*, *136*, 51–70 (cit. on p. 7).

Chetty, R., Deming, D. J., & Friedman, J. N. (2026). Diversifying society's leaders? the determinants and causal effects of admission to highly selective private colleges. *Quarterly Journal of Economics*, *141*(1), 51–145 (cit. on pp. 1, 8).

Chetty, R., Jackson, M. O., Kuchler, T., Stroebel, J., et al. (2022a). Social capital i: Measurement and associations with economic mobility. *Nature*, *608*(7921), 108–121 (cit. on p. 1).

Chetty, R., Jackson, M. O., Kuchler, T., Stroebel, J., et al. (2022b). Social capital ii: Determinants of economic connectedness. *Nature*, *608*(7921), 122–134 (cit. on pp. 1, 5, 8).

Chin, A., & Prakash, N. (2011). The redistributive effects of political reservation for minorities: Evidence from India. *Journal of Development Economics*, *96*(2), 265–277. https://doi.org/10.1016/j.jdeveco.2010.10.004 (cit. on p. 1).

Coleman, J. S. (1988). Social capital in the creation of human capital [Supplement: Organizations and Institutions: Sociological and Economic Approaches to the Analysis of Social Structure]. *American Journal of Sociology*, *94*, S95–S120 (cit. on p. 5).

Corno, L., La Ferrara, E., & Burns, J. (2022). Interaction, stereotypes, and performance: Evidence from south africa. *American Economic Review*, *112*(12), 3848–3875 (cit. on p. 6).

Currarini, S., Jackson, M. O., & Pin, P. (2010). Identifying the roles of race-based choice and chance in high school friendship network formation. *Proceedings of the National Academy of Sciences*, *107*(11), 4857–4861. https://doi.org/10.1073/pnas.0911793107 (cit. on p. 1).

Deshpande, A. (2011). *The grammar of caste: Economic discrimination in contemporary india*. Oxford University Press. (Cit. on p. 8).

Deshpande, A. (2013). Social justice through affirmative action in india: An assessment. In J. Wicks-Lim & R. Pollin (Eds.), *Capitalism on trial*. Edward Elgar Publishing. (Cit. on pp. 1, 8).

Deshpande, A., & Newman, K. (2007). Where the path leads: The role of caste in post-university employment expectations. *Economic and Political Weekly*, *42*(41) (cit. on p. 8).

Deshpande, S. (2013). Caste and castelessness: Towards a biography of the "general category". *Economic and Political Weekly*, *48*(15), 32–39 (cit. on p. 8).

Emerick, K. (2018). Trading frictions in indian village economies. *Journal of Development Economics*, *132*, 32–56 (cit. on p. 7).

Fleischman, G. (2026). *Economic and psychological returns to social relationships: Alleviating constraints to network formation in malawi* [Working paper, this version September 16, 2026]. (Cit. on pp. 2, 6).

Frisancho, V., & Krishna, K. (2016). Affirmative action in higher education in India: Targeting, catch up, and mismatch. *Higher Education*, *71*(5), 611–649 (cit. on p. 7).

Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, *78*(6), 1360–1380 (cit. on pp. 2, 5).

Gulzar, S., Haas, N., & Pasquale, B. (2020). Does political affirmative action work, and for whom? theory and evidence on india's scheduled areas. *American Political Science Review*, *114*(4), 1230–1246 (cit. on p. 1).

Hasan, S., & Bagde, S. (2013). The mechanics of social capital and academic performance in an Indian college. *American Sociological Review*, *78*(6), 1009–1032. https://doi.org/10.1177/0003122413505198 (cit. on p. 6).

Henry, O., & Ferry, M. (2017). When cracking the JEE is not enough: Processes of elimination and differentiation, from entry to placement, in the Indian Institutes of Technology (IITs) [Special issue: Sociology of India's Economic Elites. Translated by Renuka George]. *South Asia Multidisciplinary Academic Journal*, (15) (cit. on p. 8).

Hjort, J. (2014). Ethnic divisions and production in firms. *The Quarterly Journal of Economics*, *129*(4), 1899–1946. https://doi.org/10.1093/qje/qju028 (cit. on p. 1).

Jackson, M. O., Nei, S. M., Snowberg, E., & Yariv, L. (2022, December). *The dynamics of networks and homophily* (tech. rep.). National Bureau of Economic Research. (Cit. on p. 6).

Jain, T., & Kapoor, M. (2015). The impact of study groups and roommates on academic performance. *The Review of Economics and Statistics*, *97*(1), 44–54. https://www.jstor.org/stable/43554978 (cit. on p. 6).

Jodhka, S. S., & Newman, K. (2007). In the name of globalisation: Meritocracy, productivity and the hidden language of caste. *Economic and Political Weekly*, *42*(41) (cit. on p. 8).

Kling, J. R., Liebman, J. B., & Katz, L. F. (2007). Experimental analysis of neighborhood effects. *Econometrica*, *75*(1), 83–119. https://doi.org/10.1111/j.1468-0262.2007.00733.x (cit. on pp. 10–11).

Köszegi, B. (2006). Ego utility, overconfidence, and task choice. *Journal of the European Economic Association*, *4*(4), 673–707. https://doi.org/10.1162/JEEA.2006.4.4.673 (cit. on p. 35).

List, J. A., & Uchida, H. (2024, October). *Here today, gone tomorrow? toward an understanding of fade-out in early childhood education programs* (tech. rep. No. 33027) (NBER Working Paper 33027, revised July 2026). National Bureau of Economic Research. https://doi.org/10.3386/w33027 (cit. on p. 6).

Londoño-Vélez, J., Álvarez-Arango, L. E., Rodríguez, C., & Sánchez, F. (2026). *Nonpecuniary returns to selective higher education* [Working paper, this version June 1, 2026]. (Cit. on pp. 1, 5).

Lowe, M. (2021). Types of contact: A field experiment on collaborative and adversarial caste integration. *American Economic Review*, *111*(6), 1807–1844 (cit. on p. 6).

Lowe, M. (2025). Has intergroup contact delivered? *Annual Review of Economics*, *17*, 321–344. https://doi.org/10.1146/annurev-economics-081324-091109 (cit. on pp. 1, 6).

Marmaros, D., & Sacerdote, B. (2006). How do friendships form? *Quarterly Journal of Economics*, *121*(1), 79–119. https://doi.org/10.1093/qje/121.1.79 (cit. on p. 1).

Mayer, A., & Puller, S. L. (2008). The old boy (and girl) network: Social network formation on university campuses. *Journal of Public Economics*, *92*(1–2), 329–347 (cit. on p. 1).

Merlino, L. P., Steinhard, M. F., & Wren-Lewis, L. (2024). The long-run impact of childhood interracial contact on residential segregation. *Journal of Public Economics*, *239*, 105242. https://doi.org/10.1016/j.jpubeco.2024.105242 (cit. on p. 37).

Michelman, V., Price, J., & Zimmerman, S. D. (2022). Old boys' clubs and upward mobility among the educational elite. *The Quarterly Journal of Economics*, *137*(2), 845–909. https://doi.org/10.1093/qje/qjab047 (cit. on pp. 5, 18, 33).

Mousa, S. (2020). Building social cohesion between christians and muslims through soccer in post-isis iraq. *Science*, *369*(6505), 866–870. https://doi.org/10.1126/science.abb3153 (cit. on p. 6).

Munshi, K. (2019). Caste and the indian economy. *Journal of Economic Literature*, *57*(4), 781–834. https://doi.org/10.1257/jel.20171307 (cit. on pp. 2, 7).

Munshi, K., & Rosenzweig, M. (2006). Traditional institutions meet the modern world: Caste, gender, and schooling choice in a globalizing economy. *American Economic Review*, *96*(4), 1225–1252 (cit. on p. 7).

Obminski, A. (2026, May). *Choosing distance: How natives reduce migrant exposure in daily life* (Working paper) (Version dated May 15, 2026). Paris School of Economics. (Cit. on p. 18).

Oh, S. (2023). Does identity affect labor supply? *American Economic Review*, *113*(8), 2055–2083. https://doi.org/10.1257/aer.20211826 (cit. on p. 7).

Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, *90*(5), 751–783. https://doi.org/10.1037/0022-3514.90.5.751 (cit. on pp. 1–2).

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon & Schuster. (Cit. on pp. 2, 5–6).

Putnam, R. D., Feldstein, L. M., & Cohen, D. (2003). *Better together: Restoring the american community*. Simon & Schuster. (Cit. on p. 5).

Rao, G. (2019). Familiarity does not breed contempt: Generosity, discrimination, and diversity in delhi schools. *American Economic Review*, *109*(3), 774–809 (cit. on p. 6).

Rivera, L. A. (2015). *Pedigree: How elite students get elite jobs*. Princeton University Press. (Cit. on p. 2).

Sacerdote, B. (2011). Peer effects in education: How might they work, how big are they and how much do we know thus far? In E. A. Hanushek, S. Machin, & L. Woessmann (Eds.), *Handbook of the economics of education* (pp. 249–277, Vol. 3). Elsevier. https://doi.org/10.1016/B978-0-444-53429-3.00004-1 (cit. on p. 6).

Sekhri, S. (2020). Prestige matters: Wage premium and value addition in elite colleges. *American Economic Journal: Applied Economics*, *12*(3), 207–225 (cit. on p. 6).

Shukla, S. (2025, July). *Making the elite: Class discrimination at multinationals* [Working Paper]. (Cit. on pp. 8, 37).

Subramanian, A. (2015). Making merit: The indian institutes of technology and the social life of caste. *Comparative Studies in Society and History*, *57*(2), 291–322 (cit. on p. 8).

ThePrint. (2026, August). 'rich don't need quota': Another protest rising at jantar mantar, this time against caste-based reservation. (Cit. on p. 1).

Thorat, S., & Newman, K. S. (Eds.). (2010). *Blocked by caste: Economic discrimination in modern india*. Oxford University Press. (Cit. on p. 8).

Wren-Lewis, L., Steinhardt, M., Merlino, L., & Rosenbaum, P. (2025). *The impact of childhood inter-ethnic contact on managers' hiring decisions* [Working paper]. (Cit. on p. 37).

Zimmerman, D. J. (2003). Peer effects in academic outcomes: Evidence from a natural experiment. *The Review of Economics and Statistics*, *85*(1), 9–23 (cit. on p. 6).

Zimmerman, S. D. (2019). Elite colleges and upward mobility to top jobs and top incomes. *American Economic Review*, *109*(1), 1–47. https://doi.org/10.1257/aer.20171019 (cit. on pp. 5, 8).

# 11 Figures

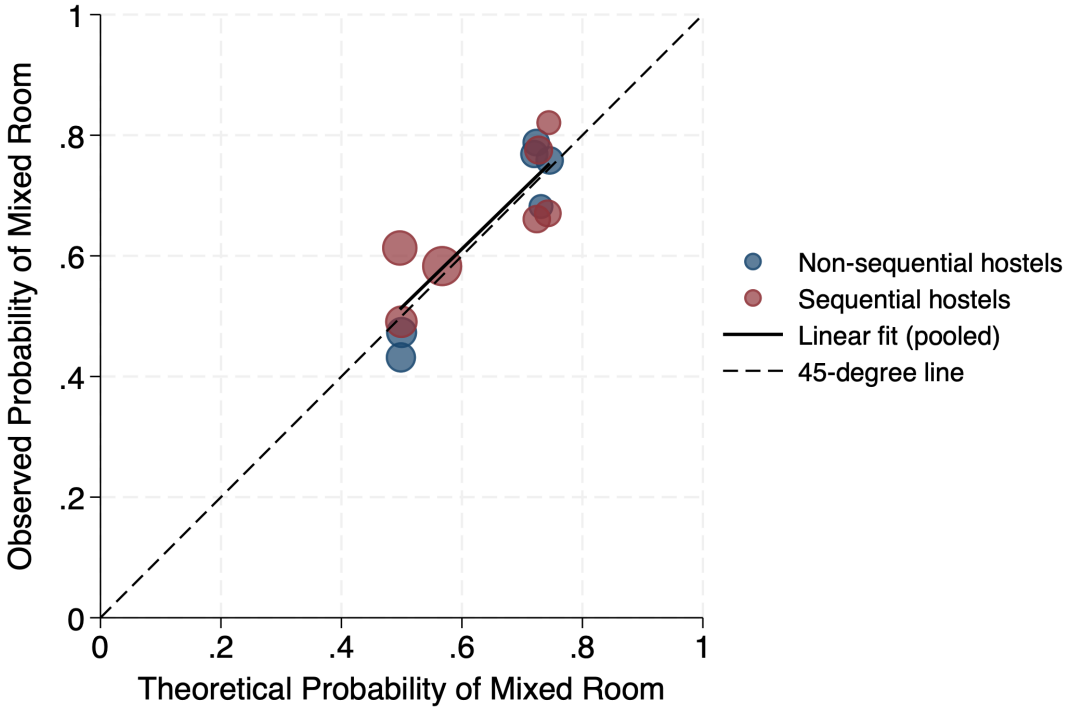



Figure 1: Observed and Theoretical Cross-Caste Mixing Across Hostels

*Notes:* Circle size represents hostel size (number of students). The fitted line is weighted by hostel size.

*Cited on page 9, 15.*

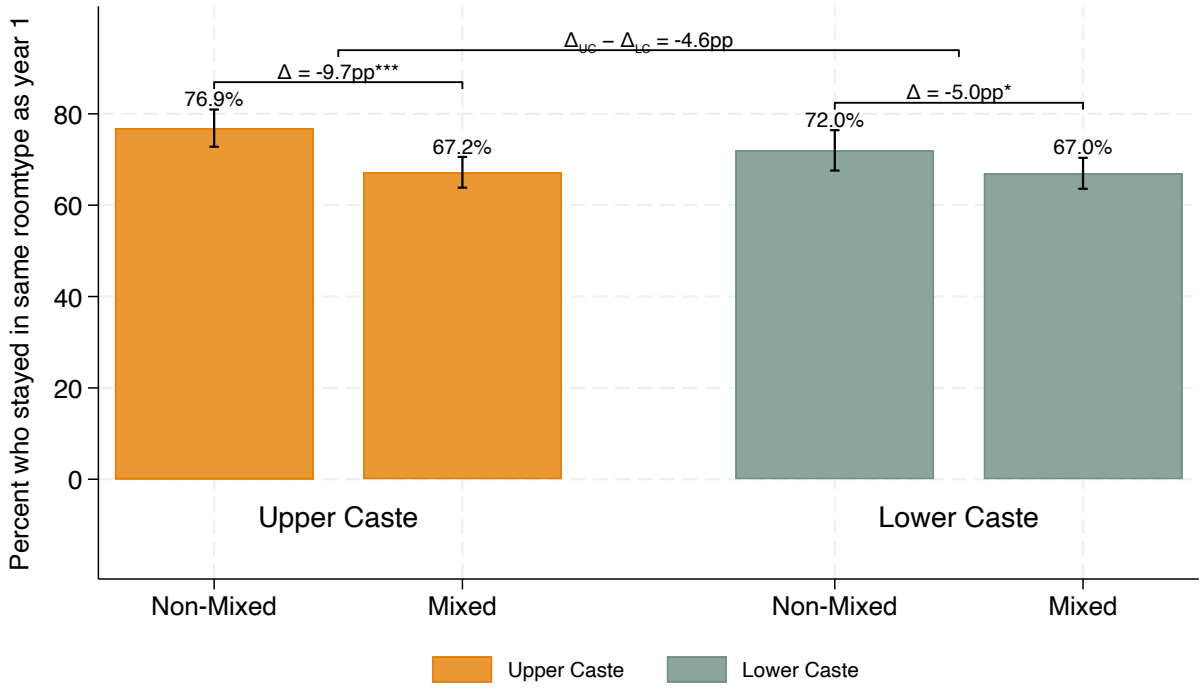



Figure 2: Room Transitions by caste group in Year 2

*Notes:* Bar represents share of each room type continues in the same room type in year 2. In the upper (lower) caste panel, First bars shows students assigned to non-mixed students continued in non-mixed rooms in year 2 and second bar shows share of students assigned to mixed rooms continued in mixed-rooms in year 2. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

*Cited on page 29.*

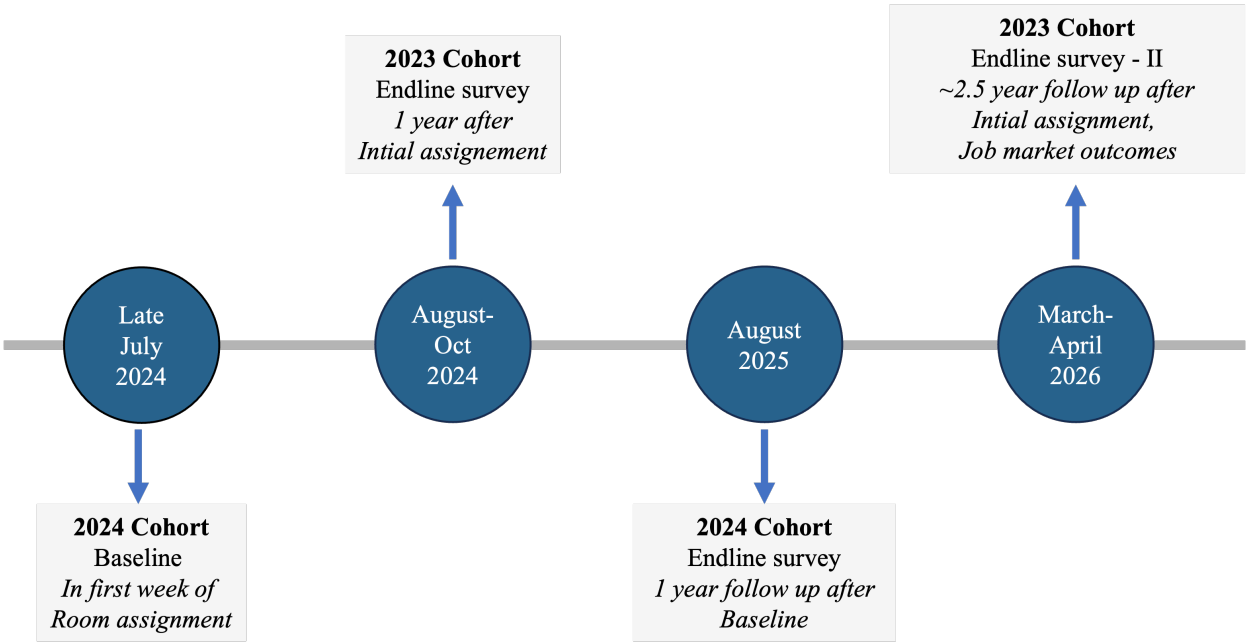



Figure 3: Timeline of Surveys: Baseline for 2024, Endline for 2023, 2024 cohorts and Endline-II for 2023 cohort

# 12 Tables

Table 1: Summary statistics on characteristics

| | Upper Caste | | | Lower Caste | | | Upper Caste - Lower Caste | |
|---|---|---|---|---|---|---|---|---|
| | N | Mean | Sd | N | Mean | Sd | Difference | P-Val |
| Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| *A. Socio Economic Indicators* | | | | | | | | |
| Mother's education (bachelors or higher) | 902 | 0.855 | 0.353 | 881 | 0.571 | 0.495 | 0.284 | 0.000 |
| Father's education (bachelors or higher) | 896 | 0.756 | 0.430 | 876 | 0.614 | 0.487 | 0.141 | 0.000 |
| Knows someone studied in IITs | 912 | 0.265 | 0.442 | 907 | 0.184 | 0.388 | 0.081 | 0.000 |
| Assets Index | 824 | 0.150 | 0.547 | 809 | -0.180 | 0.647 | 0.329 | 0.000 |
| Taken a loan | 885 | 0.148 | 0.355 | 890 | 0.230 | 0.421 | -0.082 | 0.000 |
| Family income (9L or above) | 859 | 0.655 | 0.476 | 895 | 0.415 | 0.493 | 0.241 | 0.000 |
| Owns a laptop/computer | 824 | 0.900 | 0.300 | 809 | 0.759 | 0.428 | 0.142 | 0.000 |
| Consumption Index | 510 | 0.010 | 0.871 | 503 | -0.097 | 0.740 | 0.107 | 0.036 |
| *B. Entrance Exam Preparation and Academic Background* | | | | | | | | |
| JEE Advanced score | 1112 | 201.611 | 47.275 | 1091 | 141.166 | 47.111 | 60.445 | 0.000 |
| Took more than 1 attempt | 945 | 0.145 | 0.352 | 934 | 0.281 | 0.449 | -0.136 | 0.000 |
| Years: JEE preparation | 964 | 2.473 | 1.386 | 964 | 2.175 | 1.365 | 0.298 | 0.000 |
| Average daily study hours JEE | 963 | 8.443 | 3.375 | 962 | 8.874 | 3.472 | -0.431 | 0.006 |
| JEE Prep Cost (in lakhs INR) | 875 | 1.332 | 1.142 | 884 | 1.276 | 1.154 | 0.056 | 0.307 |
| Score in Class XII | 942 | 93.286 | 6.537 | 934 | 90.338 | 6.494 | 2.947 | 0.000 |
| Score in Class X | 939 | 95.044 | 7.282 | 935 | 92.877 | 8.109 | 2.167 | 0.000 |
| *C. Pre-college Friendship Networks* | | | | | | | | |
| Close friends count | 488 | 11.004 | 10.604 | 484 | 9.531 | 9.869 | 1.473 | 0.025 |
| Close friends in IITs | 488 | 0.079 | 0.989 | 484 | -0.034 | 1.067 | 0.113 | 0.087 |
| Friends who did not clear entrance exam | 488 | 4.973 | 8.160 | 484 | 5.983 | 9.111 | -1.010 | 0.069 |
| Share of friends from different caste | 425 | -0.340 | 1.025 | 418 | 0.485 | 0.759 | -0.825 | 0.000 |
| *D. Attitudes towards Affirmative Action and Redistribution* | | | | | | | | |
| AA support: reserved group | 455 | -0.312 | 0.681 | 440 | 0.368 | 0.622 | -0.679 | 0.000 |
| AA support: non-reserved group | 453 | -0.349 | 0.730 | 442 | 0.476 | 0.699 | -0.825 | 0.000 |
| Quota for caste based AA (out of 100) | 476 | 10.378 | 11.478 | 471 | 24.102 | 16.489 | -13.724 | 0.000 |
| Entrance exam: Merit only | 452 | 0.103 | 1.042 | 429 | -0.075 | 1.001 | 0.178 | 0.010 |
| Opportunity inside college: Equal | 453 | 0.008 | 1.092 | 429 | 0.013 | 0.937 | -0.006 | 0.934 |
| *E. Mental Health at Baseline* | | | | | | | | |
| Mental health at Baseline | 502 | 0.032 | 0.476 | 490 | -0.045 | 0.489 | 0.077 | 0.012 |
| PHQ4: anxiety and depression | 455 | 0.017 | 0.813 | 438 | -0.039 | 0.763 | 0.056 | 0.286 |
| Relative wellbeing index | 450 | 0.071 | 0.510 | 426 | -0.049 | 0.498 | 0.120 | 0.000 |
| Worry index | 502 | 0.011 | 0.586 | 490 | -0.064 | 0.687 | 0.075 | 0.065 |
| Satisfied with Specialization/Department | 474 | 0.538 | 0.499 | 461 | 0.638 | 0.481 | -0.100 | 0.002 |

*Notes:* The table reports summary statistics for students from entry years 2023 and 2024 who had one or two roommates. Means and standard deviations are reported separately for upper-caste and lower-caste students. Mother's and father's education indicate whether the parent has a bachelor's degree or higher. Family income indicates annual household income above INR 9,00,000 (approximately USD 11,000). The asset ownership index combines ownership of a house, car, smart TV, agricultural land, non-agricultural land, air conditioner, and washing machine. The expenses index combines expenditure on food, movies/parties, education, and other miscellaneous items. Taken loan indicates whether the student's family has taken an education loan. Owns a laptop indicates whether the student owns a personal laptop. Entrance exam score is the score obtained on the entrance examination (out of 360). Took more than one attempt indicates whether the student took multiple attempts to pass the examination. Years of preparation and hours studied per day refer to preparation for the entrance examination. Cost of entrance preparation is the total preparation cost, reported in lakhs of INR. Class 10 and Class 12 scores are percentage scores on board examinations. Close friends measures the number of close friends reported before entering college; close friends in college measures the number of close friends at college; and close friends in other elite engineering institutes measures the number of close friends at other elite engineering institutes. Support for AA based on costs and benefits to disadvantaged (advantaged) groups measures support for affirmative action based on its perceived costs and benefits for disadvantaged (advantaged) groups. Support for Caste-Based AA measures the number of seats, out of 100, that students believe should be reserved for disadvantaged caste groups. Entrance Exam: Merit Only, Opportunity inside College: Equal, are measuring students' beliefs about merit in the entrance examination, equal opportunity in college, respectively. Mental health index is a composite index of PHQ-4, worry index, relative wellbeing index. All mental health variables are coded so that higher values indicate better mental health. Raw PHQ-4, relative wellbeing, and worry scale items are reverse-coded from their original direction, on which higher values indicate worse mental health. PHQ-4 measures anxiety and depression symptoms; the Relative Happiness Index measures happiness relative to students' pre-college level; the Worry Index measures concerns about both academic and social life of college. Department satisfaction is an indicator of whether the student is satisfied with their department.

*Cited on page 12, 13.*

Table 2: Social Interaction and Substantial Help, Same-Caste Rooms

| | Upper Caste | | | Lower Caste | | | Upper Caste - Lower Caste | |
|---|---|---|---|---|---|---|---|---|
| | N | Mean | Sd | N | Mean | Sd | Difference | P-Val |
| Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| *A. Social interaction (once a week or more)* | | | | | | | | |
| Study together | 286 | 0.462 | 0.499 | 296 | 0.574 | 0.495 | -0.113 | 0.006 |
| Eat together | 288 | 0.597 | 0.491 | 298 | 0.651 | 0.477 | -0.054 | 0.180 |
| Go out together | 286 | 0.304 | 0.461 | 297 | 0.343 | 0.476 | -0.039 | 0.312 |
| Play sports together | 286 | 0.413 | 0.493 | 299 | 0.498 | 0.501 | -0.086 | 0.037 |
| *B. Substantial help received* | | | | | | | | |
| Exam prep: help received | 296 | 0.666 | 0.473 | 308 | 0.666 | 0.473 | -0.000 | 0.999 |
| Internships: help received | 294 | 0.313 | 0.464 | 297 | 0.327 | 0.470 | -0.014 | 0.722 |
| Emotional support: help received | 293 | 0.522 | 0.500 | 305 | 0.574 | 0.495 | -0.052 | 0.206 |
| Financial support: help received | 292 | 0.298 | 0.458 | 296 | 0.463 | 0.499 | -0.165 | 0.000 |
| *C. Substantial help provided* | | | | | | | | |
| Exam prep: help provided | 277 | 0.643 | 0.480 | 288 | 0.701 | 0.458 | -0.059 | 0.137 |
| Internships: help provided | 270 | 0.289 | 0.454 | 277 | 0.336 | 0.473 | -0.047 | 0.238 |
| Emotional support: help provided | 275 | 0.524 | 0.500 | 283 | 0.618 | 0.487 | -0.095 | 0.024 |
| Financial support: help provided | 275 | 0.342 | 0.475 | 285 | 0.495 | 0.501 | -0.153 | 0.000 |

*Notes:* The table reports social interaction and substantial help exchanged between roommates, for students from entry years 2023 and 2024 with one or two roommates, restricted to same-caste rooms. In three-person rooms, roommate-reported outcomes take the maximum over the two roommates' reports, equal to one if the activity occurred with at least one roommate; in two-person rooms the single roommate report is used. Panel A reports indicators for social interaction – studying, eating, going out, and playing sports together – equal to one if the activity occurred once a week or more. Panel B reports indicators for substantial help received from a roommate with exam preparation, internships, emotional support, and financial support, equal to one if the roommate was reported as 'Sometimes helpful' or 'Mostly helpful' on that dimension. Panel C reports the analogous indicators for substantial help provided to a roommate, equal to one if the respondent reported being 'Sometimes' or 'Mostly' supportive. Mean, standard deviation, and sample size are reported separately for upper-caste and lower-caste students; the p-value is from an unequal-variance t-test of equal means.

*Cited on page 13.*

Table 3: Effect on GPA, Mental Health and Attitudes towards Affirmative Action

| | CGPA : First Year | Mental health index | AA support: reserved group | AA support: non-reserved group |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| *Panel A: Upper Caste Sample* | | | | |
| Mixed Room | -0.103** | -0.062 | 0.115** | 0.048 |
| | (0.050) | (0.044) | (0.057) | (0.058) |
| DV Mean in same caste rm | 0.474 | 0.027 | -0.251 | -0.265 |
| R-squared | 0.473 | 0.149 | 0.172 | 0.184 |
| N | 947 | 935 | 820 | 817 |
| Sharpened q-value | 0.044 | 0.108 | 0.044 | 0.206 |
| *Panel B: Lower Caste Sample* | | | | |
| Mixed Room | 0.091* | -0.082** | -0.022 | 0.110** |
| | (0.052) | (0.042) | (0.045) | (0.056) |
| DV Mean in same caste rm | -0.445 | 0.001 | 0.239 | 0.237 |
| R-squared | 0.433 | 0.146 | 0.110 | 0.131 |
| N | 896 | 928 | 829 | 820 |
| Sharpened q-value | 0.053 | 0.049 | 0.309 | 0.049 |
| *Panel C: Full Sample* | | | | |
| Mixed Room | -0.015 | -0.073** | 0.049 | 0.100** |
| | (0.038) | (0.032) | (0.040) | (0.047) |
| DV Mean in same caste rm | 0.021 | 0.014 | -0.002 | -0.012 |
| R-squared | 0.506 | 0.109 | 0.138 | 0.135 |
| N | 1843 | 1863 | 1649 | 1637 |
| Sharpened q-value | 0.706 | 0.106 | 0.318 | 0.108 |
| P val ($\beta_LC == \beta_UC$) | 0.033 | 0.509 | 0.086 | 0.648 |

*Notes:* The table presents results for academic performance, mental health, and attitudes toward affirmative action. Column 1 reports estimates for cumulative GPA at the end of the first year. Column 2 reports estimates for a composite Mental Health Index, constructed as the average of standardized scores for three measures: the PHQ-4 index, a relative well-being index (measuring well-being relative to the pre-college period), and a worry index (capturing academic and social concerns during college). Negative values of the index indicate worse mental health outcomes. Column 3 reports an index of support for AA based on its perceived costs and benefits for reserved-group students. Column 4 reports an index of support for AA based on its perceived costs and benefits for non-reserved-group students. The final row of the full-sample panel (Panel C) reports the p-value from a pooled specification interacting mixed-room assignment with lower-caste, testing whether the lower- and upper-caste treatment effects differ. All regressions include hostel-by-cohort and specialization-year fixed effects. I use ANCOVA specification along with a control for the number of roommates. Standard errors are clustered at the room level. Sharpened q-values (Anderson 2008) correcting for multiple hypothesis testing within each panel are reported. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

*Cited on page 16, 17, 31.*

Table 4: Heterogeneous Effects of Roommate's Entrance Exam Score on First-Year GPA

| | Upper Caste | | | Lower Caste | | |
|---|---|---|---|---|---|---|
| | (1) CGPA : First Year | (2) CGPA : First Year | (3) CGPA : First Year | (4) CGPA : First Year | (5) CGPA : First Year | (6) CGPA : First Year |
| Mixed Room | -0.103** | -0.118* | -0.100 | 0.091* | 0.021 | 0.001 |
| | (0.050) | (0.064) | (0.064) | (0.052) | (0.065) | (0.066) |
| Roommate's Entrance Score (SD) | | -0.011 | 0.044 | | 0.091** | 0.136** |
| | | (0.040) | (0.055) | | (0.043) | (0.058) |
| Mixed Room × Roommate's Entrance Score | | | -0.084 | | | -0.068 |
| | | | (0.058) | | | (0.064) |
| DV Mean, Non-mixed | 0.474 | 0.474 | 0.474 | -0.445 | -0.445 | -0.445 |
| R-squared | 0.473 | 0.469 | 0.470 | 0.433 | 0.439 | 0.440 |
| N | 947 | 919 | 919 | 896 | 867 | 867 |

*Notes:* This table reports estimates of the effects of mixed-room assignment on GPA, controlling for roommates' entrance-exam scores and their interaction with mixed-room assignment. Columns 1–3 report results for upper-caste students, and Columns 4–6 report results for lower-caste students. Within each caste group, Columns 1 and 4 report the baseline specification without mediators; Columns 2 and 5 add roommates' entrance-exam scores; and Columns 3 and 6 additionally include the interaction between roommates' entrance-exam scores and mixed-room assignment. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects and control for the number of roommates. Standard errors, clustered at the room level, are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 25.*

Table 5: Effect of Mixed-Room Assignment on Roommate Interaction Intensity

| | Upper Caste | | | Lower Caste | | |
|---|---|---|---|---|---|---|
| | (1) Interaction Intensity (Composite Index) | (2) Study Interactions | (3) Social Interactions | (4) Interaction Intensity (Composite Index) | (5) Study Interactions | (6) Social Interactions |
| Mixed Room | -0.083 | -0.016 | -0.085 | -0.159** | -0.042 | -0.181*** |
| | (0.073) | (0.060) | (0.077) | (0.067) | (0.057) | (0.069) |
| DV Mean, Non-mixed | -0.111 | -0.080 | -0.098 | 0.126 | 0.047 | 0.120 |
| R-squared | 0.141 | 0.173 | 0.150 | 0.116 | 0.116 | 0.126 |
| N | 865 | 906 | 864 | 883 | 938 | 879 |

Columns 1-3 restrict to upper-caste students, columns 4-6 to lower-caste students. Column 1(4) reports the Composite Interaction Intensity. Columns 2(5) report study-related interactions and 3(6) reports social interaction index. All regressions include hostel-by-cohort and specialization fixed effects and control for the number of roommates, Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 25, 28, 29.*

Table 6: Effect on GPA, Internships, Mental Health and Attitudes towards Affirmative Action: 3 Years after Admission

| | CGPA : Third Year (1) | Got an internship offer (2) | Salary: 3rd year activity (in 1000 INR) (3) | Mental health: 3yr (4) | AA support: reserved group (5) | AA support: non-reserved group (6) |
|---|---|---|---|---|---|---|
| *Panel A: Upper Caste Sample* | | | | | | |
| Mixed Room | -0.125* | -0.044 | -32.542*** | -0.044 | -0.028 | -0.074 |
| | (0.075) | (0.038) | (11.716) | (0.049) | (0.065) | (0.073) |
| DV Mean in same caste rm | 0.518 | 0.782 | 163.631 | 0.089 | -0.138 | -0.197 |
| R-squared | 0.327 | 0.260 | 0.418 | 0.068 | 0.070 | 0.079 |
| N | 471 | 469 | 446 | 472 | 452 | 454 |
| Sharpened q-value | 0.244 | 0.370 | 0.029 | 0.370 | 0.556 | 0.370 |
| *Panel B: Lower Caste Sample* | | | | | | |
| Mixed Room | 0.085 | -0.073* | -9.535 | -0.016 | 0.112* | 0.086 |
| | (0.077) | (0.042) | (7.774) | (0.043) | (0.061) | (0.066) |
| DV Mean in same caste rm | -0.459 | 0.487 | 66.921 | -0.072 | 0.118 | 0.165 |
| R-squared | 0.207 | 0.263 | 0.234 | 0.059 | 0.080 | 0.072 |
| N | 500 | 474 | 485 | 494 | 468 | 467 |
| Sharpened q-value | 0.321 | 0.259 | 0.321 | 0.710 | 0.259 | 0.321 |
| *Panel C: Full Sample* | | | | | | |
| Mixed Room | -0.016 | -0.046 | -21.309*** | -0.028 | 0.042 | -0.001 |
| | (0.055) | (0.029) | (7.213) | (0.033) | (0.046) | (0.053) |
| DV Mean in same caste rm | -0.000 | 0.631 | 112.238 | 0.004 | -0.004 | -0.009 |
| R-squared | 0.365 | 0.270 | 0.365 | 0.049 | 0.042 | 0.049 |
| N | 971 | 943 | 931 | 966 | 920 | 921 |
| Sharpened q-value | 0.745 | 0.261 | 0.018 | 0.527 | 0.527 | 0.820 |
| P val ($\beta_LC == \beta_UC$) | 0.064 | 0.621 | 0.077 | 0.814 | 0.072 | 0.073 |

*Notes:* The table presents effects of mixed-room assignment on medium-run academic, labor-market, mental health, and attitudinal outcomes. Column 1 reports estimates for cumulative GPA through the fifth semester, the first semester of the third year. Column 2 reports results for third-year summer internship completion, an indicator for whether a student secured an internship, a direct input into final job offers. Column 3 reports results for internship stipend. Column 4 reports estimates for the composite Mental Health Index at the three-year follow-up, constructed using standardized scores of the PHQ-4 index, and the worry index capturing academic- and social-life concerns in college. Negative values of the index indicate worse mental health outcomes. Column 5 reports an index of support for AA based on its perceived costs and benefits for reserved-group students. Column 6 reports an index of support for AA based on its perceived costs and benefits for non-reserved-group students. The final row of the full-sample panel (Panel C) reports the p-value from a pooled specification interacting mixed-room assignment with lower-caste, testing whether the lower- and upper-caste treatment effects differ. All regressions include hostel-by-cohort and specialization-year fixed effects. Columns 3 through 6 do not include a baseline control for the respective outcome, since baseline mental health and AA measures exist only for the 2024 cohort and follow up sample is from 2023 cohort. Standard errors are clustered at the room level. Sharpened q-values (Anderson 2008) correcting for multiple hypothesis testing within each panel are reported. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively.

*Cited on page 31, 32, 35, 94.*

Table 7: Effect on Leadership Positions, Job Preferences, and Expected Salary: Pooled One- and Three-Year Sample

| | Upper Caste | | | Lower Caste | | |
|---|---|---|---|---|---|---|
| | (1) Clubs Leadership | (2) Preferred job sector: Finance/Consulting | (3) Expected salary (INR 1000s) | (4) Clubs Leadership | (5) Preferred job sector: Finance/Consulting | (6) Expected salary (INR 1000s) |
| Mixed Room | -0.091** | -0.078** | -80.385 | 0.005 | -0.029 | -34.579 |
| | (0.039) | (0.033) | (358.694) | (0.036) | (0.029) | (320.247) |
| DV Mean, Non-mixed | 0.079 | 0.479 | 5332.267 | -0.083 | 0.234 | 4301.939 |
| R-squared | 0.113 | 0.131 | 0.142 | 0.087 | 0.095 | 0.066 |
| N | 968 | 961 | 1062 | 953 | 950 | 1061 |

Columns 1-3 restrict to upper-caste students, columns 4-6 to lower-caste students. Column 1 reports effects on holding a position of responsibility in student clubs (Clubs Leadership index). Column 2 reports effects on preferring a job in finance or consulting. Column 3 reports effects on expected first-job salary in thousands of INR, top-coded at the 95th percentile to reduce the influence of outliers. No additional controls are included. Outcomes pool each student's most recent available measurement: the one-year follow-up for the 2024 cohort and the three-year follow-up for the 2023 cohort. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects and control for the number of roommates. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 33.*

Table 8: Heterogeneous Effects on Affirmative Action Attitudes by Baseline Belief that the Entrance Exam Reflects Merit

| | Upper Caste | | Lower Caste | |
|---|---|---|---|---|
| | (1) AA support: reserved group | (2) AA support: non-reserved group | (3) AA support: reserved group | (4) AA support: non-reserved group |
| Mixed Room | 0.074 | 0.010 | -0.039 | 0.098 |
| | (0.083) | (0.091) | (0.065) | (0.071) |
| Baseline Merit Belief(SD) | -0.182*** | -0.186*** | -0.142*** | -0.164*** |
| | (0.060) | (0.061) | (0.053) | (0.057) |
| Mixed Room × Baseline Merit Belief | 0.142** | 0.135* | 0.051 | 0.143** |
| | (0.071) | (0.077) | (0.065) | (0.069) |
| DV Mean, Non-mixed | -0.251 | -0.265 | 0.239 | 0.237 |
| R-squared | 0.128 | 0.159 | 0.108 | 0.118 |
| N | 374 | 376 | 354 | 354 |

Columns 1-2 restrict to upper-caste students, columns 3-4 to lower-caste students. Column 1 (3) the reserved-group index indicating support for AA based on its perceived costs and benefits for reserved-group students. Column 2 (4) the non-reserved-group index indicating support for AA based on its perceived costs and benefits for non-reserved-group students. Each regression interacts mixed-room assignment with the student's baseline belief that only merit is required to clear the entrance exam, to test whether the attitude effect varies with prior meritocratic belief. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects, control for the number of roommates. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 34.*

Table 9: Heterogeneous Effects on Affirmative Action Attitudes by Baseline Cross-Caste Friendship

| | Upper Caste | | Lower Caste | |
|---|---|---|---|---|
| | (1) AA support: reserved group | (2) AA support: non-reserved group | (3) AA support: reserved group | (4) AA support: non-reserved group |
| Mixed Room | 0.007 | -0.071 | 0.000 | 0.158 |
| | (0.093) | (0.106) | (0.073) | (0.099) |
| Baseline Social Segregation | -0.119** | -0.128** | -0.107 | -0.206** |
| | (0.057) | (0.062) | (0.073) | (0.104) |
| Mixed Room × Baseline Social Segregation | 0.131* | 0.123 | 0.068 | 0.108 |
| | (0.070) | (0.076) | (0.088) | (0.110) |
| DV Mean, Non-mixed | -0.251 | -0.265 | 0.239 | 0.237 |
| R-squared | 0.129 | 0.158 | 0.077 | 0.120 |
| N | 351 | 353 | 344 | 344 |

Columns 1-2 restrict to upper-caste students, columns 3-4 to lower-caste students. Column 1 (3) the reserved-group index indicating support for AA based on its perceived costs and benefits for reserved-group students. Column 2 (4) the non-reserved-group index indicating support for AA based on its perceived costs and benefits for non-reserved-group students. Each regression interacts mixed-room assignment with the student's pre-college share of other-caste friends, testing whether the attitude effect varies with prior cross-caste exposure. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects, control for the number of roommates. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 34.*

Table 10: Effect on Exam Preparation and Emotional or Financial Help Received from and Provided to Roommate

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) Got exam prep | (2) Got Emotional /Financial Help | (3) Provided exam prep | (4) Provided Emotional /Financial Help | (5) Got exam prep | (6) Got Emotional /Financial Help | (7) Provided exam prep | (8) Provided Emotional /Financial Help |
| Mixed Room | -0.170* | -0.040 | 0.144* | 0.106 | 0.120 | -0.130* | -0.142** | -0.167** |
| | (0.090) | (0.075) | (0.082) | (0.073) | (0.075) | (0.072) | (0.071) | (0.069) |
| DV Mean, Non-mixed | -0.040 | -0.113 | -0.081 | -0.154 | 0.048 | 0.103 | 0.089 | 0.150 |
| R-squared | 0.097 | 0.092 | 0.092 | 0.107 | 0.081 | 0.089 | 0.078 | 0.093 |
| N | 880 | 878 | 835 | 836 | 887 | 882 | 841 | 834 |

*Notes:* This table reports the effects of mixed-room assignment on the types of help received from roommates. Columns 1–4 report results for upper-caste students, and Columns 5–8 report results for lower-caste students. Columns 1 and 5 report effects on academic help got from roommates; Columns 2 and 6 report effects on emotional or financial help received; Columns 3 and 7 report effects on academic help provided to roommates; and Columns 4 and 8 effects on emotional or financial help provided. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects and control for the number of roommates. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 11: Effect on Support for Affirmative Action in Education, Jobs, and Politics: Three Years after Admission

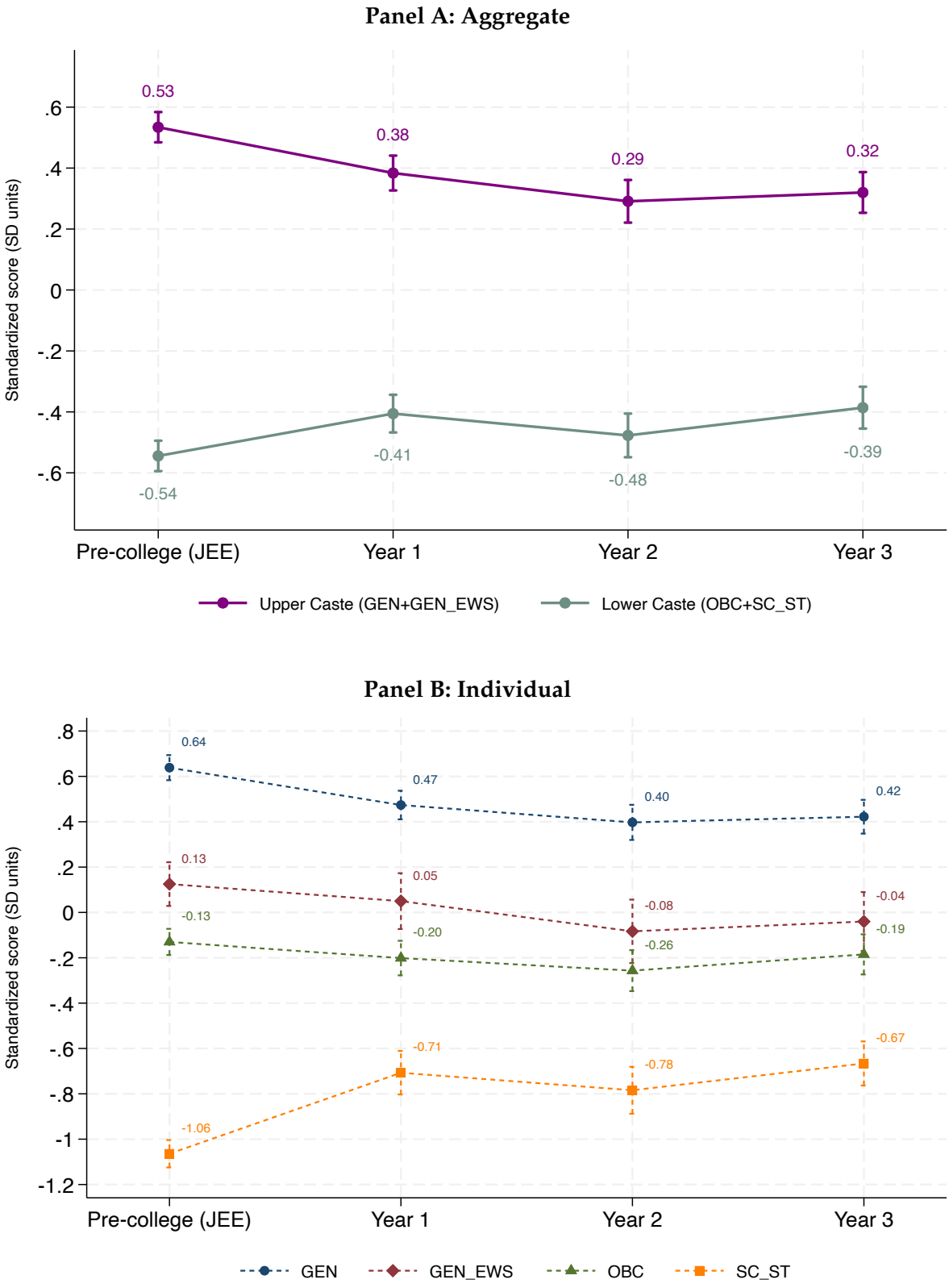
| | Upper Caste | | | Lower Caste | | |
|---|---|---|---|---|---|---|
| | (1) Education | (2) Jobs | (3) Politics | (4) Education | (5) Jobs | (6) Politics |
| Mixed Room | -0.077 | -0.170** | -0.145 | 0.033 | 0.084 | -0.036 |
| | (0.095) | (0.085) | (0.094) | (0.081) | (0.077) | (0.088) |
| DV Mean, Non-mixed | -0.232 | -0.189 | -0.184 | 0.196 | 0.174 | 0.152 |
| R-squared | 0.035 | 0.032 | 0.027 | 0.032 | 0.046 | 0.037 |
| N | 459 | 461 | 456 | 465 | 464 | 456 |

Columns 1-3 restrict to upper-caste students, columns 4-6 to lower-caste students. Column 1 reports effects on support for caste-based reservations in elite educational institutions. Column 2 reports effects on support for reservations in public- and private-sector jobs. Column 3 reports effects on support for reservations in politics and local elections. No additional controls are included. Sample is restricted to the 2023 cohort's three-year follow-up. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects and control for the number of roommates. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 36.*

# 13 Online Appendix

Figure A1: Academic Trajectories by caste from Baseline to year 3

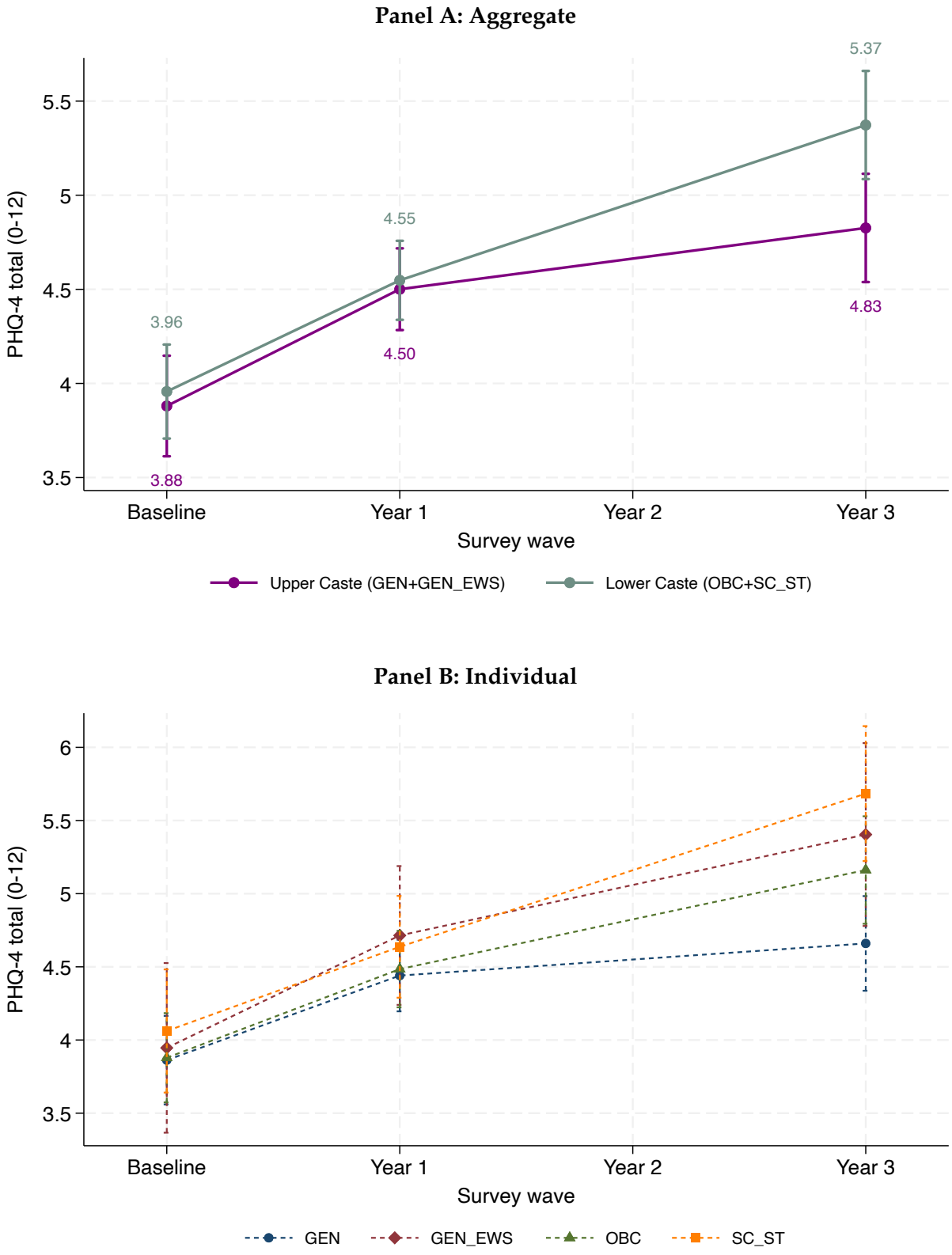



*Notes:* The figure shows trends in standardized GPA and baseline entrance-exam scores. Baseline exam scores are standardized using their own distribution, while GPA in Years 1, 2, and 3 is standardized relative to the Year 1 GPA distribution. Baseline and Year 1 data include both the 2023 and 2024 cohorts, whereas Years 2 and 3 include only the 2023 cohort. Panel A shows trends for upper- and lower-caste students. Panel B disaggregates these groups further to show trends for each subgroup.



*Cited on page 31.*

Figure A2: Mental Health (PHQ4) Trajectories by caste from Baseline to year 3




*Notes:* The figure shows trends in PHQ-4 scores. Baseline data include only the 2024 cohort, Year 1 data include both the 2023 and 2024 cohorts, and Year 3 data include only the 2023 cohort. Panel A shows trends for upper- and lower-caste students. Panel B further disaggregates these groups to show trends for each subgroup.

*Cited on page 31.*

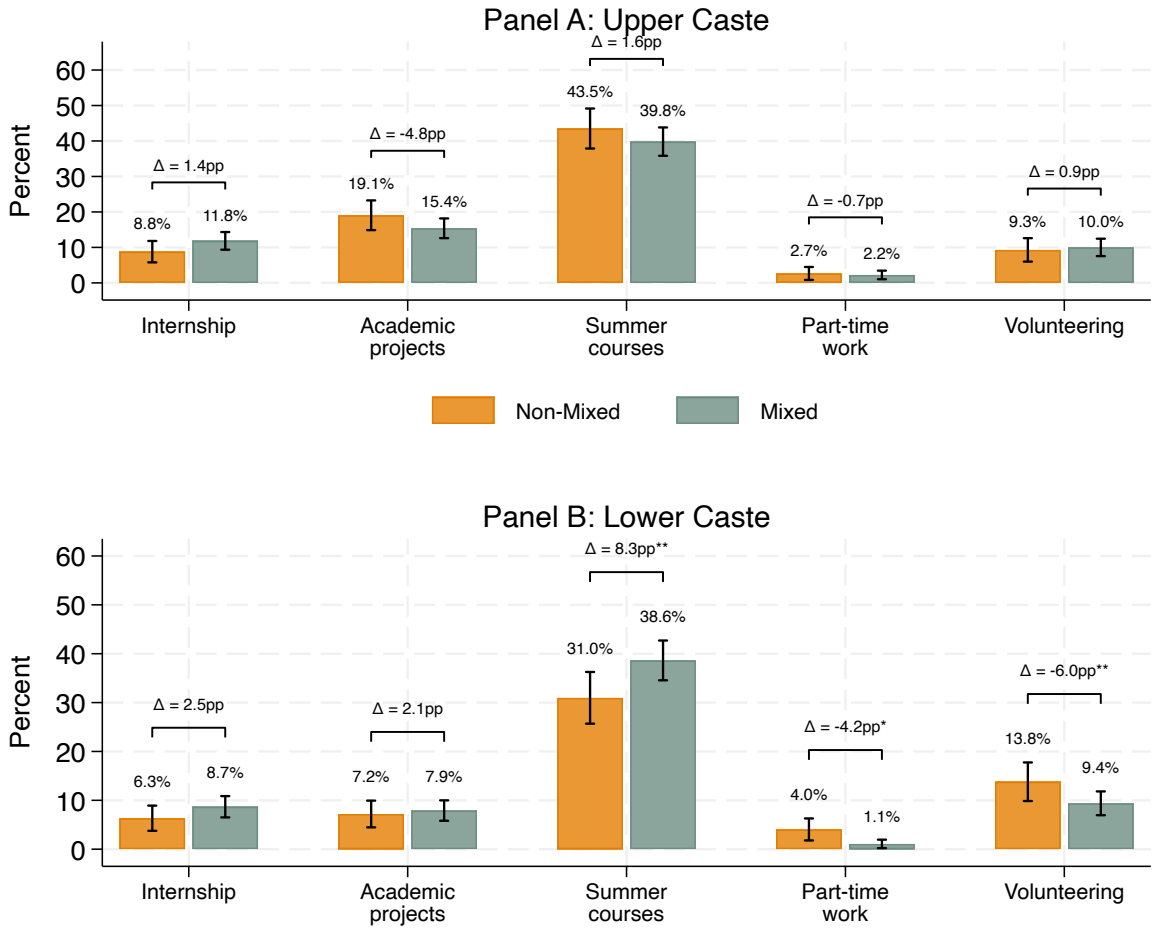



Figure A3: Summer Activities at the end of year 1

*Notes:* Each bar show mean of the activity by room type. Delta and significance is calculated by running baseline specification with hostel-year, specialization-year and roommate fixed effects and I also control for baseline entrance exam scores in all regressions and standard errors are clustered at room level ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

*Cited on page 33.*

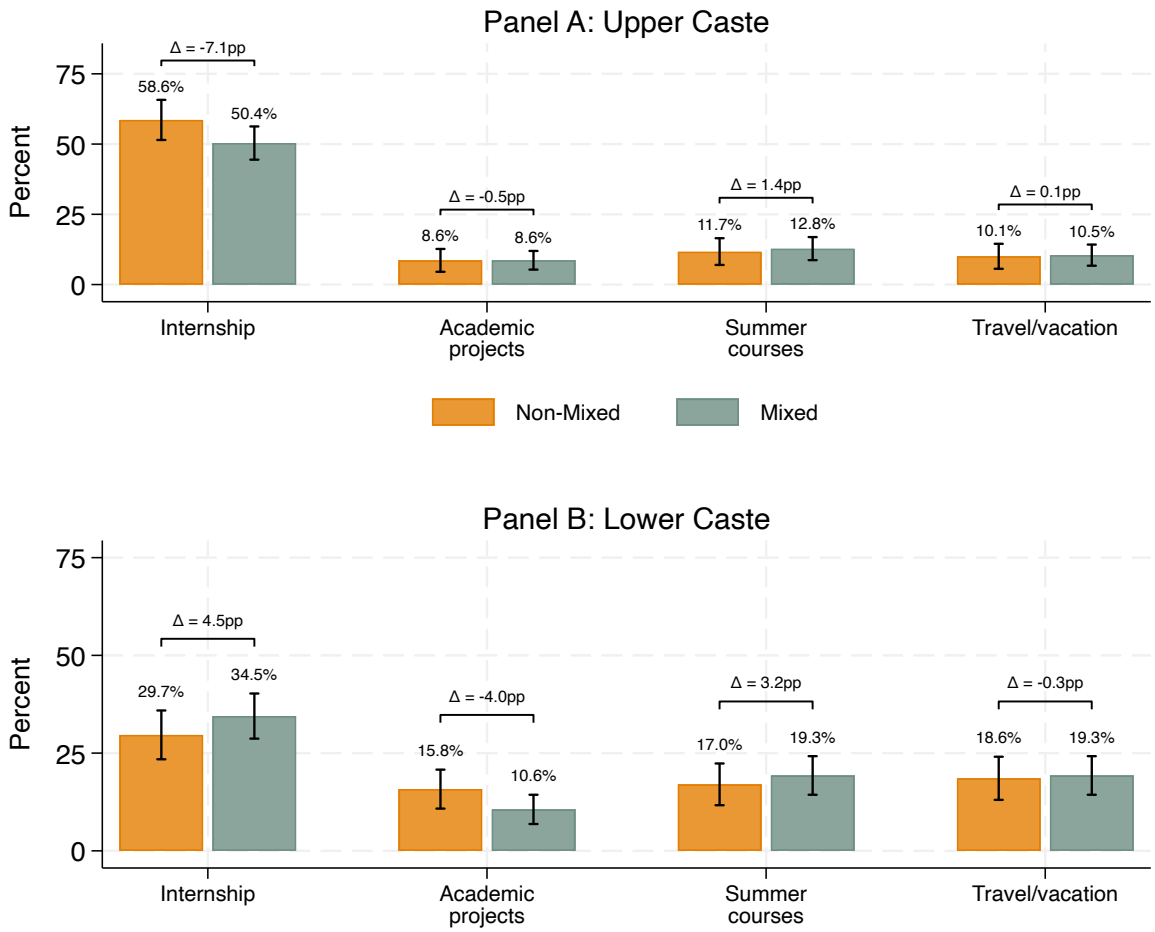
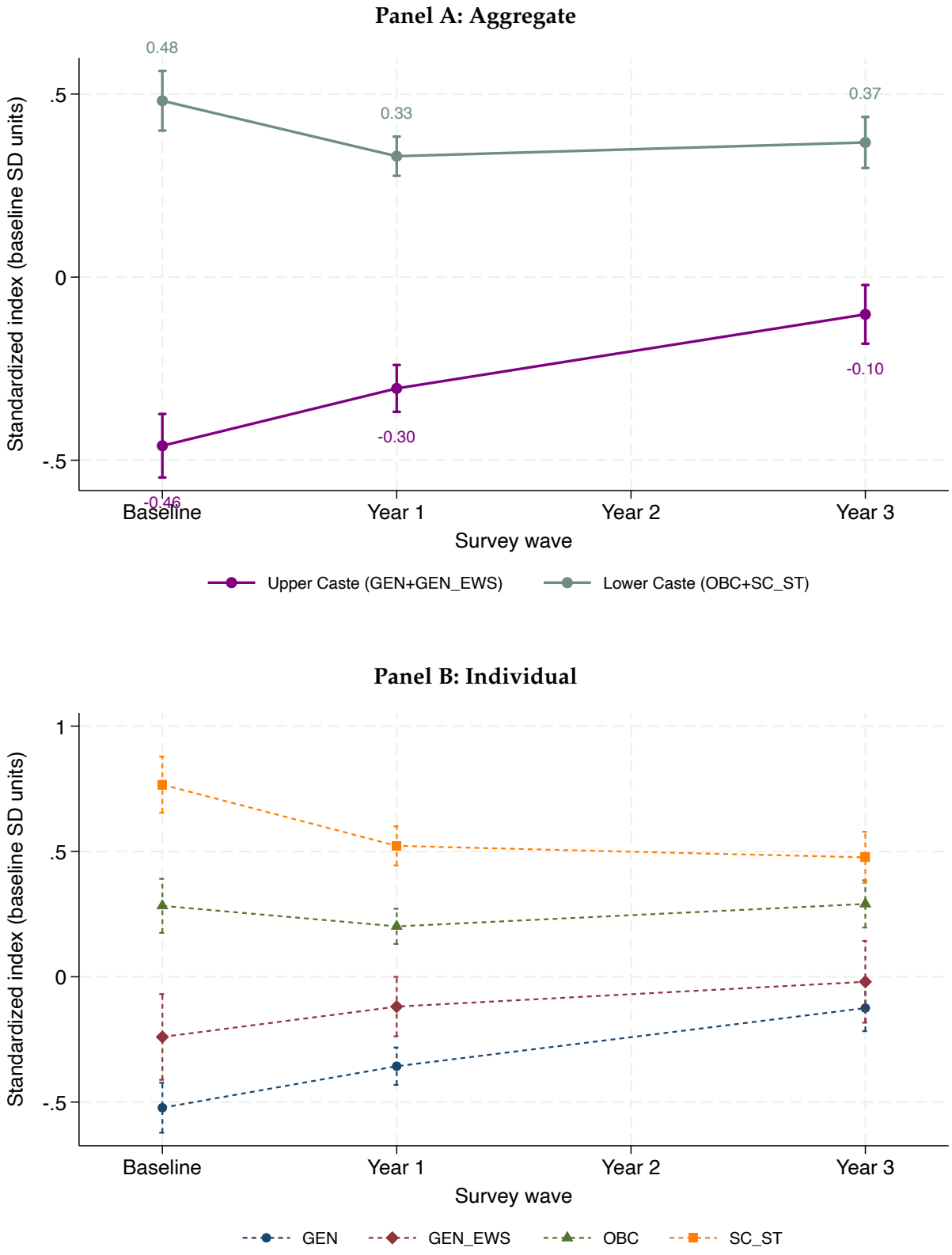



Figure A4: Summer Activities at the end of year 2

*Notes:* Each bar show mean of the activity by room type. Delta and significance is calculated by running baseline specification with hostel-year, specialization-year and roommate fixed effects and I also control for baseline entrance exam scores in all regressions and standard errors are clustered at room level ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

*Cited on page 33.*

Figure A5: AA Supp: Costs and Benefits to reserved group from Baseline to year 3

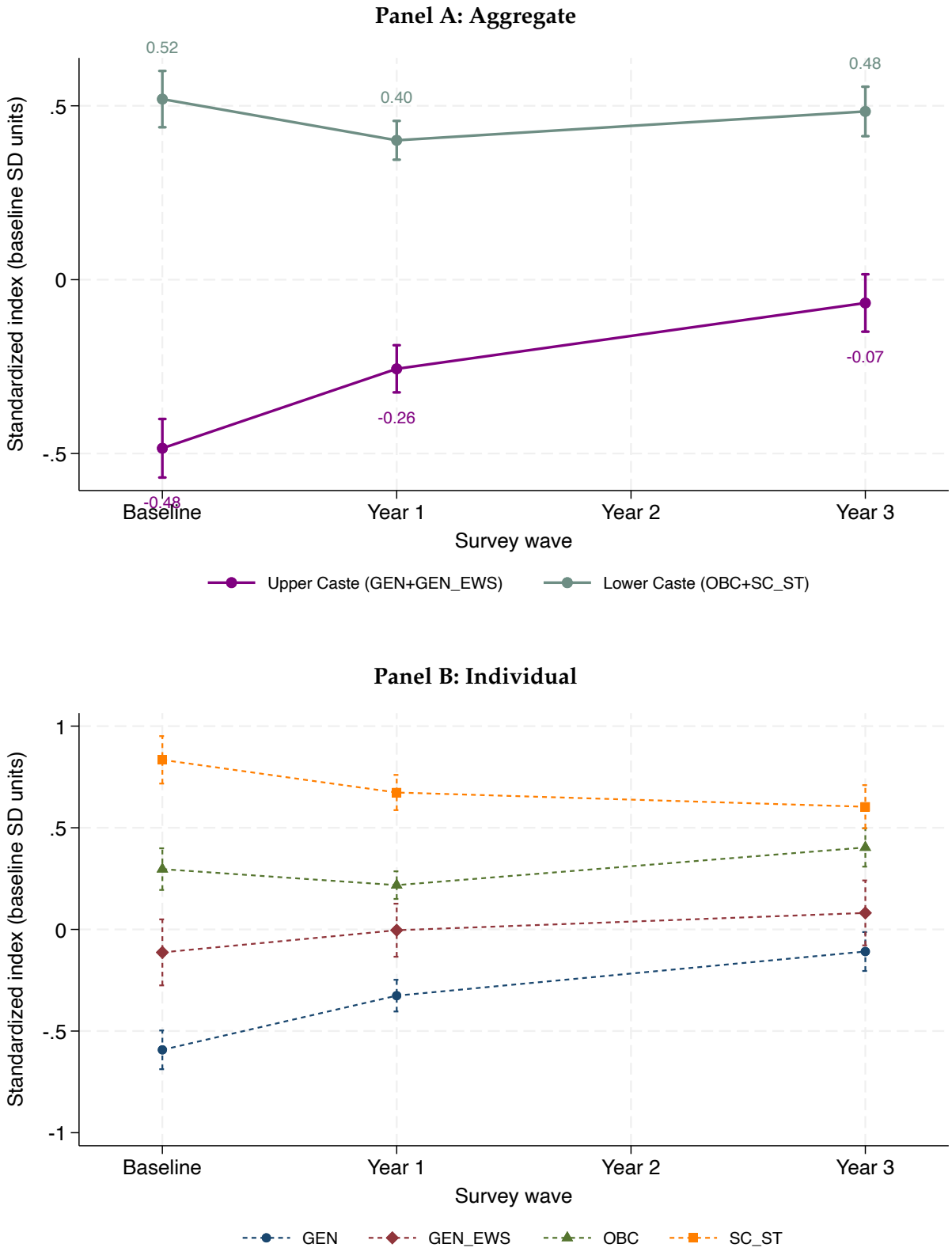



*Notes:* The figure shows trends in support for affirmative action (AA), measured by an index of perceived costs and benefits to reserved groups. The indices are standardized relative to their baseline distributions. Baseline data include only the 2024 cohort, Year 1 data include both the 2023 and 2024 cohorts, and Year 3 data include only the 2023 cohort. Panel A shows trends for upper- and lower-caste students. Panel B further disaggregates these groups to show trends for each subgroup.



*Cited on page 36.*

Figure A6: AA Supp: Costs and Benefits to non-reserved group from Baseline to year 3




*Notes:* The figure shows trends in support for affirmative action (AA), measured by an index of perceived costs and benefits to non-reserved groups. The indices are standardized relative to their baseline distributions. Baseline data include only the 2024 cohort, Year 1 data include both the 2023 and 2024 cohorts, and Year 3 data include only the 2023 cohort. Panel A shows trends for upper- and lower-caste students. Panel B further disaggregates these groups to show trends for each subgroup.



*Cited on page 36.*

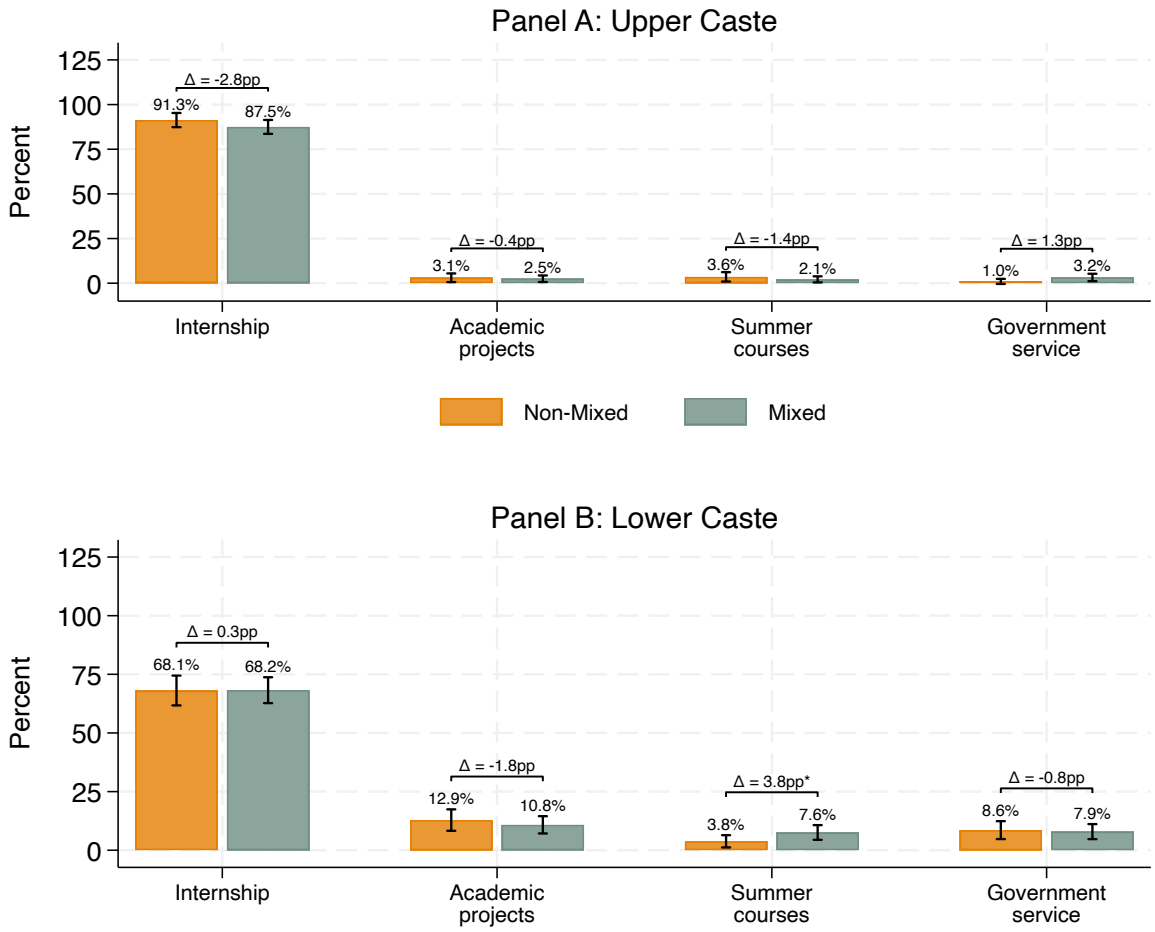



Figure A7: Summer Activities at the end of year 3

*Notes:* Each bar show mean of the activity by room type. Delta and significance is calculated by running baseline specification with hostel-year, specialization-year and roommate fixed effects and I also control for baseline entrance exam scores in all regressions and standard errors are clustered at room level ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

Table A1: Survey Response Rates by Wave

| Wave | Sampled (N) | Opened Survey Link | Responded to ≥1 Outcome | Completed Survey |
|---|---|---|---|---|
| 2024 Baseline | 1,147 | 90.8% | 86.4% | 82.0% |
| 2024 Endline | 1,147 | 93.4% | 92.1% | 90.3% |
| 2023 Endline (1 Year), Raw | 1,120 | 85.6% | 81.0% | 77.6% |
| 2023 Endline (1 Year), Effective | | | 92.8% | 90.2% |
| 2023 Endline (3 Years) | 1,120 | 90.7% | 89.4% | 87.1% |

Notes: *Notes:* Sample is 2023 and 2024 admission cohorts and two surveys waves for each cohort. *Opened survey link* indicates that the student provided consent, entered their name and college ID, and completed at least one page of the survey instrument. *Responded* indicates that the student progressed beyond the demographic and academic-outcome pages. *Completed* indicates that the student finished the survey in full. The 2023 Endline (1 Year) survey was conducted in two stages. In the initial stage, the response rate was 71.7

*Cited on page 10, 98.*

Table A2: Extensive and Intensive Margins of Help Between Roommates, Same-Caste Rooms

| | Upper Caste | | | Lower Caste | | | Upper Caste - Lower Caste | |
|---|---|---|---|---|---|---|---|---|
| | N | Mean | Sd | N | Mean | Sd | Difference | P-Val |
| Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| *A. Never asked for help: received* | | | | | | | | |
| Exam prep: never asked (received) | 296 | 0.206 | 0.405 | 308 | 0.153 | 0.360 | 0.053 | 0.087 |
| Internships: never asked (received) | 294 | 0.544 | 0.499 | 297 | 0.431 | 0.496 | 0.113 | 0.006 |
| Emotional support: never asked (received) | 293 | 0.365 | 0.482 | 305 | 0.259 | 0.439 | 0.106 | 0.005 |
| Financial support: never asked (received) | 292 | 0.565 | 0.497 | 296 | 0.385 | 0.487 | 0.180 | 0.000 |
| *B. Never asked for help: provided* | | | | | | | | |
| Exam prep: roommate never asked | 277 | 0.238 | 0.427 | 288 | 0.153 | 0.360 | 0.085 | 0.011 |
| Internships: roommate never asked | 270 | 0.570 | 0.496 | 277 | 0.422 | 0.495 | 0.148 | 0.001 |
| Emotional support: roommate never asked | 275 | 0.349 | 0.478 | 283 | 0.219 | 0.414 | 0.130 | 0.001 |
| Financial support: roommate never asked | 275 | 0.556 | 0.498 | 285 | 0.358 | 0.480 | 0.198 | 0.000 |
| *C. Substantial help, conditional on having asked: received* | | | | | | | | |
| Exam prep: substantial help received, if asked | 235 | 0.838 | 0.369 | 261 | 0.785 | 0.411 | 0.053 | 0.132 |
| Internships: substantial help received, if asked | 134 | 0.687 | 0.466 | 169 | 0.574 | 0.496 | 0.113 | 0.043 |
| Emotional support: substantial help received, if asked | 186 | 0.823 | 0.383 | 226 | 0.774 | 0.419 | 0.048 | 0.223 |
| Financial support: substantial help received, if asked | 127 | 0.685 | 0.466 | 182 | 0.753 | 0.433 | -0.068 | 0.197 |
| *D. Substantial help, conditional on having asked: provided* | | | | | | | | |
| Exam prep: substantial help provided, if asked | 211 | 0.844 | 0.364 | 244 | 0.828 | 0.378 | 0.016 | 0.652 |
| Internships: substantial help provided, if asked | 116 | 0.672 | 0.471 | 160 | 0.581 | 0.495 | 0.091 | 0.122 |
| Emotional support: substantial help provided, if asked | 179 | 0.804 | 0.398 | 221 | 0.792 | 0.407 | 0.013 | 0.755 |
| Financial support: substantial help provided, if asked | 122 | 0.770 | 0.422 | 183 | 0.770 | 0.422 | 0.000 | 1.000 |

*Notes:* The table reports the extensive and intensive margins of help exchanged between roommates, for the same sample as Table 1 (same-caste rooms only), using the same roommate-report combination rule, except that in three-person rooms the never-asked indicators in Panels A-B take the minimum over the two roommates' reports, so that the pair is coded as having asked for help if either roommate reports asking; in two-person rooms the single roommate report is used. Panels A and B report the extensive margin: whether help was ever asked for, equal to one if the respondent reports never having asked a roommate for help (Panel A, received) or never having been asked for help by a roommate (Panel B, provided), across exam preparation, internships, emotional support, and financial support. Panels C and D report the intensive margin – substantial help, conditional on having asked – restricting to the subsample for whom some help was asked for or given (Panels A-B equal to zero), and reporting Table 1's substantial-help indicator ('Sometimes' or 'Mostly' helpful/supportive) within that subsample. Mean, standard deviation, and sample size are reported separately for upper-caste and lower-caste students; the p-value is from an unequal-variance t-test of equal means.

*Cited on page 13.*

Table A3: Time Use, Active Membership, and Positions in Clubs and Activities, Same-Caste Rooms

| | Upper Caste | | | Lower Caste | | | Upper Caste - Lower Caste | |
|---|---|---|---|---|---|---|---|---|
| | N | Mean | Sd | N | Mean | Sd | Difference | P-Val |
| Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| *A. Time use* | | | | | | | | |
| Study hours : normal week | 334 | 10.987 | 12.079 | 344 | 13.907 | 15.307 | -2.920 | 0.006 |
| Study hours: exam week | 334 | 32.710 | 22.183 | 344 | 29.846 | 22.796 | 2.864 | 0.098 |
| Hours in student clubs | 334 | 9.970 | 13.626 | 343 | 8.714 | 12.733 | 1.256 | 0.216 |
| Hours in internships/jobs | 333 | 5.111 | 9.940 | 343 | 6.216 | 11.704 | -1.105 | 0.186 |
| Hours in part-time jobs | 333 | 1.988 | 7.963 | 342 | 3.085 | 10.155 | -1.097 | 0.118 |
| Hours in other tasks | 332 | 9.816 | 15.028 | 342 | 9.557 | 14.329 | 0.259 | 0.819 |
| *B. Indicator for active membership* | | | | | | | | |
| Participation in cultural clubs | 304 | 0.401 | 0.491 | 300 | 0.277 | 0.448 | 0.125 | 0.001 |
| Participation in hostel clubs | 305 | 0.410 | 0.493 | 300 | 0.327 | 0.470 | 0.083 | 0.034 |
| Participation in co-curricular clubs | 305 | 0.295 | 0.457 | 299 | 0.184 | 0.388 | 0.111 | 0.001 |
| Participation in volunteering clubs | 305 | 0.239 | 0.427 | 301 | 0.292 | 0.456 | -0.053 | 0.140 |
| Participation in sports | 303 | 0.370 | 0.484 | 300 | 0.427 | 0.495 | -0.057 | 0.153 |
| *C. Positions held in clubs and activities* | | | | | | | | |
| Cultural clubs | 336 | 0.497 | 0.501 | 332 | 0.383 | 0.487 | 0.114 | 0.003 |
| Technical clubs | 336 | 0.286 | 0.452 | 332 | 0.157 | 0.364 | 0.129 | 0.000 |
| Institute board | 336 | 0.274 | 0.447 | 332 | 0.166 | 0.372 | 0.108 | 0.001 |
| Hostel positions | 336 | 0.304 | 0.460 | 332 | 0.217 | 0.413 | 0.087 | 0.011 |
| Volunteering clubs | 336 | 0.077 | 0.268 | 332 | 0.123 | 0.329 | -0.046 | 0.048 |
| Cultural fest | 336 | 0.304 | 0.460 | 332 | 0.407 | 0.492 | -0.103 | 0.005 |

*Notes:* The table reports time use and club/activity involvement, for the same sample as Table 1 (same-caste rooms only). Panel A reports the respondent's own weekly time use (not a roommate report), in hours, across studying in a normal week, studying during exam week, student clubs, internships/job search, part-time jobs, and other activities, as recorded in the survey; no roommate-report combination rule is applied since these are individual self-reports. Panel B reports indicators for active membership in sports, cultural clubs, hostel activities, co-curricular activities, and volunteering, equal to one if the respondent reports being an active member of that club or activity type. Panel C reports indicators for holding a position in cultural clubs, technical clubs, the institute board, hostel activities, volunteering clubs, or the cultural fest, equal to one if the respondent reports holding such a position. Mean, standard deviation, and sample size are reported separately for upper-caste and lower-caste students; the p-value is from an unequal-variance t-test of equal means.

*Cited on page 13.*

Table A4: Balance table on Attrition, Socio Economic Indicators and College Preparation

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | N | Non-mixed mean | Diff | P-Val | N | Non-mixed mean | Diff | P-Val |
| Dependent Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| *A. Survey attrition indicators* | | | | | | | | |
| Response | 1145 | 0.838 | -0.005 | 0.848 | 1121 | 0.891 | -0.015 | 0.527 |
| Survey completed | 1145 | 0.800 | -0.006 | 0.828 | 1121 | 0.872 | 0.005 | 0.859 |
| *B. Socio Economic Indicators* | | | | | | | | |
| Mother's education (bachelors or higher) | 902 | 0.876 | -0.043 | 0.148 | 881 | 0.566 | -0.008 | 0.834 |
| Father's education (bachelors or higher) | 896 | 0.786 | -0.023 | 0.447 | 876 | 0.641 | -0.039 | 0.302 |
| Assets Index | 824 | 0.166 | -0.016 | 0.728 | 809 | -0.171 | -0.009 | 0.856 |
| Taken a loan | 885 | 0.148 | 0.006 | 0.829 | 890 | 0.194 | 0.034 | 0.241 |
| Family income (9L or above) | 859 | 0.699 | -0.079 | 0.047 | 895 | 0.425 | -0.039 | 0.287 |
| Speaks English with family | 917 | 0.494 | -0.027 | 0.462 | 938 | 0.246 | 0.048 | 0.133 |
| Speaks English with friends | 917 | 0.705 | -0.003 | 0.934 | 938 | 0.558 | 0.027 | 0.452 |
| Knows someone who did engineering | 912 | 0.682 | -0.060 | 0.088 | 907 | 0.490 | -0.005 | 0.888 |
| Knows someone studied in IITs | 912 | 0.259 | -0.005 | 0.885 | 907 | 0.168 | 0.013 | 0.642 |
| *C. JEE Preparation and Academic Background* | | | | | | | | |
| Score in Class XII | 942 | 93.089 | 0.985 | 0.135 | 934 | 90.175 | 0.271 | 0.576 |
| Score in Class X | 939 | 94.995 | 0.424 | 0.540 | 935 | 92.942 | -0.374 | 0.569 |
| JEE Advanced score | 1112 | 204.125 | -1.279 | 0.354 | 1091 | 139.368 | 1.354 | 0.527 |
| Years: JEE preparation | 964 | 2.520 | -0.130 | 0.216 | 964 | 2.251 | -0.020 | 0.842 |
| Average daily study hours JEE | 963 | 8.225 | 0.167 | 0.582 | 962 | 8.588 | 0.467 | 0.080 |
| JEE Prep Cost (in lakhs INR) | 875 | 1.384 | -0.022 | 0.812 | 884 | 1.394 | -0.088 | 0.320 |
| Took more than 1 attempt | 945 | 0.147 | -0.004 | 0.862 | 934 | 0.317 | -0.063 | 0.066 |
| Doesn't Know programming | 912 | 0.455 | 0.041 | 0.291 | 907 | 0.671 | -0.028 | 0.427 |
| Joint Test p-value | | | | 0.181 | | | | 0.296 |

*Notes:* The table presents balance on socioeconomic indicators, JEE preparation, and pre-college academic outcomes. Panel A reports balance on attrition indicators, including whether students responded to the survey and whether they completed the survey. Panels B and C report balance on socioeconomic characteristics and pre-college academic outcomes, respectively. The sample includes students from entry years 2023 and 2024 who had one or two roommates. Columns 2 and 6 report means for same-caste rooms for upper-caste and lower-caste students, respectively. Columns 3–4 and 7–8 report differences in means and corresponding p-values for upper-caste and lower-caste students. All regressions include hostel-by-cohort and specialization fixed effects and control for the number of roommates. Standard errors are clustered at the room level. The last row reports the p-value from the joint F-test of orthogonality.

*Cited on page 15.*

Table A5: Balance table on Pre-college Networks

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | N | Non-mixed mean | Diff | P-Val | N | Non-mixed mean | Diff | P-Val |
| Dependent Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| *A. Pre-college Networks* | | | | | | | | |
| Close friends count | 488 | 10.929 | -0.057 | 0.957 | 484 | 9.173 | 0.595 | 0.568 |
| Close friends wrote jee | 488 | 10.489 | -0.550 | 0.604 | 484 | 9.624 | 0.103 | 0.929 |
| Close friends in college | 488 | 2.979 | -0.104 | 0.865 | 484 | 2.549 | 0.407 | 0.455 |
| Close friends in NITs | 488 | 1.851 | 0.819 | 0.188 | 484 | 2.692 | 0.784 | 0.189 |
| Friends who did not clear entrance exam | 488 | 4.574 | 0.911 | 0.290 | 484 | 5.684 | 1.080 | 0.237 |
| Prog: Learned from friends | 477 | 0.036 | 0.018 | 0.419 | 464 | 0.031 | -0.012 | 0.451 |
| Share of friends from different caste | 425 | -0.475 | 0.208 | 0.080 | 418 | 0.467 | 0.039 | 0.668 |
| *B. Consumption Expenditure at Baseline* | | | | | | | | |
| Food expenses | 510 | 1763.514 | -34.175 | 0.856 | 503 | 1500.000 | -63.167 | 0.676 |
| Movies and partying expenses | 510 | 1283.784 | -36.779 | 0.837 | 503 | 1021.429 | -82.599 | 0.461 |
| Education expenses | 510 | 2354.730 | -262.736 | 0.311 | 503 | 2567.857 | -436.217 | 0.137 |
| Other miscellaneous expenses | 510 | 2111.486 | -321.836 | 0.191 | 503 | 2128.571 | -353.494 | 0.203 |
| Joint Test p-value | | | | 0.268 | | | | 0.899 |

*Notes:* The table presents balance on pre-college networks and self-reported skills at baseline. Panel A reports balance on friendship networks pre college and panel B represents balance on consumption expenditure at baseline. The sample includes students only from entry year 2024 who had one or two roommates. Columns 2 and 6 report means for same-caste rooms for upper-caste and lower-caste students, respectively. Columns 3–4 and 7–8 report differences in means and corresponding p-values for upper-caste and lower-caste students. All regressions include hostel-by-cohort and specialization fixed effects and control for the number of roommates. Standard errors are clustered at the room level. The last row of each panel reports the p-value from the joint F-test of orthogonality.

*Cited on page 15.*

Table A6: Early exposure results on Mental Health, Attitudes towards Affirmative Action and Skills

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | N | Non-mixed mean | Diff | P-Val | N | Non-mixed mean | Diff | P-Val |
| Dependent Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| *Mental Health, AA support & Skill indices at Baseline* | | | | | | | | |
| PHQ4: anxiety and depression | 455 | 0.013 | 0.044 | 0.639 | 438 | -0.006 | 0.009 | 0.916 |
| Relative wellbeing index | 450 | 0.037 | 0.073 | 0.167 | 426 | -0.037 | 0.030 | 0.605 |
| Worry index | 502 | 0.006 | 0.054 | 0.408 | 490 | -0.015 | -0.106 | 0.147 |
| AA support: reserved group | 455 | -0.287 | -0.089 | 0.306 | 440 | 0.314 | 0.053 | 0.416 |
| AA support: non-reserved group | 453 | -0.369 | 0.021 | 0.807 | 442 | 0.408 | 0.020 | 0.780 |
| Meritocratic beliefs about JEE | 452 | 1.922 | 0.089 | 0.530 | 429 | 1.817 | -0.069 | 0.609 |
| Self rating of skills | 490 | 0.251 | -0.110 | 0.086 | 484 | -0.303 | 0.112 | 0.151 |
| Joint Test p-value | | | | 0.092 | | | | 0.400 |

*Notes:* The table presents balance on mental health, attitudes towards Affirmative Action and self-reported skills at baseline. It reports early exposure effects on PHQ4 index, relative happiness index, worry index, support for AA on benefits and costs of AA to reserved-group students and non-reserved-group students, belief on whether success in the entrance exam reflects merit or circumstance, and skills index. The sample includes students only from entry year 2024 who had one or two roommates. Columns 2 and 6 report means for same-caste rooms for upper-caste and lower-caste students, respectively. Columns 3–4 and 7–8 report differences in means and corresponding p-values for upper-caste and lower-caste students. All regressions include hostel-by-cohort and specialization fixed effects and control for the number of roommates. Standard errors are clustered at the room level. The last row of each panel reports the p-value from the joint F-test of orthogonality.

*Cited on page 15, 34.*

Table A7: Attrition on Socio Economic Indicators and College Preparation

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | N | Non-mixed mean | Diff | P-Val | N | Non-mixed mean | Diff | P-Val |
| Dependent Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| *A. Socio Economic Indicators* | | | | | | | | |
| Mother's education (bachelors or higher) Missing | 1059 | 0.169 | -0.031 | 0.206 | 1055 | 0.146 | 0.034 | 0.148 |
| Father's education (bachelors or higher) Missing | 1059 | 0.169 | -0.025 | 0.344 | 1055 | 0.173 | -0.000 | 0.998 |
| Assets Index Missing | 1059 | 0.203 | 0.059 | 0.038 | 1055 | 0.253 | -0.009 | 0.761 |
| Taken a loan Missing | 1059 | 0.194 | -0.026 | 0.310 | 1055 | 0.192 | -0.028 | 0.283 |
| Family income (9L or above) Missing | 1059 | 0.217 | -0.013 | 0.636 | 1055 | 0.159 | 0.003 | 0.897 |
| Speaks English with family Missing | 1059 | 0.144 | -0.017 | 0.447 | 1055 | 0.118 | -0.006 | 0.785 |
| Speaks English with friends Missing | 1059 | 0.144 | -0.015 | 0.507 | 1055 | 0.118 | -0.007 | 0.764 |
| Knows someone in engg Missing | 1059 | 0.153 | -0.010 | 0.661 | 1055 | 0.165 | -0.021 | 0.402 |
| Knows someone with IIT degree Missing | 1059 | 0.153 | -0.010 | 0.661 | 1055 | 0.165 | -0.021 | 0.402 |
| *B. JEE Preparation and Academic Background* | | | | | | | | |
| Score in Class XII Missing | 1059 | 0.122 | -0.015 | 0.482 | 1055 | 0.102 | 0.014 | 0.519 |
| Score in Class X Missing | 1059 | 0.125 | -0.014 | 0.525 | 1055 | 0.096 | 0.020 | 0.345 |
| JEE Advanced score Missing | 1059 | 0.028 | 0.007 | 0.576 | 1055 | 0.027 | -0.005 | 0.678 |
| Years: JEE preparation Missing | 1059 | 0.092 | -0.010 | 0.623 | 1055 | 0.069 | 0.018 | 0.308 |
| Average daily study hours JEE Missing | 1059 | 0.097 | -0.016 | 0.431 | 1055 | 0.074 | 0.014 | 0.432 |
| JEE Prep Cost (in lakhs INR) Missing | 1059 | 0.181 | 0.003 | 0.895 | 1055 | 0.151 | 0.021 | 0.404 |
| Took more than 1 attempt Missing | 1059 | 0.114 | -0.015 | 0.498 | 1055 | 0.099 | 0.020 | 0.361 |
| Doesn't Know programming Missing | 1059 | 0.144 | -0.016 | 0.519 | 1055 | 0.124 | 0.024 | 0.290 |

*Notes:* The table presents attrition on socioeconomic indicators, JEE preparation, and pre-college academic outcomes. Panels A and B report attrition on socioeconomic characteristics and pre-college academic outcomes, respectively. The sample includes students from entry years 2023 and 2024 who had one or two roommates. Columns 2 and 6 report means for same-caste rooms for upper-caste and lower-caste students, respectively. Columns 3–4 and 7–8 report differences in means and corresponding p-values for upper-caste and lower-caste students. All regressions include hostel-by-cohort and specialization fixed effects and control for the number of roommates. Standard errors are clustered at the room level.

*Cited on page 15.*

Table A8: Attrition on Mental Health and Academic Outcomes

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | N | Non-mixed mean | Diff | P-Val | N | Non-mixed mean | Diff | P-Val |
| Dependent Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| *A. Refused to Answer* | | | | | | | | |
| Nervous or anxious - Refused | 953 | 0.086 | 0.006 | 0.756 | 969 | 0.096 | 0.024 | 0.303 |
| Can't stop worrying - Refused | 953 | 0.086 | 0.005 | 0.807 | 969 | 0.099 | 0.021 | 0.385 |
| Feeling down - Refused | 953 | 0.086 | 0.006 | 0.785 | 969 | 0.104 | 0.007 | 0.750 |
| Little interest in activities - Refused | 953 | 0.086 | 0.005 | 0.823 | 969 | 0.107 | 0.009 | 0.695 |
| CGPA : First Year - Refused | 982 | 0.021 | 0.023 | 0.066 | 987 | 0.073 | -0.002 | 0.885 |
| CGPA : Second Year - Refused | 422 | 0.031 | -0.015 | 0.370 | 461 | 0.015 | 0.013 | 0.400 |
| CGPA : Third Year - Refused | 422 | 0.031 | -0.015 | 0.370 | 461 | 0.015 | 0.013 | 0.400 |
| *B. Did Not Respond to Survey* | | | | | | | | |
| Nervous or anxious - Not responded | 977 | 0.108 | 0.004 | 0.876 | 949 | 0.087 | -0.002 | 0.931 |
| Can't stop worrying - Not responded | 977 | 0.108 | 0.003 | 0.885 | 944 | 0.088 | -0.004 | 0.866 |
| Feeling down - Not responded | 976 | 0.108 | 0.004 | 0.854 | 948 | 0.088 | -0.006 | 0.777 |
| Little interest in activities - Not responded | 977 | 0.108 | 0.004 | 0.874 | 941 | 0.088 | -0.004 | 0.855 |
| CGPA : First Year - Not responded | 1024 | 0.071 | 0.011 | 0.543 | 964 | 0.059 | 0.012 | 0.518 |
| CGPA : Second Year - Not responded | 470 | 0.148 | -0.040 | 0.225 | 478 | 0.034 | 0.031 | 0.181 |
| CGPA : Third Year - Not responded | 470 | 0.148 | -0.040 | 0.225 | 478 | 0.034 | 0.031 | 0.181 |

*Notes:* The table presents attrition on the mental health (PHQ-4) and academic (CGPA) variables. Panel A reports the share who were asked but explicitly refused to answer; Panel B reports the share who did not respond to the survey at all and so never reached the item. Students from the 2023 cohort who haven't been sampled in intensive tracking i.e., those who didn't responsd in the first phase but also not sampled in tracking) were left out of the analysis, since their non-response reflects sampling, not refusal or survey attrition. The sample includes students from entry years 2023 and 2024 who had one or two roommates. Columns 2 and 6 report means for same-caste rooms for upper-caste and lower-caste students, respectively. Columns 3–4 and 7–8 report differences in means and corresponding p-values for upper-caste and lower-caste students. All regressions include hostel-by-cohort and specialization fixed effects and control for the number of roommates.Standard errors are clustered at the room level.

*Cited on page 15.*

Table A9: Attrition on Affirmative Action Attitudes

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | N | Non-mixed mean | Diff | P-Val | N | Non-mixed mean | Diff | P-Val |
| Dependent Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| *A. Refused to Answer* | | | | | | | | |
| Promote social justice - Refused | 942 | 0.146 | 0.014 | 0.577 | 967 | 0.167 | 0.007 | 0.816 |
| Foster diversity - Refused | 942 | 0.146 | 0.017 | 0.511 | 967 | 0.176 | 0.016 | 0.590 |
| Hurt reserved groups - Refused | 942 | 0.156 | 0.005 | 0.845 | 967 | 0.170 | -0.017 | 0.536 |
| Reduce incentive to work (rev) - Refused | 942 | 0.150 | 0.007 | 0.795 | 967 | 0.170 | -0.008 | 0.776 |
| Unfair to merit - Refused | 906 | 0.156 | 0.008 | 0.778 | 941 | 0.175 | 0.004 | 0.881 |
| Compromise academic quality (rev) - Refused | 942 | 0.146 | 0.012 | 0.631 | 967 | 0.182 | -0.017 | 0.549 |
| Benefit to non-reserved groups - Refused | 906 | 0.160 | 0.027 | 0.310 | 941 | 0.200 | -0.004 | 0.895 |
| *B. Did Not Respond to Survey* | | | | | | | | |
| Promote social justice - Not responded | 921 | 0.125 | 0.009 | 0.715 | 889 | 0.094 | -0.008 | 0.744 |
| Foster diversity - Not responded | 918 | 0.125 | 0.008 | 0.751 | 875 | 0.095 | -0.004 | 0.850 |
| Hurt reserved groups - Not responded | 919 | 0.126 | 0.007 | 0.791 | 899 | 0.094 | -0.009 | 0.712 |
| Reduce incentive to work (rev) - Not responded | 923 | 0.125 | 0.007 | 0.772 | 892 | 0.094 | -0.006 | 0.790 |
| Unfair to merit - Not responded | 921 | 0.170 | 0.001 | 0.981 | 885 | 0.143 | -0.024 | 0.392 |
| Compromise academic quality (rev) - Not responded | 923 | 0.125 | 0.009 | 0.720 | 887 | 0.096 | -0.008 | 0.723 |
| Benefit to non-reserved groups - Not responded | 907 | 0.170 | 0.005 | 0.860 | 867 | 0.147 | -0.023 | 0.423 |

*Notes:* The table presents attrition on the affirmative-action attitude variables. Panel A reports the share who were asked but explicitly refused to answer; Panel B reports the share who did not respond to the survey at all and so never reached the item. Students from the 2023 cohort who haven't been sampled in intensive tracking i.e., those who didn't responsd in the first phase but also not sampled in tracking) were left out of the analysis, since their non-response reflects sampling, not refusal or survey attrition. The sample includes students from entry years 2023 and 2024 who had one or two roommates. Columns 2 and 6 report means for same-caste rooms for upper-caste and lower-caste students, respectively. Columns 3–4 and 7–8 report differences in means and corresponding p-values for upper-caste and lower-caste students. All regressions include hostel-by-cohort and specialization fixed effects and control for the number of roommates.Standard errors are clustered at the room level

*Cited on page 15.*

Table A10: Heterogeneous Effects on Main Outcomes by Gender

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | CGPA : First Year | Mental health index | AA support: reserved group | AA support: non-reserved group | CGPA : First Year | Mental health index | AA support: reserved group | AA support: non-reserved group |
| Mixed Room | -0.108* | -0.051 | 0.168*** | 0.109 | 0.102* | -0.052 | -0.037 | 0.084 |
| | (0.056) | (0.053) | (0.060) | (0.070) | (0.061) | (0.047) | (0.051) | (0.064) |
| Female | -0.056 | -0.215*** | 0.279*** | 0.276*** | -0.103 | -0.137 | 0.053 | -0.016 |
| | (0.103) | (0.071) | (0.080) | (0.089) | (0.110) | (0.112) | (0.085) | (0.109) |
| Mixed Room × Female | 0.079 | -0.026 | -0.416*** | -0.386*** | 0.028 | -0.107 | -0.041 | 0.053 |
| | (0.120) | (0.096) | (0.114) | (0.132) | (0.133) | (0.129) | (0.108) | (0.132) |
| DV Mean, Non-mixed | 0.474 | 0.027 | -0.251 | -0.265 | -0.445 | 0.001 | 0.239 | 0.237 |
| R-squared | 0.459 | 0.112 | 0.134 | 0.150 | 0.409 | 0.107 | 0.081 | 0.090 |
| N | 947 | 935 | 820 | 817 | 896 | 928 | 829 | 820 |

Columns 1-4 restrict to upper-caste students, columns 5-8 to lower-caste students. Within each caste block, Column 1 reports cumulative GPA at the end of the first year; Column 2 the composite Mental Health Index; Column 3 the reserved-group Support for Affirmative Action sub-index; Column 4 the non-reserved-group sub-index – the same four outcomes as the main results table. Each regression interacts mixed-room assignment with a Female indicator to test whether the treatment effect varies by gender within each caste group. Regressions include specialization-by- cohort fixed effects and control for the number of roommates, but exclude hostel-by-cohort fixed effects, since hostel assignment is itself gendered and would absorb the Female main effect. Regressions are. Baseline controls for the respective outcome are included, with a missingness dummy where the baseline measure is missing. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 16, 35.*

Table A11: Effect on PHQ4 index and its components

| | PHQ4 index (1) | Nervous or anxious (rev) (2) | Can't stop worrying (rev) (3) | Feeling down (rev) (4) | Little interest in activities (rev) (5) |
|---|---|---|---|---|---|
| *Panel A: Upper Caste Sample* | | | | | |
| Mixed Room | -0.093 | -0.110 | -0.036 | -0.099 | -0.143* |
| | (0.068) | (0.079) | (0.082) | (0.078) | (0.083) |
| DV Mean in same caste rm | 0.016 | -0.037 | -0.009 | 0.065 | 0.061 |
| R-squared | 0.153 | 0.150 | 0.139 | 0.152 | 0.113 |
| N | 875 | 871 | 871 | 870 | 871 |
| Sharpened q-value | 0.255 | 0.255 | 0.662 | 0.255 | 0.255 |
| *Panel B: Lower Caste Sample* | | | | | |
| Mixed Room | -0.084 | -0.160** | -0.083 | -0.095 | -0.031 |
| | (0.064) | (0.075) | (0.079) | (0.079) | (0.080) |
| DV Mean in same caste rm | -0.010 | 0.048 | 0.025 | -0.054 | -0.054 |
| R-squared | 0.125 | 0.126 | 0.140 | 0.113 | 0.113 |
| N | 877 | 863 | 858 | 862 | 855 |
| Sharpened q-value | 0.364 | 0.167 | 0.364 | 0.364 | 0.695 |
| *Panel C: Full Sample* | | | | | |
| Mixed Room | -0.099** | -0.139** | -0.058 | -0.108* | -0.111* |
| | (0.047) | (0.057) | (0.059) | (0.056) | (0.057) |
| DV Mean in same caste rm | 0.003 | 0.006 | 0.008 | 0.005 | 0.003 |
| R-squared | 0.103 | 0.095 | 0.102 | 0.096 | 0.076 |
| N | 1752 | 1734 | 1729 | 1732 | 1726 |
| Sharpened q-value | 0.013 | 0.013 | 0.059 | 0.013 | 0.013 |
| P val ($\beta_LC == \beta_UC$) | 0.911 | 0.443 | 0.677 | 0.784 | 0.560 |

*Notes:* The table presents results for PHQ-4 index and its components, including anxiety and depression symptoms. Column 1 reports estimates for a composite PHQ-4 Index constructed using standardized scores of the individual PHQ-4 components. Column 2 reports results for feeling nervous, anxious, or on edge. Column 3 reports results for being unable to stop or control worrying. Column 4 reports results for feeling down, depressed, or hopeless. Column 5 reports results for little interest or pleasure in doing things. In all the columns symptoms are reverse coded so that higher values indicate better mental health outcomes. The final row of the full-sample panel (Panel C) reports the p-value from a pooled specification interacting mixed-room assignment with lower-caste testing whether the lower- and upper-caste treatment effects differ. I use ANCOVA specification along with hostel-by-cohort and specialization-year fixed effects and a control for the number of roommates. Standard errors are clustered at the room level. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

*Cited on page 16.*

Table A12: Effect on Worry Index and its components

| | Worry index (1) | Academics (rev) (2) | Getting an Internship (rev) (3) | Time Management (rev) (4) | Cultural Adaptation (rev) (5) | Staying Away from Home (rev) (6) | Discrimination (rev) (7) |
|---|---|---|---|---|---|---|---|
| *Panel A: Upper Caste Sample* | | | | | | | |
| Mixed Room | -0.024 | -0.022 | 0.017 | -0.122 | 0.021 | -0.118 | 0.050 |
| | (0.045) | (0.080) | (0.070) | (0.076) | (0.071) | (0.074) | (0.072) |
| DV Mean in same caste rm | 0.052 | 0.043 | 0.014 | 0.023 | 0.142 | 0.079 | 0.026 |
| R-squared | 0.135 | 0.110 | 0.133 | 0.095 | 0.101 | 0.071 | 0.097 |
| N | 890 | 881 | 877 | 883 | 884 | 879 | 878 |
| Sharpened q-value | 0.804 | 0.804 | 0.804 | 0.392 | 0.804 | 0.392 | 0.804 |
| *Panel B: Lower Caste Sample* | | | | | | | |
| Mixed Room | -0.048 | -0.073 | -0.034 | -0.014 | -0.085 | 0.025 | -0.116 |
| | (0.045) | (0.072) | (0.072) | (0.072) | (0.075) | (0.076) | (0.073) |
| DV Mean in same caste rm | -0.046 | -0.038 | -0.003 | -0.011 | -0.130 | -0.077 | -0.016 |
| R-squared | 0.124 | 0.129 | 0.102 | 0.102 | 0.080 | 0.101 | 0.071 |
| N | 892 | 882 | 873 | 884 | 881 | 880 | 871 |
| Sharpened q-value | 0.541 | 0.541 | 0.850 | 0.850 | 0.541 | 0.850 | 0.541 |
| *Panel C: Full Sample* | | | | | | | |
| Mixed Room | -0.038 | -0.035 | -0.004 | -0.057 | -0.045 | -0.059 | -0.033 |
| | (0.033) | (0.054) | (0.050) | (0.053) | (0.052) | (0.054) | (0.051) |
| DV Mean in same caste rm | 0.003 | 0.003 | 0.005 | 0.006 | 0.005 | 0.001 | 0.005 |
| R-squared | 0.091 | 0.086 | 0.085 | 0.053 | 0.041 | 0.058 | 0.049 |
| N | 1782 | 1763 | 1750 | 1767 | 1765 | 1759 | 1749 |
| Sharpened q-value | 0.615 | 0.627 | 0.938 | 0.615 | 0.615 | 0.615 | 0.627 |
| P val ($\beta_LC == \beta_UC$) | 0.693 | 0.970 | 0.912 | 0.294 | 0.098 | 0.176 | 0.041 |

*Notes:* The table presents results for worry index and its components, capturing worries about various aspects of college life. Column 1 reports estimates for a composite of worry index about college aspects. Column 2 reports results for how worried about academic performance. Column 3 reports results for how worried about internship opportunities. Column 4 reports results for how worried about time management. Column 5 reports results for how worried about language and cultural adjustment. Column 6 reports results for how worried about being far away from home. Column 7 reports results for how worried about discrimination. I reverse code all the columns so that higher values of these indices indicate better mental health outcomes. All the components are measured on a scale of 1-5 and standardized with respect to same caste group sample. The final row of the full-sample panel (Panel C) reports the p-value on the interaction between mixed-room assignment and a lower-caste indicator from a pooled specification, testing whether the lower- and upper-caste treatment effects differ. All regressions control for the baseline PHQ-4 index and relative wellbeing index (missing values imputed as zero, with an indicator for missingness included) and for the number of roommates. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

*Cited on page 17.*

Table A13: Effect on Relative well-being index and its components

| | Relative well being index (1) | More happy now (2) | Less control in life (rev) (3) | More stressed (rev) (4) | Better support system (5) |
|---|---|---|---|---|---|
| *Panel A: Upper Caste Sample* | | | | | |
| Mixed Room | -0.007 | 0.065 | 0.018 | -0.090 | -0.023 |
| | (0.042) | (0.082) | (0.080) | (0.086) | (0.079) |
| DV Mean in same caste rm | -0.006 | -0.080 | 0.010 | 0.075 | -0.018 |
| R-squared | 0.076 | 0.093 | 0.067 | 0.112 | 0.109 |
| N | 839 | 828 | 832 | 829 | 825 |
| Sharpened q-value | 0.873 | 0.873 | 0.873 | 0.873 | 0.873 |
| *Panel B: Lower Caste Sample* | | | | | |
| Mixed Room | 0.005 | -0.001 | -0.027 | 0.015 | 0.072 |
| | (0.042) | (0.073) | (0.078) | (0.074) | (0.074) |
| DV Mean in same caste rm | 0.012 | 0.061 | 0.003 | -0.050 | 0.005 |
| R-squared | 0.082 | 0.111 | 0.084 | 0.109 | 0.111 |
| N | 850 | 838 | 830 | 841 | 832 |
| Sharpened q-value | 0.994 | 0.994 | 0.994 | 0.994 | 0.994 |
| *Panel C: Full Sample* | | | | | |
| Mixed Room | 0.006 | 0.051 | -0.017 | -0.029 | 0.034 |
| | (0.030) | (0.054) | (0.054) | (0.057) | (0.054) |
| DV Mean in same caste rm | 0.003 | -0.008 | 0.006 | 0.011 | -0.006 |
| R-squared | 0.042 | 0.062 | 0.042 | 0.071 | 0.057 |
| N | 1689 | 1666 | 1662 | 1670 | 1657 |
| Sharpened q-value | 0.840 | 0.840 | 0.840 | 0.840 | 0.840 |
| P val ($\beta_LC == \beta_UC$) | 0.877 | 0.435 | 0.918 | 0.776 | 0.524 |

*Notes:* The table presents results for relative happiness and its components, capturing subjective well-being relative to the pre-college period. Column 1 reports estimates for a composite of relative happiness compared to pre-college period. Column 2 reports results for feeling more happy now. Column 3 reports results for feeling less in control. Column 4 reports results for feeling more stressed. Column 5 reports results for feeling better about social support. I reverse code columns 3 and 4 so that higher values of these indices indicate better mental health outcomes. The final row of the full-sample panel (Panel C) reports the p-value from a pooled specification interacting mixed-room assignment with lower-caste testing whether the lower- and upper-caste treatment effects differ. I use ANCOVA specification along with hostel-by-cohort and specialization-year fixed effects and a control for the number of roommates. Standard errors are clustered at the room level. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

*Cited on page 17.*

Table A14: Effect on Support for Affirmative Action: Benefits of AA Policies to Reserved Groups

| | AA support: reserved group (1) | Promote social justice (2) | Foster diversity (3) | Hurt reserved groups (rev) (4) | Reduce incentive to work (rev) (5) |
|---|---|---|---|---|---|
| *Panel A: Upper Caste Sample* | | | | | |
| Mixed Room | 0.115** | 0.130 | 0.110 | 0.109 | 0.045 |
| | (0.057) | (0.085) | (0.092) | (0.085) | (0.082) |
| DV Mean in same caste rm | -0.251 | -0.294 | -0.148 | -0.251 | -0.303 |
| R-squared | 0.172 | 0.126 | 0.120 | 0.122 | 0.125 |
| N | 820 | 804 | 801 | 802 | 806 |
| Sharpened q-value | 0.218 | 0.291 | 0.291 | 0.291 | 0.587 |
| *Panel B: Lower Caste Sample* | | | | | |
| Mixed Room | -0.022 | -0.057 | -0.064 | -0.080 | 0.084 |
| | (0.045) | (0.070) | (0.076) | (0.083) | (0.079) |
| DV Mean in same caste rm | 0.239 | 0.283 | 0.149 | 0.251 | 0.275 |
| R-squared | 0.110 | 0.093 | 0.071 | 0.078 | 0.115 |
| N | 829 | 801 | 787 | 811 | 804 |
| Sharpened q-value | 0.618 | 0.528 | 0.528 | 0.528 | 0.528 |
| *Panel C: Full Sample* | | | | | |
| Mixed Room | 0.049 | 0.035 | 0.023 | 0.032 | 0.056 |
| | (0.040) | (0.061) | (0.063) | (0.062) | (0.059) |
| DV Mean in same caste rm | -0.002 | -0.003 | 0.001 | 0.003 | -0.011 |
| R-squared | 0.138 | 0.088 | 0.065 | 0.063 | 0.090 |
| N | 1649 | 1605 | 1588 | 1613 | 1610 |
| Sharpened q-value | 0.749 | 0.749 | 0.749 | 0.749 | 0.749 |
| P val ($\beta_LC == \beta_UC$) | 0.086 | 0.249 | 0.257 | 0.078 | 0.929 |

*Notes:* The table presents results for attitudes towards Affirmative Action specific to the reserved groups. Column 1 reports estimates for an index of attitudes that are related to benefits and costs (reverse coded) of AA policies for groups that receive reservation. It is composed of components in columns 2-5. Column 2 reports results for attitudes on if AA is justified to balance historical disadvantage. Column 3 reports results for attitudes on if AA is justified to foster diversity. Column 4 reports results for attitudes on if AA hurts reserved students by placing them in challenging academic environments. Column 5 reports results for if AA policies reduce incentives for reserved students to work hard. Columns 4 and 5 are reverse coded, and higher estimated values indicate more support for the benefits to the reserved groups. All regressions include hostel-by-cohort and specialization fixed effects and control for the number of roommates. Standard errors are clustered at the room level. All the regressions include baseline controls for the respective dependent variables and a missing indicator for the baseline controls and number of roommates.

*Cited on page 17, 18.*

Table A15: Effect on Support for Affirmative Action: Costs of AA Policies to Non-Reserved Groups

| | AA support: non-reserved group (1) | Unfair to merit (rev) (2) | Compromise academic quality (rev) (3) | Benefit to non-reserved groups (4) |
|---|---|---|---|---|
| *Panel A: Upper Caste Sample* | | | | |
| Mixed Room | 0.048 | -0.016 | 0.142* | -0.019 |
| | (0.058) | (0.078) | (0.077) | (0.083) |
| DV Mean in same caste rm | -0.265 | -0.295 | -0.311 | -0.178 |
| R-squared | 0.184 | 0.137 | 0.128 | 0.121 |
| N | 817 | 768 | 806 | 754 |
| Sharpened q-value | 0.822 | 0.838 | 0.262 | 0.838 |
| *Panel B: Lower Caste Sample* | | | | |
| Mixed Room | 0.110** | 0.114 | 0.047 | 0.008 |
| | (0.056) | (0.072) | (0.076) | (0.072) |
| DV Mean in same caste rm | 0.237 | 0.280 | 0.304 | 0.178 |
| R-squared | 0.131 | 0.146 | 0.108 | 0.084 |
| N | 820 | 771 | 799 | 753 |
| Sharpened q-value | 0.192 | 0.227 | 0.709 | 0.910 |
| *Panel C: Full Sample* | | | | |
| Mixed Room | 0.100** | 0.051 | 0.124** | 0.010 |
| | (0.047) | (0.055) | (0.060) | (0.056) |
| DV Mean in same caste rm | -0.012 | -0.005 | -0.003 | -0.001 |
| R-squared | 0.135 | 0.126 | 0.088 | 0.072 |
| N | 1637 | 1539 | 1605 | 1507 |
| Sharpened q-value | 0.108 | 0.534 | 0.108 | 0.868 |
| P val ($\beta_LC == \beta_UC$) | 0.648 | 0.296 | 0.319 | 0.584 |

*Notes:* The table presents results for attitudes towards Affirmative Action specific to the non reserved groups. Column 1 reports estimates for an index of attitudes that are related to benefits (reverse coded) and costs of AA policies for groups that don't benefit from AA. It is composed of components in columns 2-4. Column 2 reports results for if AA policies are unfair compared to meritocratic policies. Column 3 reports results for attitudes on if AA policies compromise academic standards of the university. Column 4 reports results for whether non-reserved-group students believe they benefit from AA policies. Columns 2 and 3 are reverse coded, and higher estimated values indicate greater belief in higher costs of AA to the non-reserved groups. All regressions include hostel-by-cohort and specialization fixed effects and control for the number of roommates. Standard errors are clustered at the room level. All the regressions include baseline controls for the respective dependent variables and a missing indicator for the baseline controls and number of roommates.

*Cited on page 18.*

Table A16: Effect on GPA, Mental Health and Attitudes towards Affirmative Action: Demographic Controls

| | CGPA : First Year | Mental health index | AA support: reserved group | AA support: non-reserved group |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| *Panel A: Upper Caste Sample* | | | | |
| Mixed Room | -0.114** | -0.055 | 0.112** | 0.044 |
| | (0.049) | (0.046) | (0.056) | (0.057) |
| DV Mean in same caste rm | 0.474 | 0.027 | -0.251 | -0.265 |
| R-squared | 0.496 | 0.157 | 0.179 | 0.201 |
| N | 947 | 935 | 820 | 817 |
| Sharpened q-value | 0.041 | 0.153 | 0.047 | 0.223 |
| *Panel B: Lower Caste Sample* | | | | |
| Mixed Room | 0.091* | -0.084** | -0.006 | 0.108* |
| | (0.052) | (0.042) | (0.044) | (0.056) |
| DV Mean in same caste rm | -0.445 | 0.001 | 0.239 | 0.237 |
| R-squared | 0.466 | 0.154 | 0.126 | 0.136 |
| N | 896 | 928 | 829 | 820 |
| Sharpened q-value | 0.108 | 0.108 | 0.900 | 0.108 |
| *Panel C: Full Sample* | | | | |
| Mixed Room | -0.025 | -0.069** | 0.046 | 0.094** |
| | (0.037) | (0.032) | (0.040) | (0.046) |
| DV Mean in same caste rm | 0.021 | 0.014 | -0.002 | -0.012 |
| R-squared | 0.528 | 0.111 | 0.154 | 0.158 |
| N | 1843 | 1863 | 1649 | 1637 |
| Sharpened q-value | 0.514 | 0.125 | 0.342 | 0.125 |
| P val ($\beta_LC == \beta_UC$) | 0.012 | 0.540 | 0.107 | 0.656 |

*Notes:* Robustness check on the main results table 2: identical specification, with pre-college family background added as controls to every regression – family income, mother's and father's education, and Class XII score (all mean-centered, with missingness dummies). Column 1 reports estimates for cumulative GPA at the end of the first year. Column 2 reports estimates for a composite Mental Health Index, constructed using standardized scores of the PHQ-4 index, and the worry index capturing academic- and social-life concerns in college. Negative values of the index indicate worse mental health outcomes. Column 3 reports an index of support for AA based on its perceived costs and benefits for reserved-group students. Column 4 reports an index of support for AA based on its perceived costs and benefits for non-reserved-group students. The final row of the full-sample panel (Panel C) reports the p-value from a pooled specification interacting mixed-room assignment with lower-caste, testing whether the lower- and upper-caste treatment effects differ. All regressions include hostel-by-cohort and specialization-year fixed effects. I use ANCOVA specification along with controls for the number of roommates, family income, mother's and father's education, and Class XII score. Standard errors are clustered at the room level. Sharpened q-values (Anderson 2008) correcting for multiple hypothesis testing within each panel are reported. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

*Cited on page 18.*

Table A17: Effect on GPA, Mental Health and Attitudes towards Affirmative Action: Caste Fixed Effects

| | CGPA : First Year (1) | Mental health index (2) | AA support: reserved group (3) | AA support: non-reserved group (4) |
|---|---|---|---|---|
| *Panel A: Upper Caste Sample* | | | | |
| Mixed Room | -0.092* | -0.058 | 0.107* | 0.036 |
| | (0.050) | (0.045) | (0.057) | (0.058) |
| DV Mean in same caste rm | 0.474 | 0.027 | -0.251 | -0.265 |
| R-squared | 0.482 | 0.151 | 0.178 | 0.194 |
| N | 947 | 935 | 820 | 817 |
| Sharpened q-value | 0.132 | 0.267 | 0.132 | 0.544 |
| *Panel B: Lower Caste Sample* | | | | |
| Mixed Room | 0.083 | -0.083** | -0.019 | 0.113** |
| | (0.052) | (0.042) | (0.044) | (0.055) |
| DV Mean in same caste rm | -0.445 | 0.001 | 0.239 | 0.237 |
| R-squared | 0.436 | 0.146 | 0.137 | 0.176 |
| N | 896 | 928 | 829 | 820 |
| Sharpened q-value | 0.074 | 0.048 | 0.333 | 0.048 |
| *Panel C: Full Sample* | | | | |
| Mixed Room | -0.019 | -0.070** | 0.043 | 0.092** |
| | (0.038) | (0.032) | (0.037) | (0.045) |
| DV Mean in same caste rm | 0.021 | 0.014 | -0.002 | -0.012 |
| R-squared | 0.518 | 0.111 | 0.218 | 0.219 |
| N | 1843 | 1863 | 1649 | 1637 |
| Sharpened q-value | 0.638 | 0.139 | 0.405 | 0.158 |
| P val ($\beta_LC == \beta_UC$) | 0.097 | 0.461 | 0.114 | 0.510 |

*Notes:* Robustness check on the main results table 2: identical specification, with caste added as an additional fixed effect alongside hostel-by-cohort and specialization-by-cohort, on top of the existing lower-/upper-caste panel split. Column 1 reports estimates for cumulative GPA at the end of the first year. Column 2 reports estimates for a composite Mental Health Index, constructed using standardized scores of the PHQ-4 index, and the worry index capturing academic- and social-life concerns in college. Negative values of the index indicate worse mental health outcomes. Column 3 reports an index of support for AA based on its perceived costs and benefits for reserved-group students. Column 4 reports an index of support for AA based on its perceived costs and benefits for non-reserved-group students. The final row of the full-sample panel (Panel C) reports the p-value from a pooled specification interacting mixed-room assignment with lower-caste, testing whether the lower- and upper-caste treatment effects differ. All regressions include hostel-by-cohort, specialization-year, and caste category fixed effects. I use ANCOVA specification along with a control for the number of roommates. Standard errors are clustered at the room level. Sharpened q-values (Anderson 2008) correcting for multiple hypothesis testing within each panel are reported. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

*Cited on page 18.*

Table A18: Effect on Help Received from Roommate: Exam Preparation, Internship, and Emotional or Financial Help

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) Got Help (Composite Ind) | (2) Got exam prep | (3) Got Internship Help | (4) Got Emotional /Financial Help | (5) Got Help (Composite Ind) | (6) Got exam prep | (7) Got Internship Help | (8) Got Emotional /Financial Help |
| Mixed Room | -0.102 | -0.170* | -0.120 | -0.040 | -0.028 | 0.120 | -0.009 | -0.130* |
| | (0.068) | (0.090) | (0.079) | (0.075) | (0.063) | (0.075) | (0.078) | (0.072) |
| DV Mean, Non-mixed | -0.065 | -0.040 | -0.038 | -0.113 | 0.085 | 0.048 | 0.052 | 0.103 |
| R-squared | 0.100 | 0.097 | 0.099 | 0.092 | 0.084 | 0.081 | 0.074 | 0.089 |
| N | 886 | 880 | 875 | 878 | 895 | 887 | 864 | 882 |

*Notes:* This table reports the effects of mixed-room assignment on the types of help received from roommates. Columns 1–4 report results for upper-caste students, and Columns 5–8 report results for lower-caste students. Within each caste group, Columns 1 and 5 report effects on a composite index of all types of help received from roommates; Columns 2 and 6 report effects on academic help received; Columns 3 and 7 report effects on internship-related help received; and Columns 4 and 8 report effects on emotional and financial help received. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects and control for the number of roommates. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 25, 26, 28, 29.*

Table A19: Effect on Help Received from Other Hostel Mates: Academic, Internship, and Emotional or Financial Help

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) Got Help (Composite Index) | (2) Got Academic Help | (3) Got Internship Help | (4) Got Emotional /Financial Help | (5) Got Help (Composite Index) | (6) Got Academic Help | (7) Got Internship Help | (8) Got Emotional /Financial Help |
| Mixed Room | -0.045 | -0.076 | -0.060 | -0.003 | 0.051 | 0.072 | 0.046 | 0.052 |
| | (0.058) | (0.071) | (0.073) | (0.071) | (0.057) | (0.072) | (0.068) | (0.071) |
| DV Mean, Non-mixed | 0.047 | 0.083 | 0.047 | 0.017 | -0.054 | -0.091 | -0.043 | -0.032 |
| R-squared | 0.093 | 0.090 | 0.096 | 0.088 | 0.081 | 0.082 | 0.087 | 0.066 |
| N | 846 | 844 | 836 | 837 | 844 | 839 | 821 | 832 |

*Notes:* This table reports the effects of mixed-room assignment on the types of help received from other hostel mates (OHM). Columns 1–4 report results for upper-caste students, and Columns 5–8 report results for lower-caste students. Within each caste group, Columns 1 and 5 report effects on a composite index of all types of help received from OHM; Columns 2 and 6 report effects on academic help received; Columns 3 and 7 report effects on internship-related help received; and Columns 4 and 8 report effects on emotional and financial help received. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects and control for the number of roommates. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 26.*

Table A20: Heterogeneous Effects on Academic Outcomes by Sequence Match with Roommate

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) CGPA : First Year | (2) Group work | (3) Study Interactions | (4) Effort in academics | (5) CGPA : First Year | (6) Group work | (7) Study Interactions | (8) Effort in academics |
| Mixed Room | -0.078 | 0.166* | -0.002 | -0.049 | 0.133 | 0.123 | 0.044 | -0.027 |
| | (0.082) | (0.092) | (0.082) | (0.085) | (0.090) | (0.095) | (0.091) | (0.102) |
| Same Course Sequence as Roommate | 0.094 | 0.456*** | 0.310*** | 0.038 | 0.047 | 0.385*** | 0.297*** | 0.010 |
| | (0.081) | (0.126) | (0.108) | (0.097) | (0.095) | (0.126) | (0.106) | (0.115) |
| Mixed Room × Same Course seq | -0.060 | -0.243 | -0.059 | 0.188 | -0.069 | -0.132 | -0.132 | -0.013 |
| | (0.113) | (0.158) | (0.133) | (0.129) | (0.124) | (0.154) | (0.130) | (0.141) |
| DV Mean, Non-mixed | 0.474 | -0.002 | -0.080 | -0.051 | -0.445 | -0.003 | 0.047 | 0.057 |
| R-squared | 0.475 | 0.186 | 0.187 | 0.099 | 0.432 | 0.154 | 0.128 | 0.109 |
| N | 939 | 901 | 901 | 975 | 895 | 937 | 937 | 985 |

*Notes:* This table reports the effects of academic overlap on GPA, group work, and academic effort and study interactions. I look at heterogeneity by academic overlap with roommate on these outcomes. Columns 1–4 report results for upper-caste students, and Columns 5–8 report results for lower-caste students. Within each caste group, Columns 1 and 5 report effects on GPA; Columns 2 and 6 report effects on group work, shared assignments, and lab work; Columns 3 and 7 report effects on study interactions; and Columns 4 and 8 report effects on self-reported overall academic effort. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects and control for the number of roommates. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 27.*

Table A21: Effect on Academic Engagement with Roommates

| | Upper Caste | | | Lower Caste | | |
|---|---|---|---|---|---|---|
| | (1) Group work | (2) Study Interactions | (3) Effort in academics | (4) Group work | (5) Study Interactions | (6) Effort in academics |
| Mixed Room | 0.057 | -0.020 | 0.040 | 0.030 | -0.042 | -0.031 |
| | (0.073) | (0.060) | (0.060) | (0.070) | (0.058) | (0.060) |
| DV Mean, Non-mixed | -0.002 | -0.080 | -0.051 | -0.003 | 0.047 | 0.057 |
| R-squared | 0.173 | 0.174 | 0.087 | 0.141 | 0.116 | 0.110 |
| N | 906 | 906 | 983 | 938 | 938 | 986 |

*Notes:* This table reports the effects of academic overlap on GPA, group work, and academic effort and study interactions. Columns 1–3 report results for upper-caste students, and Columns 4–6 report results for lower-caste students. Columns 1 and 4 report effects on group work, shared assignments, and lab work; Columns 2 and 5 report effects on study interactions; and Columns 3 and 6 report effects on self-reported overall academic effort. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects and control for the number of roommates. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 26, 27.*

Table A22: Early exposure results on Mental Health and Attitudes towards Affirmative Action and Skills by Components

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | N | Non-mixed mean | Diff | P-Val | N | Non-mixed mean | Diff | P-Val |
| Dependent Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| *A. PHQ4: Anxiety and Depression Symptoms at Baseline (Reverse coded)* | | | | | | | | |
| Nervous or anxious (rev) | 453 | -0.017 | 0.062 | 0.623 | 434 | 0.050 | 0.004 | 0.974 |
| Can't stop worrying (rev) | 450 | 0.047 | -0.019 | 0.873 | 429 | -0.032 | 0.026 | 0.821 |
| Feeling down (rev) | 453 | 0.026 | -0.025 | 0.828 | 431 | -0.017 | 0.085 | 0.458 |
| Little interest in activities (rev) | 448 | -0.003 | 0.135 | 0.210 | 423 | -0.018 | -0.003 | 0.979 |
| *B. Relative Wellbeing components at Baseline* | | | | | | | | |
| More happy now | 448 | -0.004 | 0.038 | 0.759 | 422 | 0.021 | -0.132 | 0.232 |
| Less control in life (rev) | 443 | 0.079 | 0.018 | 0.880 | 415 | -0.087 | 0.213 | 0.084 |
| More stressed (rev) | 447 | -0.076 | 0.159 | 0.166 | 423 | 0.052 | 0.034 | 0.747 |
| Better support system | 446 | 0.148 | 0.059 | 0.604 | 420 | -0.153 | 0.038 | 0.735 |
| *C. Worry Index Components at Baseline (Reverse coded)* | | | | | | | | |
| Academics (rev) | 502 | -0.113 | 0.178 | 0.146 | 490 | 0.150 | -0.155 | 0.133 |
| Getting an Internship (rev) | 502 | -0.042 | 0.093 | 0.394 | 490 | 0.048 | -0.110 | 0.335 |
| Cultural Adaptation (rev) | 501 | 0.269 | -0.147 | 0.107 | 490 | -0.309 | -0.123 | 0.342 |
| Staying Away from Home (rev) | 502 | -0.004 | -0.009 | 0.925 | 490 | -0.034 | 0.048 | 0.666 |
| Discrimination (rev) | 501 | 0.072 | 0.065 | 0.462 | 490 | -0.088 | -0.261 | 0.047 |
| Time Management (rev) | 502 | -0.122 | 0.123 | 0.215 | 490 | 0.142 | -0.036 | 0.727 |
| *D. Attitudes towards AA at Baseline* | | | | | | | | |
| Promote social justice | 446 | -0.383 | -0.117 | 0.346 | 433 | 0.397 | 0.030 | 0.772 |
| Foster diversity | 445 | -0.170 | -0.178 | 0.219 | 423 | 0.180 | 0.154 | 0.131 |
| Hurt reserved groups (rev) | 444 | -0.233 | -0.054 | 0.626 | 429 | 0.236 | 0.071 | 0.531 |
| Reduce incentive to work (rev) | 451 | -0.394 | -0.018 | 0.857 | 434 | 0.396 | -0.037 | 0.752 |
| Benefit to non-reserved groups | 441 | -0.259 | -0.047 | 0.715 | 418 | 0.268 | 0.039 | 0.705 |
| Compromise academic quality (rev) | 451 | -0.392 | 0.128 | 0.208 | 429 | 0.444 | 0.093 | 0.430 |
| Unfair to merit (rev) | 447 | -0.446 | -0.022 | 0.824 | 432 | 0.462 | -0.033 | 0.762 |
| *E. Self-reported Skills at Baseline and Friendship with Roommate* | | | | | | | | |
| Rating of math & prog | 490 | 0.286 | -0.117 | 0.117 | 484 | -0.334 | 0.120 | 0.142 |
| Rating: English | 490 | 0.336 | -0.064 | 0.493 | 484 | -0.400 | 0.127 | 0.305 |
| Rating of soft skills | 490 | 0.242 | -0.108 | 0.131 | 484 | -0.295 | 0.111 | 0.194 |
| Expected Friendship with roommate | 473 | 2.372 | -0.197 | 0.039 | 452 | 2.242 | 0.004 | 0.964 |
| Joint Test p-value | | | | 0.030 | | | | 0.734 |

*Notes:* The table presents balance on pre-college networks and self-reported skills at baseline. Panel A reports early exposure effects on PHQ4 index components. Panels B and C report effects on components of relative happiness and worry indices. Panel E reports effects on attitudes towards Affirmative Action: Social Justice and Meritocratic concerns indices. Panel F reports effects on self-reported skills both soft skills and hard skills and expected friendship with roommate. The sample includes students only from entry year 2024 who had one or two roommates. Columns 2 and 6 report means for same-caste rooms for upper-caste and lower-caste students, respectively. Columns 3–4 and 7–8 report differences in means and corresponding p-values for upper-caste and lower-caste students. All regressions include hostel-by-cohort and specialization fixed effects and control for the number of roommates. Standard errors are clustered at the room level. The last row of each panel reports the p-value from the joint F-test of orthogonality.

*Cited on page 28.*

Table A23: Effect on Help Provided to Roommate: Exam Preparation, Internship, and Emotional or Financial Help

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) Provided Help (Composite Ind) | (2) Provided exam prep | (3) Provided Internship Help | (4) Provided Emotional /Financial Help | (5) Provided Help (Composite Ind) | (6) Provided exam prep | (7) Provided Internship Help | (8) Provided Emotional /Financial Help |
| Mixed Room | 0.093 | 0.144* | 0.065 | 0.106 | -0.115** | -0.142** | -0.054 | -0.167** |
| | (0.064) | (0.082) | (0.074) | (0.073) | (0.058) | (0.071) | (0.070) | (0.069) |
| DV Mean, Non-mixed | -0.113 | -0.081 | -0.094 | -0.154 | 0.116 | 0.089 | 0.105 | 0.150 |
| R-squared | 0.115 | 0.092 | 0.116 | 0.107 | 0.089 | 0.078 | 0.085 | 0.093 |
| N | 838 | 835 | 829 | 836 | 847 | 841 | 828 | 834 |

*Notes:* This table reports the effects of mixed-room assignment on the types of help provided to roommates. Columns 1–4 report results for upper-caste students, and Columns 5–8 report results for lower-caste students. Within each caste group, Columns 1 and 5 report effects on a composite index of all types of help provided to roommates; Columns 2 and 6 report effects on academic help provided; Columns 3 and 7 report effects on internship-related help provided; and Columns 4 and 8 report effects on emotional and financial help provided. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects and control for the number of roommates. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 25.*

Table A24: Effect on Student Club and Sports Active Participation

| | Upper Caste | | | Lower Caste | | |
|---|---|---|---|---|---|---|
| | (1) Participation in clubs and sports | (2) Participation in student clubs | (3) Participation in sports and volunteering clubs | (4) Participation in clubs and sports | (5) Participation in student clubs | (6) Participation in sports and volunteering clubs |
| Mixed Room | 0.019 | 0.003 | 0.050 | 0.017 | 0.066 | -0.054 |
| | (0.047) | (0.057) | (0.053) | (0.047) | (0.053) | (0.059) |
| DV Mean, Non-mixed | 0.034 | 0.105 | -0.077 | -0.033 | -0.103 | 0.065 |
| R-squared | 0.098 | 0.086 | 0.098 | 0.090 | 0.093 | 0.075 |
| N | 893 | 893 | 893 | 885 | 882 | 885 |

Columns 1-3 restrict to upper-caste, columns 4-6 to lower-caste students. Column 1 reports the composite Participation in Clubs and Sports index. Column 2 reports participation in student clubs, combining cultural, co-curricular, and hostel activities. Column 3 reports participation in sports and volunteering clubs. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects, control for the number of roommates. Standard errors are clustered at the room level and reported in parentheses.***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A25: Mental Health, Controlling for Roommate Interaction

| | Upper Caste | | | Lower Caste | | |
|---|---|---|---|---|---|---|
| | (1) Mental health index | (2) Mental health index | (3) Mental health index | (4) Mental health index | (5) Mental health index | (6) Mental health index |
| Mixed Room | -0.062 | -0.034 | -0.034 | -0.080* | -0.024 | -0.026 |
| | (0.045) | (0.035) | (0.035) | (0.041) | (0.032) | (0.032) |
| Social Interactions | | 0.019 | 0.031 | | 0.067*** | 0.046** |
| | | (0.017) | (0.020) | | (0.019) | (0.023) |
| Study Interactions | | | -0.023 | | | 0.039 |
| | | | (0.026) | | | (0.025) |
| DV Mean, Non-mixed | 0.027 | 0.027 | 0.027 | 0.001 | 0.001 | 0.001 |
| R-squared | 0.151 | 0.158 | 0.159 | 0.152 | 0.148 | 0.151 |
| N | 935 | 856 | 856 | 928 | 872 | 872 |

Columns 1-3 restrict to upper-caste students, columns 4-6 to lower-caste students. Column 1 (4) reports the total effect of mixed-room assignment on Mental Health on baseline specification. Column 2 (5) adds Social Interaction; column 3 (6) adds Study-Related Interaction along with as well. This is suggestive of a mediating channel but not a clean decomposition. All regressions control for the baseline PHQ4 index and relative well-being index. I add a include hostel-by-cohort and specialization-by-cohort fixed effects, control for the number of roommates, Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 28, 29.*

Table A26: Effect on GPA, Mental Health and Attitudes towards Affirmative Action: Two-Person Rooms Only

| | CGPA : First Year (1) | Mental health index (2) | AA support: reserved group (3) | AA support: non-reserved group (4) |
|---|---|---|---|---|
| *Panel A: Upper Caste Sample* | | | | |
| Mixed Room | -0.160* | -0.152** | -0.008 | 0.005 |
| | (0.086) | (0.063) | (0.077) | (0.086) |
| DV Mean in same caste rm | 0.437 | 0.049 | -0.250 | -0.236 |
| R-squared | 0.501 | 0.249 | 0.216 | 0.266 |
| N | 371 | 358 | 304 | 303 |
| Sharpened q-value | 0.096 | 0.052 | 0.712 | 0.712 |
| *Panel B: Lower Caste Sample* | | | | |
| Mixed Room | 0.077 | -0.094 | 0.027 | 0.116 |
| | (0.085) | (0.066) | (0.076) | (0.093) |
| DV Mean in same caste rm | -0.457 | -0.015 | 0.228 | 0.249 |
| R-squared | 0.488 | 0.168 | 0.162 | 0.112 |
| N | 350 | 348 | 316 | 312 |
| Sharpened q-value | 0.487 | 0.423 | 0.725 | 0.423 |
| *Panel C: Full Sample* | | | | |
| Mixed Room | -0.029 | -0.112** | -0.005 | 0.051 |
| | (0.062) | (0.047) | (0.059) | (0.067) |
| DV Mean in same caste rm | 0.010 | 0.019 | -0.011 | 0.006 |
| R-squared | 0.528 | 0.159 | 0.159 | 0.151 |
| N | 732 | 723 | 627 | 622 |
| Sharpened q-value | 0.671 | 0.034 | 0.699 | 0.671 |
| P val ($\beta_LC == \beta_UC$) | 0.069 | 0.397 | 0.917 | 0.222 |

*Notes:* Robustness check on the main results table 2: identical specification, restricted to two-person rooms only. Column 1 reports estimates for cumulative GPA at the end of the first year. Column 2 reports estimates for a composite Mental Health Index, constructed using standardized scores of the PHQ-4 index, and the worry index capturing academic- and social-life concerns in college. Negative values of the index indicate worse mental health outcomes. Column 3 reports an index of support for AA based on its perceived costs and benefits for reserved-group students. Column 4 reports an index of support for AA based on its perceived costs and benefits for non-reserved-group students. The final row of the full-sample panel (Panel C) reports the p-value from a pooled specification interacting mixed-room assignment with lower-caste, testing whether the lower- and upper-caste treatment effects differ. Sample restricted to two-person rooms only; the number-of-roommates control is constant by construction under this restriction and drops out of the fixed effects. All regressions include hostel-by-cohort and specialization-year fixed effects. I use ANCOVA specification. Standard errors are clustered at the room level. Sharpened q-values (Anderson 2008) correcting for multiple hypothesis testing within each panel are reported. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

*Cited on page 29.*

Table A27: Effect on GPA, Mental Health and Attitudes towards Affirmative Action: Partial vs. Full Mixed-Room Assignment, Three-Person Rooms Only

| | CGPA : First Year | Mental health index | AA support: reserved group | AA support: non-reserved group |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| *Panel A: Upper Caste Sample* | | | | |
| Partial Mixed Room | -0.071 | 0.027 | 0.194** | 0.094 |
| | (0.068) | (0.070) | (0.085) | (0.097) |
| Full Mixed Room | -0.071 | -0.018 | 0.198** | 0.057 |
| | (0.082) | (0.074) | (0.095) | (0.107) |
| *P-val (Partial = Full)* | 0.996 | 0.437 | 0.960 | 0.716 |
| DV Mean in same caste rm | 0.526 | -0.003 | -0.251 | -0.301 |
| R-squared | 0.494 | 0.183 | 0.206 | 0.198 |
| N | 569 | 567 | 509 | 507 |
| *Panel B: Lower Caste Sample* | | | | |
| Partial Mixed Room | 0.078 | -0.098* | -0.016 | 0.124* |
| | (0.078) | (0.057) | (0.055) | (0.069) |
| Full Mixed Room | 0.070 | -0.113* | -0.059 | 0.030 |
| | (0.090) | (0.063) | (0.069) | (0.087) |
| *P-val (Partial = Full)* | 0.922 | 0.777 | 0.435 | 0.183 |
| DV Mean in same caste rm | -0.431 | 0.019 | 0.253 | 0.223 |
| R-squared | 0.429 | 0.207 | 0.149 | 0.229 |
| N | 539 | 570 | 505 | 501 |

*Notes:* Robustness check on the main results table's partial-vs-full mixed-room specification: identical specification, restricted to three-person rooms only – the only room size where partial mixing (one of two roommates from the other caste group) and full mixing (both roommates) are separately identified; in two-person rooms every mixed room is fully mixed by construction. Column 1 reports estimates for cumulative GPA at the end of the first year. Column 2 reports estimates for a composite Mental Health Index, constructed using standardized scores of the PHQ-4 index, and the worry index capturing academic- and social-life concerns in college. Negative values of the index indicate worse mental health outcomes. Column 3 reports an index of support for AA based on its perceived costs and benefits for reserved-group students. Column 4 reports an index of support for AA based on its perceived costs and benefits for non-reserved-group students. The reported p-value in each column tests equality of the partial- and full-mixing coefficients. Sample restricted to three-person rooms only; the number-of-roommates control is constant by construction under this restriction and drops out of the fixed effects. All regressions include hostel-by-cohort and specialization-year fixed effects. I use ANCOVA specification. Standard errors are clustered at the room level. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

*Cited on page 29.*

Table A28: Effect of Roommate Caste Distance on GPA, Mental Health and Attitudes towards Affirmative Action

| | CGPA : First Year (1) | Mental health index (2) | AA support: reserved group (3) | AA support: non-reserved group (4) |
|---|---|---|---|---|
| *Panel A: Upper Caste Sample* | | | | |
| Caste distance with roommates | -0.090** | -0.036 | 0.059 | 0.039 |
| | (0.040) | (0.028) | (0.037) | (0.041) |
| DV Mean in same caste rm | 0.480 | 0.030 | -0.256 | -0.273 |
| R-squared | 0.475 | 0.104 | 0.127 | 0.183 |
| N | 945 | 933 | 818 | 815 |
| Sharpened q-value | 0.106 | 0.259 | 0.221 | 0.336 |
| *Panel B: Lower Caste Sample* | | | | |
| Caste distance with roommates | 0.019 | -0.086** | 0.047 | 0.120*** |
| | (0.049) | (0.036) | (0.036) | (0.040) |
| DV Mean in same caste rm | -0.453 | 0.020 | 0.251 | 0.246 |
| R-squared | 0.431 | 0.116 | 0.068 | 0.137 |
| N | 896 | 928 | 829 | 820 |
| Sharpened q-value | 0.351 | 0.018 | 0.130 | 0.005 |
| *Panel C: Full Sample* | | | | |
| Caste distance with roommates | -0.045 | -0.046** | 0.123*** | 0.137*** |
| | (0.033) | (0.023) | (0.028) | (0.032) |
| DV Mean in same caste rm | 0.233 | 0.027 | -0.123 | -0.139 |
| R-squared | 0.507 | 0.071 | 0.067 | 0.150 |
| N | 1841 | 1861 | 1647 | 1635 |
| Sharpened q-value | 0.052 | 0.015 | 0.000 | 0.000 |
| P val ($\beta_LC == \beta_UC$) | 0.777 | 0.699 | 0.829 | 0.323 |

*Notes:* The table presents results for academic performance, mental health, and attitudes toward affirmative action. Caste distance is defined as an average absolute caste distance a student has with their roommates. Column 1 reports estimates for cumulative GPA at the end of the first year. Column 2 reports estimates for a composite Mental Health Index, constructed using standardized scores of the PHQ-4 index, and the worry index capturing academic- and social-life concerns in college. Negative values of the index indicate worse mental health outcomes. Column 3 reports an index of support for AA based on its perceived costs and benefits for reserved-group students. Column 4 reports an index of support for AA based on its perceived costs and benefits for non-reserved-group students. The final row of the full-sample panel (Panel C) reports the p-value from a pooled specification interacting mixed-room assignment with lower-caste, testing whether the lower- and upper-caste treatment effects differ. All regressions include hostel-by-cohort and specialization-year fixed effects. I use ANCOVA specification along with a control for the number of roommates. Standard errors are clustered at the room level. Sharpened q-values (Anderson 2008) correcting for multiple hypothesis testing within each panel are reported. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

*Cited on page 26, 29.*

Table A29: Room Composition Transitions: Year 1 to Year 2

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| Year 1 Room Type | Non-Mixed | Partial-Mixed | Full-Mixed | N | Non-Mixed | Partial-Mixed | Full-Mixed | N |
| *A. 2-Person Rooms (Year 1)* | | | | | | | | |
| Non-Mixed | 78.8 | 2.1 | 19.1 | 236 | 81.7 | 3.0 | 15.3 | 202 |
| Full-Mixed | 32.3 | 5.8 | 61.9 | 223 | 30.4 | 6.2 | 63.4 | 224 |
| *B. 3-Person Rooms (Year 1)* | | | | | | | | |
| Non-Mixed | 75.8 | 12.4 | 11.8 | 161 | 63.7 | 22.9 | 13.4 | 179 |
| Partial-Mixed | 34.9 | 42.7 | 22.5 | 347 | 36.9 | 45.0 | 18.1 | 331 |
| Full-Mixed | 28.5 | 23.6 | 47.9 | 165 | 27.4 | 21.7 | 50.9 | 175 |

Notes: Sample restricted to the 2023 and 2024 admission cohorts, 2- and 3-person rooms in Year 1 (single rooms and 4-person rooms excluded). Cell entries are row percentages among students with an observed Year 2 room: among students in a given Year 1 room type and caste group who have a Year 2 room on record, the percentage who are in each Year 2 composition category. Students with no observed Year 2 room (1.0% of this sample, e.g. due to attrition) are excluded from both the percentages and the N column. *Partial-Mixed* is achievable only in 3-person rooms by construction (a 2-person room's caste mix can only be 0, 50, or 100 percent upper-caste, and 50 percent falls outside the partial-mixed range), so Panel A has only two Year 1 room types. Composition state is defined from each student's own caste perspective.

*Cited on page 30.*

Table A30: Effect on Experiences of Discrimination and Exclusion: Three Years after Admission

| | Upper Caste | | | Lower Caste | | |
|---|---|---|---|---|---|---|
| | (1) Experience of Discrimination (SD) | (2) Exclusion in Study Groups (SD) | (3) Exclusion in Social Events (SD) | (4) Experience of Discrimination (SD) | (5) Exclusion in Study Groups (SD) | (6) Exclusion in Social Events (SD) |
| Mixed Room | 0.085 | 0.059 | -0.003 | 0.344** | 0.016 | 0.047 |
| | (0.099) | (0.083) | (0.096) | (0.137) | (0.103) | (0.099) |
| DV Mean, Non-mixed | -0.077 | -0.124 | -0.030 | 0.068 | 0.110 | 0.026 |
| R-squared | 0.029 | 0.034 | 0.041 | 0.035 | 0.023 | 0.013 |
| N | 431 | 431 | 431 | 450 | 450 | 450 |

Columns 1-3 restrict to upper-caste students, columns 4-6 to lower-caste students. Column 1 reports effects on experience of discrimination. Column 2 reports effects on exclusion in study groups. Column 3 reports effects on exclusion in social events. Higher values indicate more frequently reported negative experiences. No additional controls are included. Sample is restricted to the 2023 cohort's three-year follow-up. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects and control for the number of roommates. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 30.*

Table A31: Effect on Experiences of Discrimination and Exclusion: Pooled Sample

| | Upper Caste | | | Lower Caste | | |
|---|---|---|---|---|---|---|
| | (1) Experience of Discrimination (SD) | (2) Exclusion in Study Groups (SD) | (3) Exclusion in Social Events (SD) | (4) Experience of Discrimination (SD) | (5) Exclusion in Study Groups (SD) | (6) Exclusion in Social Events (SD) |
| Mixed Room | 0.010 | 0.117* | 0.077 | 0.081 | -0.024 | 0.032 |
| | (0.074) | (0.067) | (0.072) | (0.073) | (0.076) | (0.069) |
| DV Mean, Non-mixed | -0.005 | -0.086 | 0.006 | 0.005 | 0.086 | -0.006 |
| R-squared | 0.054 | 0.059 | 0.055 | 0.074 | 0.064 | 0.063 |
| N | 966 | 966 | 966 | 978 | 978 | 978 |

This table reports experiences for the pooled sample of the 2023 and 2024 cohorts, measured at the three-year and one-year follow-ups, respectively. Columns 1-3 restrict to upper-caste students, columns 4-6 to lower-caste students. Column 1 reports effects on experience of discrimination. Column 2 reports effects on exclusion in study groups. Column 3 reports effects on exclusion in social events. Higher values indicate more frequently reported negative experiences. No additional controls are included. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects, control for the number of roommates, and are weighted using survey weights correcting for the two-tier sampling design. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 30.*

Table A32: Effect on GPA, Internships: 2 Years after Admission

| | CGPA : Second Year (1) | Internship: 2nd Summer (2) | Salary: 2nd year activity (in 1000 INR) (3) | Plan to do internship: 3rd year (4) |
|---|---|---|---|---|
| *Panel A: Upper Caste Sample* | | | | |
| Mixed Room | -0.119* | -0.070 | -10.287 | -0.022 |
| | (0.070) | (0.045) | (6.403) | (0.027) |
| DV Mean in same caste rm | 0.539 | 0.584 | 37.809 | 0.910 |
| R-squared | 0.367 | 0.077 | 0.104 | 0.172 |
| N | 471 | 455 | 458 | 468 |
| Sharpened q-value | 0.156 | 0.156 | 0.156 | 0.417 |
| *Panel B: Lower Caste Sample* | | | | |
| Mixed Room | 0.119* | 0.036 | 5.985* | -0.004 |
| | (0.072) | (0.044) | (3.542) | (0.045) |
| DV Mean in same caste rm | -0.478 | 0.303 | 9.938 | 0.678 |
| R-squared | 0.266 | 0.085 | 0.077 | 0.122 |
| N | 500 | 462 | 468 | 476 |
| Sharpened q-value | 0.196 | 0.556 | 0.196 | 0.933 |
| *Panel C: Full Sample* | | | | |
| Mixed Room | 0.003 | -0.019 | -3.465 | -0.001 |
| | (0.051) | (0.031) | (3.712) | (0.030) |
| DV Mean in same caste rm | -0.001 | 0.436 | 23.062 | 0.791 |
| R-squared | 0.415 | 0.084 | 0.059 | 0.094 |
| N | 971 | 917 | 926 | 944 |
| Sharpened q-value | 0.971 | 0.971 | 0.971 | 0.971 |
| P val ($\beta_LC == \beta_UC$) | 0.037 | 0.071 | 0.017 | 0.605 |

*Notes:* The table presents effects of mixed-room assignment on medium-run academic, labor-market, 2 years after entering college. Column 1 reports estimates for cumulative GPA at the end of the 2nd year, Column 2 reports summer internship completion at the end of 2st year summer, the Column 3 reports results for internship stipend. Column 4 reports results for plan to do 3rd-year summer internship, this includes students who both received offers and who intend to do a summer internship. The final row of the full-sample panel (Panel C) reports the p-value from a pooled specification interacting mixed-room assignment with lower-caste, testing whether the lower- and upper-caste treatment effects differ. All regressions include hostel-by-cohort and specialization-year fixed effects. I use ANCOVA specification along with a control for the number of roommates. Standard errors are clustered at the room level. Sharpened q-values (Anderson 2008) correcting for multiple hypothesis testing within each panel are reported. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

*Cited on page 31, 32.*

Table A33: Heterogeneous Effects on Affirmative Action Attitudes by Own Entrance Exam Score

| | Upper Caste | | Lower Caste | |
|---|---|---|---|---|
| | (1) AA support: reserved group | (2) AA support: non-reserved group | (3) AA support: reserved group | (4) AA support: non-reserved group |
| Mixed Room | 0.037 | -0.063 | 0.036 | 0.172*** |
| | (0.060) | (0.063) | (0.052) | (0.067) |
| Own Entrance Score (SD) | -0.235*** | -0.315*** | -0.276*** | -0.360*** |
| | (0.068) | (0.085) | (0.049) | (0.063) |
| Mixed Room × Own Entrance Score | 0.118* | 0.185** | 0.142*** | 0.147** |
| | (0.068) | (0.079) | (0.054) | (0.068) |
| DV Mean, Non-mixed | -0.251 | -0.265 | 0.239 | 0.237 |
| R-squared | 0.184 | 0.196 | 0.150 | 0.184 |
| N | 803 | 800 | 814 | 806 |

Columns 1-2 restrict to upper-caste students, columns 3-4 to lower-caste students. Column 1 (3) the reserved-group index indicating support for AA based on its perceived costs and benefits for reserved-group students. Column 2 (4) the non-reserved-group index indicating support for AA based on its perceived costs and benefits for non-reserved-group students. Each regression interacts mixed-room assignment with the student's own standardized entrance exam score, testing whether the attitude effect varies with own academic preparation. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects, control for the number of roommates. Baseline controls for the respective outcome are included, with a missingness dummy where the baseline measure is missing. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

*Cited on page 34.*

Table A34: Summary statistics: Mental Health and Attitudes on Affirmative Action at Baseline

| | Upper Caste | | | Lower Caste | | | Upper Caste - Lower Caste | |
|---|---|---|---|---|---|---|---|---|
| | N | Mean | Sd | N | Mean | Sd | Difference | P-Val |
| Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| *A. PHQ4: Anxiety and Depression Symptoms at Baseline* | | | | | | | | |
| Nervous or anxious (rev) | 453 | 0.002 | 1.005 | 434 | 0.024 | 0.925 | -0.023 | 0.726 |
| Can't stop worrying (rev) | 450 | 0.012 | 1.009 | 429 | -0.058 | 1.021 | 0.070 | 0.308 |
| Feeling down (rev) | 453 | -0.036 | 1.019 | 431 | -0.022 | 0.947 | -0.014 | 0.832 |
| Little interest in activities (rev) | 448 | 0.080 | 1.018 | 423 | -0.040 | 0.993 | 0.119 | 0.080 |
| *B. Relative unhappiness components at Baseline* | | | | | | | | |
| More happy now | 448 | 0.026 | 1.028 | 422 | -0.067 | 0.974 | 0.093 | 0.173 |
| Less control in life (rev) | 443 | 0.041 | 1.035 | 415 | 0.013 | 0.943 | 0.029 | 0.671 |
| More stressed (rev) | 447 | 0.015 | 1.067 | 423 | 0.005 | 0.932 | 0.010 | 0.881 |
| Better support system | 446 | 0.186 | 1.107 | 420 | -0.151 | 0.999 | 0.337 | 0.000 |
| *C. Worry Index Components at Baseline* | | | | | | | | |
| Academics (rev) | 502 | -0.076 | 1.027 | 490 | 0.058 | 1.033 | -0.134 | 0.041 |
| Getting an Internship (rev) | 502 | -0.036 | 1.023 | 490 | 0.001 | 1.001 | -0.037 | 0.569 |
| Cultural Adaptation (rev) | 501 | 0.183 | 0.864 | 490 | -0.383 | 1.217 | 0.566 | 0.000 |
| Staying Away from Home (rev) | 502 | -0.029 | 0.998 | 490 | 0.044 | 0.957 | -0.074 | 0.236 |
| Discrimination (rev) | 501 | 0.085 | 0.860 | 490 | -0.230 | 1.135 | 0.316 | 0.000 |
| Time Management (rev) | 502 | -0.057 | 1.010 | 490 | 0.124 | 1.005 | -0.180 | 0.005 |
| *D. Costs and Benefits of Affirmative Action to the Reserved Groups at Baseline* | | | | | | | | |
| Promote social justice | 446 | -0.414 | 0.940 | 433 | 0.445 | 0.858 | -0.859 | 0.000 |
| Foster diversity | 445 | -0.218 | 1.112 | 423 | 0.302 | 0.928 | -0.519 | 0.000 |
| Hurt reserved groups (rev) | 444 | -0.250 | 1.013 | 429 | 0.308 | 0.973 | -0.558 | 0.000 |
| Reduce incentive to work (rev) | 451 | -0.388 | 0.883 | 434 | 0.380 | 1.067 | -0.768 | 0.000 |
| *E. Costs and Benefits of AA to the Non-Reserved Groups at Baseline* | | | | | | | | |
| Benefit to non-reserved groups | 441 | -0.288 | 1.051 | 418 | 0.367 | 0.809 | -0.655 | 0.000 |
| Compromise academic quality (rev) | 451 | -0.318 | 0.904 | 429 | 0.533 | 0.972 | -0.850 | 0.000 |
| Unfair to merit (rev) | 447 | -0.430 | 0.854 | 432 | 0.509 | 0.967 | -0.938 | 0.000 |

*Notes:* The table presents summary statistics for socioeconomic indicators. The sample includes students from entry year of 2024 who had one or two roommates. I report the sample size, mean, and standard deviation separately for upper-caste and lower-caste students. PHQ4 is a standard measure of anxiety and depression symptoms, with higher values indicating worse mental health. Relative Unhappiness Index measures students' happiness relative to their pre-college happiness levels, with higher values indicating worse happiness. Worry Index measures the extent to which students are worried about college life, with higher values indicating more worry. Social Justice and Diversity benefits of Affirmative Action index measures students' attitudes toward the social justice aspects of affirmative action policies, with higher values indicating more support. Meritocratic concerns of Affirmative Action index measures students' attitudes toward whether affirmative action policies undermine meritocracy, with higher values indicating more concern/less supported. Students responded to a series of statements using a five-point Likert scale ranging from strongly disagree to strongly agree, and I standardized the responses to create z-scores for each variable with respect to full sample.

Table A35: Balance table on Attrition, Socio Economic Indicators and College Preparation: Partial and Full Mixed Specification

| | Upper Caste | | | | | | Lower Caste | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N | Non mixed mean | Partial Mixed diff | P-Val | Fully Mixed diff | P-Val | N | Non mixed mean | Partial Mixed diff | P-Val | Fully Mixed diff | P-Val |
| Dependent Variable | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| *A. Survey attrition indicators* | | | | | | | | | | | | |
| Response | 1145 | 0.838 | 0.005 | 0.883 | -0.010 | 0.739 | 1121 | 0.891 | -0.005 | 0.863 | -0.022 | 0.422 |
| Survey completed | 1145 | 0.800 | -0.017 | 0.630 | -0.001 | 0.977 | 1121 | 0.872 | 0.015 | 0.660 | -0.001 | 0.967 |
| *B. Socio Economic Indicators* | | | | | | | | | | | | |
| Mother's education (bachelors or higher) | 902 | 0.876 | 0.006 | 0.876 | -0.066 | 0.044 | 881 | 0.566 | -0.030 | 0.549 | 0.005 | 0.913 |
| Father's education (bachelors or higher) | 896 | 0.786 | 0.023 | 0.549 | -0.046 | 0.181 | 876 | 0.641 | -0.053 | 0.254 | -0.030 | 0.481 |
| Assets Index | 824 | 0.166 | 0.016 | 0.789 | -0.033 | 0.502 | 809 | -0.171 | -0.043 | 0.500 | 0.013 | 0.817 |
| Taken a loan | 885 | 0.148 | -0.019 | 0.573 | 0.019 | 0.529 | 890 | 0.194 | 0.036 | 0.368 | 0.033 | 0.306 |
| Family income (9L or above) | 859 | 0.699 | -0.074 | 0.150 | -0.081 | 0.059 | 895 | 0.425 | -0.058 | 0.226 | -0.027 | 0.513 |
| Speaks English with family | 917 | 0.494 | 0.024 | 0.633 | -0.053 | 0.193 | 938 | 0.246 | 0.069 | 0.086 | 0.036 | 0.329 |
| Speaks English with friends | 917 | 0.705 | 0.039 | 0.363 | -0.024 | 0.535 | 938 | 0.558 | 0.037 | 0.416 | 0.021 | 0.601 |
| Knows someone who did engineering | 912 | 0.682 | -0.007 | 0.884 | -0.088 | 0.029 | 907 | 0.490 | -0.018 | 0.681 | 0.003 | 0.932 |
| Knows someone studied in IITs | 912 | 0.259 | 0.003 | 0.938 | -0.008 | 0.809 | 907 | 0.168 | 0.021 | 0.554 | 0.008 | 0.807 |
| *C. JEE Preparation and Academic Background* | | | | | | | | | | | | |
| Score in Class XII | 942 | 93.089 | 1.356 | 0.048 | 0.796 | 0.285 | 934 | 90.175 | -0.150 | 0.774 | 0.536 | 0.346 |
| Score in Class X | 939 | 94.995 | 0.943 | 0.175 | 0.157 | 0.844 | 935 | 92.942 | 0.183 | 0.782 | -0.724 | 0.352 |
| JEE Advanced score | 1112 | 204.125 | 0.034 | 0.984 | -1.927 | 0.208 | 1091 | 139.368 | 4.373 | 0.106 | -0.445 | 0.849 |
| Years: JEE preparation | 964 | 2.520 | -0.133 | 0.329 | -0.129 | 0.270 | 964 | 2.251 | 0.025 | 0.837 | -0.048 | 0.679 |
| Average daily study hours JEE | 963 | 8.225 | -0.343 | 0.409 | 0.421 | 0.171 | 962 | 8.588 | 0.623 | 0.059 | 0.371 | 0.218 |
| JEE Prep Cost (in lakhs INR) | 875 | 1.384 | 0.026 | 0.819 | -0.045 | 0.650 | 884 | 1.394 | -0.116 | 0.305 | -0.070 | 0.481 |
| Took more than 1 attempt | 945 | 0.147 | -0.043 | 0.174 | 0.015 | 0.604 | 934 | 0.317 | -0.050 | 0.238 | -0.070 | 0.069 |
| Doesn't Know programming | 912 | 0.455 | 0.023 | 0.660 | 0.050 | 0.225 | 907 | 0.671 | -0.025 | 0.586 | -0.030 | 0.452 |
| Joint Test p-value | | | | 0.439 | | 0.449 | | | | 0.651 | | 0.316 |

*Notes:* The table presents balance on attrition, socioeconomic indicators, and pre-college academic outcomes across partially and fully mixed rooms. Panel A reports balance on attrition indicators, including whether students responded to and completed the survey. Panels B and C report balance on socioeconomic characteristics and pre-college academic outcomes, respectively. The sample includes students from entry years 2023 and 2024 assigned to three-person rooms, the only room size in which a partially mixed assignment is possible. Same-caste rooms are the omitted category. Columns 2 and 8 report same-caste room means for upper-caste and lower-caste students, respectively. For upper-caste students, columns 3 and 5 report differences in means for partially and fully mixed rooms relative to same-caste rooms, with corresponding p-values in columns 4 and 6 ; columns 9 and 11 report the analogous differences for lower-caste students, with p-values in columns 10 and 12. All regressions include hostel-by-cohort and specialization fixed effects and control for the number of roommates. Standard errors are clustered at the room level. The last row reports the p-value from the joint F-test of orthogonality for each treatment.

Table A36: Heterogeneous Effects on Main Outcomes by Family Income

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) CGPA : First Year | (2) Mental health index | (3) AA support: reserved group | (4) AA support: non-reserved group | (5) CGPA : First Year | (6) Mental health index | (7) AA support: reserved group | (8) AA support: non-reserved group |
| Mixed Room | 0.006 | -0.027 | 0.020 | -0.157 | 0.060 | -0.094 | -0.015 | 0.085 |
| | (0.086) | (0.075) | (0.088) | (0.103) | (0.074) | (0.064) | (0.058) | (0.083) |
| Family income (9L or above) | 0.173** | 0.092 | -0.164* | -0.292*** | 0.002 | 0.005 | -0.023 | -0.057 |
| | (0.080) | (0.077) | (0.088) | (0.106) | (0.095) | (0.080) | (0.078) | (0.112) |
| Mixed Room × Family Income (¿ Rs. 9L) | -0.163 | -0.057 | 0.130 | 0.237* | 0.109 | -0.047 | 0.085 | 0.104 |
| | (0.102) | (0.091) | (0.112) | (0.131) | (0.116) | (0.093) | (0.094) | (0.125) |
| DV Mean, Non-mixed | 0.474 | 0.027 | -0.251 | -0.265 | -0.445 | 0.001 | 0.239 | 0.237 |
| R-squared | 0.506 | 0.192 | 0.190 | 0.212 | 0.454 | 0.161 | 0.120 | 0.142 |
| N | 785 | 786 | 701 | 699 | 778 | 820 | 739 | 734 |

Columns 1-4 restrict to upper-caste students, columns 5-8 to lower-caste students. Within each caste block, Column 1 reports cumulative GPA at the end of the first year; Column 2 the composite Mental Health Index; Column 3 the reserved-group Support for Affirmative Action sub-index; Column 4 the non-reserved-group sub-index – the same four outcomes as the main results table. Each regression interacts mixed-room assignment with an indicator for self-reported family income above Rs. 9 lakh/year, to test whether the treatment effect varies by pre-college family income within each caste group. All regressions include hostel-by-cohort and specialization-by- cohort fixed effects and control for the number of roommates. Baseline controls for the respective outcome are included, with a missingness dummy where the baseline measure is missing. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A37: Effect on GPA, Mental Health and Attitudes towards Affirmative Action: Partial vs. Full Mixed-Room Assignment

| | CGPA : First Year | Mental health index | AA support: reserved group | AA support: non-reserved group |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| *Panel A: Upper Caste Sample* | | | | |
| Partial Mixed Room | -0.085 | -0.011 | 0.136* | 0.081 |
| | (0.062) | (0.061) | (0.077) | (0.086) |
| Full Mixed Room | -0.112* | -0.088* | 0.104* | 0.031 |
| | (0.057) | (0.045) | (0.059) | (0.064) |
| *P-val (Partial = Full)* | 0.668 | 0.158 | 0.649 | 0.575 |
| DV Mean in same caste rm | 0.474 | 0.027 | -0.251 | -0.265 |
| R-squared | 0.473 | 0.152 | 0.173 | 0.185 |
| N | 947 | 935 | 820 | 817 |
| *Panel B: Lower Caste Sample* | | | | |
| Partial Mixed Room | 0.098 | -0.084 | -0.011 | 0.153** |
| | (0.070) | (0.055) | (0.052) | (0.067) |
| Full Mixed Room | 0.087 | -0.081* | -0.029 | 0.083 |
| | (0.058) | (0.045) | (0.051) | (0.063) |
| *P-val (Partial = Full)* | 0.881 | 0.960 | 0.723 | 0.296 |
| DV Mean in same caste rm | -0.445 | 0.001 | 0.239 | 0.237 |
| R-squared | 0.433 | 0.146 | 0.110 | 0.132 |
| N | 896 | 928 | 829 | 820 |

*Notes:* The table presents results for academic performance, mental health, and attitudes toward affirmative action. Column 1 reports estimates for cumulative GPA at the end of the first year. Column 2 reports estimates for a composite Mental Health Index, constructed using standardized scores of the PHQ-4 index, and the worry index capturing academic- and social-life concerns in college. Negative values of the index indicate worse mental health outcomes. Column 3 reports an index of support for AA based on its perceived costs and benefits for reserved-group students. Column 4 reports an index of support for AA based on its perceived costs and benefits for non-reserved-group students. The final row of the full-sample panel (Panel C) reports the p-value from a pooled specification interacting mixed-room assignment with lower-caste, testing whether the lower- and upper-caste treatment effects differ. All regressions include hostel-by-cohort and specialization-year fixed effects. I use ANCOVA specification along with a control for the number of roommates. Standard errors are clustered at the room level. Sharpened q-values (Anderson 2008) correcting for multiple hypothesis testing within each panel are reported. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

Table A38: Effect on Mental Health: PHQ4, Relative Happiness, Worry Index

| | Mental health index (1) | PHQ4 index (2) | Relative well being index (3) | Worry index (4) |
|---|---|---|---|---|
| *Panel A: Upper Caste Sample* | | | | |
| Mixed Room | -0.062 | -0.093 | -0.007 | -0.024 |
| | (0.044) | (0.068) | (0.042) | (0.045) |
| DV Mean in same caste rm | 0.027 | 0.016 | -0.006 | 0.052 |
| R-squared | 0.149 | 0.153 | 0.076 | 0.135 |
| N | 935 | 875 | 839 | 890 |
| Sharpened q-value | 0.342 | 0.342 | 0.873 | 0.784 |
| *Panel B: Lower Caste Sample* | | | | |
| Mixed Room | -0.082** | -0.084 | 0.005 | -0.048 |
| | (0.042) | (0.064) | (0.042) | (0.045) |
| DV Mean in same caste rm | 0.001 | -0.010 | 0.012 | -0.046 |
| R-squared | 0.146 | 0.125 | 0.082 | 0.124 |
| N | 928 | 877 | 850 | 892 |
| Sharpened q-value | 0.197 | 0.377 | 0.904 | 0.381 |
| *Panel C: Full Sample* | | | | |
| Mixed Room | -0.073** | -0.099** | 0.006 | -0.038 |
| | (0.032) | (0.047) | (0.030) | (0.033) |
| DV Mean in same caste rm | 0.014 | 0.003 | 0.003 | 0.003 |
| R-squared | 0.109 | 0.103 | 0.042 | 0.091 |
| N | 1863 | 1752 | 1689 | 1782 |
| Sharpened q-value | 0.035 | 0.035 | 0.420 | 0.163 |
| P val ($\beta_LC == \beta_UC$) | 0.553 | 0.911 | 0.877 | 0.693 |

*Notes:* The table presents results for mental health outcomes: the Mental Health Index, the PHQ-4 index, the relative wellbeing index, and the worry index. In all columns, higher values indicate better mental health outcomes. Column 1 reports estimates for a composite Mental Health Index, constructed using standardized scores of the individual mental health measures. Column 2 reports results for the PHQ-4 index, the standardized PHQ-4 score measuring anxiety and depression symptoms, reverse-coded so that higher values indicate fewer symptoms. Column 3 reports results for the relative wellbeing index, an index of four components, with higher values indicating better relative wellbeing. Column 4 reports results for the standardized worry index, an index of self-reported worries about academic and social aspects of college life. The final row of the full-sample panel (Panel C) reports the p-value on the interaction between mixed-room assignment and a lower-caste indicator from a pooled specification, testing whether the lower- and upper-caste treatment effects differ. All regressions control for the baseline PHQ-4 index and relative wellbeing index (missing values imputed as zero, with an indicator for missingness included) and for the number of roommates. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively

Table A39: Effect on Support for Affirmative Action: Benefits and Costs to Different Groups

| | Supports AA index (1) | AA support: reserved group (2) | AA support: non-reserved group (3) | Opportunities inside IIT: Equal (4) | Clearing JEE: Merit only (5) |
|---|---|---|---|---|---|
| *Panel A: Upper Caste Sample* | | | | | |
| Mixed Room | 0.088* | 0.115** | 0.048 | 0.191* | 0.087 |
| | (0.053) | (0.057) | (0.058) | (0.105) | (0.117) |
| DV Mean in same caste rm | -0.256 | -0.251 | -0.265 | -0.021 | 0.088 |
| R-squared | 0.196 | 0.172 | 0.184 | 0.099 | 0.124 |
| N | 824 | 820 | 817 | 449 | 443 |
| Sharpened q-value | 0.163 | 0.163 | 0.456 | 0.163 | 0.456 |
| *Panel B: Lower Caste Sample* | | | | | |
| Mixed Room | 0.046 | -0.022 | 0.110** | 0.174 | 0.012 |
| | (0.044) | (0.045) | (0.056) | (0.109) | (0.101) |
| DV Mean in same caste rm | 0.240 | 0.239 | 0.237 | 0.011 | -0.079 |
| R-squared | 0.117 | 0.110 | 0.131 | 0.076 | 0.100 |
| N | 834 | 829 | 820 | 432 | 433 |
| Sharpened q-value | 0.495 | 0.772 | 0.240 | 0.280 | 0.906 |
| *Panel C: Full Sample* | | | | | |
| Mixed Room | 0.077* | 0.049 | 0.100** | 0.178** | 0.042 |
| | (0.040) | (0.040) | (0.047) | (0.076) | (0.079) |
| DV Mean in same caste rm | -0.005 | -0.002 | -0.012 | -0.006 | 0.009 |
| R-squared | 0.158 | 0.138 | 0.135 | 0.061 | 0.086 |
| N | 1658 | 1649 | 1637 | 881 | 876 |
| Sharpened q-value | 0.125 | 0.298 | 0.125 | 0.125 | 0.622 |
| P val ($\beta_LC == \beta_UC$) | 0.465 | 0.086 | 0.648 | 0.825 | 0.696 |

*Notes:* The table presents results for attitudes towards Affirmative Action, including benefits to the group who benefit from AA policy and perceptions on costs to those who don't benefit from AA policy. Column 1 reports estimates for a composite Affirmative Action support Index constructed as the mean of dependent variables in columns 2 and 3. Column 2 reports estimates for an index of attitudes that are related to benefits and costs (reverse coded) of AA policies for groups that receive reservation. Column 3 reports estimates for an index of attitudes that are related to benefits and costs (reverse coded) of AA policies for groups that don't benefit from AA. Column 4 reports if students believe opportunities inside university are equal for all. Column 5 reports if students believe that only merit is required to clear entrance exam. Higher values in columns 1, 2, and 3 indicate stronger support for Affirmative Action. All regressions include hostel-by-cohort and specialization fixed effects and control for the number of roommates. Standard errors are clustered at the room level. All the regressions include baseline controls for the respective dependent variables and a missing indicator for the baseline controls and number of roommates.

Table A40: Effect on Friendship Networks and Cross-Caste Friendships

| | Upper Caste | | | | | Lower Caste | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| | Friends network index | Close friends in college | Close Friends Outside IIT | Different caste friends within IIT | Different caste friends outside IIT | Friends network index | Close friends in college | Close Friends Outside IIT | Different caste friends within IIT | Different caste friends outside IIT |
| Mixed Room | -0.004 | 0.022 | -0.030 | 0.181** | 0.058 | -0.075 | -0.005 | -0.144** | -0.022 | 0.027 |
| | (0.072) | (0.080) | (0.078) | (0.087) | (0.088) | (0.064) | (0.077) | (0.067) | (0.073) | (0.072) |
| DV Mean, Non-mixed | -0.016 | 0.031 | -0.068 | -0.345 | -0.383 | 0.020 | -0.030 | 0.065 | 0.360 | 0.390 |
| R-squared | 0.098 | 0.094 | 0.091 | 0.074 | 0.074 | 0.096 | 0.072 | 0.117 | 0.093 | 0.068 |
| N | 922 | 922 | 922 | 748 | 738 | 944 | 944 | 944 | 710 | 714 |

Columns 1-5 restrict to upper-caste students, columns 6-10 to lower-caste students. Within each caste block, Column 1 (6) reports the Friendship Index, a composite of close friends at college and close friends outside college; Column 2 (7) reports the number of close friends at college; Column 3 (8) reports the number of close friends outside college; Column 4 (9) reports the number of other-caste friends within college; Column 5 (10) reports the number of other-caste friends outside college. All outcomes are standardized (z-scores) with respect to the full sample. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects and control for the number of roommates. Columns 1-3 (6-8) include baseline controls for the respective outcome, with a missingness dummy where the baseline measure is unavailable; no baseline measure is available for columns 4-5 (9-10). Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A41: Effect on Stipends and Summer Internship plan: 3 Years after Admission

| | Internship stipend (in 1000 INR) (1) | Salary: 3rd year activity (tc at 90th percentile, in 1000 INR) (2) | Plan to do internship: 3rd year (3) |
|---|---|---|---|
| *Panel A: Upper Caste Sample* | | | |
| Mixed Room | -30.724*** | -30.158*** | -0.023 |
| | (11.684) | (10.437) | (0.027) |
| DV Mean in same caste rm | 157.402 | 153.296 | 0.910 |
| R-squared | 0.442 | 0.414 | 0.179 |
| N | 446 | 446 | 468 |
| *Panel B: Lower Caste Sample* | | | |
| Mixed Room | -8.604 | -9.297 | 0.006 |
| | (7.399) | (7.377) | (0.045) |
| DV Mean in same caste rm | 56.478 | 65.690 | 0.678 |
| R-squared | 0.267 | 0.235 | 0.159 |
| N | 485 | 485 | 476 |
| *Panel C: Full Sample* | | | |
| Mixed Room | -19.557*** | -19.707*** | 0.005 |
| | (7.098) | (6.570) | (0.028) |
| DV Mean in same caste rm | 103.770 | 106.741 | 0.791 |
| R-squared | 0.400 | 0.362 | 0.162 |
| N | 931 | 931 | 944 |
| P val ($\beta_LC == \beta_UC$) | 0.085 | 0.086 | 0.605 |

*Notes:* The table presents effects of mixed-room assignment on medium-run labor-market outcomes. Column 1 repprts internship stipends of people only who reported having received an internship offer. Column 2 reports stipends for summer activity top coded at the 90th percentile. Colum 3 reports results for plan to do 3rd-year summer internship, including people who reported having received an internship offer. These are alternative definitions of the internship outcome reported table 6. Standard errors are clustered at the room level. All regressions include hostel-by-cohort and specialization-year fixed effects, number of roommates and entrance exam scores are added as controls. panel are reported. ***, **, * indicates significance at the 1%, 5%, and 10% level respectively.

*Cited on page 32.*

Table A42: Heterogeneous Effects on Main Outcomes by Gender: Three Years after Admission

| | Upper Caste | | | | Lower Caste | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| | Third-Year GPA (SD) | Mental health: 3yr | AA support: reserved group | AA support: non-reserved group | Third-Year GPA (SD) | Mental health: 3yr | AA support: reserved group | AA support: non-reserved group |
| Mixed Room | -0.127 | -0.067 | -0.053 | -0.080 | 0.082 | -0.042 | 0.068 | 0.073 |
| | (0.087) | (0.063) | (0.076) | (0.089) | (0.085) | (0.052) | (0.064) | (0.073) |
| Female | 0.190 | -0.193** | 0.030 | 0.210* | 0.180 | -0.146** | 0.063 | 0.180* |
| | (0.148) | (0.081) | (0.101) | (0.112) | (0.132) | (0.072) | (0.111) | (0.093) |
| Mixed Room × Female | -0.016 | 0.091 | 0.022 | -0.005 | -0.119 | 0.080 | 0.109 | -0.008 |
| | (0.183) | (0.108) | (0.140) | (0.156) | (0.192) | (0.096) | (0.173) | (0.159) |
| DV Mean, Non-mixed | 0.518 | 0.089 | -0.138 | -0.197 | -0.459 | -0.072 | 0.118 | 0.165 |
| R-squared | 0.284 | 0.017 | 0.003 | 0.014 | 0.145 | 0.008 | 0.012 | 0.017 |
| N | 471 | 472 | 452 | 454 | 500 | 494 | 468 | 467 |

Columns 1-4 restrict to upper-caste students, columns 5-8 to lower-caste students. Within each caste block, Column 1 reports cumulative GPA through the third year; Column 2 the composite Mental Health Index at the three-year follow-up; Column 3 the reserved-group Support for Affirmative Action sub-index; Column 4 the non-reserved-group sub-index. Each regression interacts mixed-room assignment with a Female indicator to test whether the treatment effect varies by gender within each caste group. Regressions control for the number of roommates, but exclude both hostel-by-cohort fixed effects – since hostel assignment is itself gendered – and cohort fixed effects, since the three-year follow-up is a single cohort. Baseline controls for the respective outcome are included, with a missingness dummy where the baseline measure is unavailable. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A43: Effect on Leadership Positions, Job Preferences, and Expected Salary

| | Upper Caste | | | Lower Caste | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Clubs Leadership | Preferred job sector: Finance/Consulting | Expected salary (INR 1000s) | Clubs Leadership | Preferred job sector: Finance/Consulting | Expected salary (INR 1000s) |
| Mixed Room | -0.126** | -0.106** | 1.882 | 0.001 | -0.019 | -115.705 |
| | (0.060) | (0.049) | (375.368) | (0.056) | (0.049) | (350.906) |
| DV Mean, Non-mixed | 0.134 | 0.520 | 5271.515 | -0.164 | 0.308 | 4348.665 |
| R-squared | 0.097 | 0.128 | 0.140 | 0.073 | 0.083 | 0.066 |
| N | 505 | 496 | 970 | 475 | 483 | 972 |

Columns 1-3 restrict to upper-caste students, columns 4-6 to lower-caste students. Column 1 reports effects on holding a position of responsibility in student clubs (Clubs Leadership index). Column 2 reports effects on preferring a job in finance or consulting. Column 3 reports effects on expected first-job salary in thousands of INR, top-coded at the 95th percentile to reduce the influence of outliers. No additional controls are included. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects, control for the number of roommates, and are weighted using survey weights correcting for the two-tier sampling design. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table A44: Effect on Leadership Positions, Job Preferences, and Expected Salary: Three Years after Admission

| | Upper Caste | | | Lower Caste | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Clubs Leadership | Preferred job sector: Finance/Consulting | Expected salary (INR 1000s) | Clubs Leadership | Preferred job sector: Finance/Consulting | Expected salary (INR 1000s) |
| Mixed Room | -0.034 | -0.087** | 59.539 | 0.019 | -0.035 | -248.799 |
| | (0.053) | (0.044) | (562.060) | (0.048) | (0.036) | (381.740) |
| DV Mean, Non-mixed | 0.031 | 0.446 | 5440.314 | -0.029 | 0.184 | 4014.218 |
| R-squared | 0.046 | 0.061 | 0.075 | 0.010 | 0.039 | 0.025 |
| N | 463 | 465 | 482 | 478 | 467 | 512 |

Columns 1-3 restrict to upper-caste students, columns 4-6 to lower-caste students. Column 1 reports effects on holding a position of responsibility in student clubs (Clubs Leadership index). Column 2 reports effects on preferring a job in finance or consulting. Column 3 reports effects on expected first-job salary in thousands of INR, top-coded at the 95th percentile to reduce the influence of outliers. No additional controls are included. Sample is restricted to the 2023 cohort's three-year follow-up. All regressions include hostel-by-cohort and specialization-by-cohort fixed effects and control for the number of roommates. Standard errors are clustered at the room level and reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

# A Survey Protocol and Data cleaning

I recruited four student survey managers who served as the primary points of contact for survey administration. For each survey wave, the survey managers recruited two to three student ambassadors in each hostel. Hostel ambassadors assisted with communicating information about the survey, organizing survey sessions, and following up with students within their respective hostels. All questionnaires were self-administered. I used a hybrid survey administration protocol that combined online questionnaires with in-person survey sessions and hostel-level tracking and follow-up.

## A.1 Recruitment and Tracking

**2024 cohort:** For the 2024 cohort baseline survey, data collection took place during the first week of college, coinciding with the hostel orientation and induction period for first-year students. These orientation activities are typically attended by nearly all students in the incoming cohort. I, together with the survey managers, visited the hostels during these sessions. Students were gathered in a common hall within the hostel, where we explained the purpose and procedures of the study and invited them to participate. Students were informed that the survey concerned general aspects of college life, including their expectations about college and how their experiences and trajectories evolve over time. Students were provided with a survey link and completed the questionnaire individually. Students who were unable to attend the group sessions were contacted separately and encouraged to complete the questionnaire. Hostel ambassadors conducted individual follow-up with these students and provided them with the survey link. Approximately 90% of all baseline responses were obtained within 2–7 days of students' entry into the college, while the remaining 10% were obtained during the following week through individual follow-up. Thus, the baseline survey was administered within approximately two weeks of college entry for the full sample.

The endline survey for the 2024 cohort followed the same basic recruitment structure. Hostel ambassadors organized survey sessions in which students were gathered in common areas and invited to complete the questionnaire. Attendance at these sessions was approximately 60 percent of students in a hostel, on average. To reach students who did not attend the group sessions, hostel ambassadors conducted additional door-to-door recruitment using posters and pamphlets to publicize the survey and encourage participation. During this phase, I provided tracking sheets to hostel ambassadors to monitor participation and identify students who had not yet completed the questionnaire for follow-up.

**2023 cohort:** For both survey waves of the 2023 cohort, recruitment relied primarily on hostel-based communication and individual follow-up. Hostel ambassadors publicized the survey through posters, direct door-to-door outreach within the hostels, and messages distributed through hostel WhatsApp groups. These channels were used to inform students about the

survey, encourage participation, and follow up with students who had not yet completed the questionnaire.

For the first wave of the 2023 cohort survey, the initial recruitment round yielded responses from 71.8% of students in the cohort. After this initial round, I fixed the set of initial nonrespondents and drew a simple random sample of 25% of these students. This resulted in a subsample of 85 students from the 338 initial nonrespondents. I then conducted intensive individual follow-up with these selected students and asked them to complete the survey. In analyses, I account for this two stage sampling design using sampling weights. The 71.8% of students who responded during the initial round receive a weight of 1, while the 25% random subsample of initial nonrespondents receives a weight of 4, corresponding to the inverse of the probability of selection for intensive follow-up. Regressions using outcomes collected through this sampling procedure are estimated using these sampling weights.

The follow-up survey of the 2023 cohort was conducted separately as a single-stage survey. Two-stage sampling and sampling weights are not applied to this wave. Response rates were high across both cohorts and survey waves. The response rates for each survey wave are reported in Table A1.

### A.2 Hostel Allocation and Student Lists

**Student and hostel lists:** I obtained cohort-level lists containing students' names, college identification numbers, and hostel assignments through student survey managers who had access to these lists through college sources. These lists were used to identify students belonging to each cohort, organize recruitment by hostel, and establish the survey contact frame.

I obtained hostel allocation information from multiple sources, depending on the cohort and year. For the 2024 cohort, I obtained first- and second-year hostel allocation lists for all hostels from the student heads of the respective hostels. These lists were obtained during the hostel orientation and recruitment period. For the 2023 cohort, I similarly obtained the second-year hostel allocation lists from the student heads of the respective hostels.

For the 2023 cohort's first-year allocation, I obtained administrative hostel rosters for 9 of the 13 hostels by visiting the respective hostel administration offices. The rosters were available as electronic Excel files or hard copies, which I manually transcribed into Excel during my visits. For the remaining four hostels, I reconstructed room allocations using students' self-reported hostel, room number, and roommate names collected in the survey. I cross-checked self-reported information against the available administrative records and conducted additional verification when discrepancies or missing information were identified. For hostels without administrative records, hostel ambassadors assisted in recontacting students to resolve discrepancies. I manually reviewed the resulting room and roommate records for consistency within and across hostels.

**Respondent identification and data validation.** Students reported their college identification number, institutional email address, room number, and roommate names in the survey. I used the

hostel allocation lists and cohort contact lists to verify these information and to resolve discrepancies as part of the data-cleaning process. College identification numbers and institutional email addresses are linked and provide a unique identifier for each student. I used these identifiers to verify respondent identity and to identify duplicate submissions within each survey wave.

### A.3 JEE rank and score construction:

I constructed students' JEE rank and score measures by combining survey responses with JEE examination records published by the institute. I first scraped the institute's published JEE reports, which contain student-level information on JEE score, JEE rank, admission category, specialization, and institute. The examination ID also contains information on the examination centre or location. The published records additionally report gender- and category-specific opening and closing ranks for each specialization, which provide additional information for validating student-level matches.

I first collected students' self-reported JEE rank and score in the survey. I then matched students to the published JEE records using their reported rank, restricting matches to the relevant cohort and specialization. Because JEE rank is unique within these cells, exact matches provide a direct way to identify students in the published records. Any missing information due to non-response or mismatch due to typos or misreporting, I used the combination of examination location, specialization, gender, and category-specific opening and closing ranks to identify the most plausible record. City, gender- and category-specific cutoffs were particularly useful for resolving cases for missing ranks. I also used publicly available information, including rank information published by coaching institutes and information available through students' public profiles or school records, to cross-check and resolve remaining unmatched observations.

This procedure resulted in identified JEE records for 99 percent of students in the 2024 cohort and 95 percent of students in the 2023 cohort. As a validation of the resulting classification, the distribution of admission categories in the cleaned survey data closely matches the corresponding category shares in the institute's published records. The final JEE rank, score, and category measures are constructed from these matched records rather than relying solely on students' self-reported responses.

### A.4 Survey Questions

Table A45: Survey wording: mental health

| Item | Survey Question | Scale / Type |
|---|---|---|
| GAD-2 anxiety items (PHQ4) | "Over the last two weeks, how often have you been bothered by the following problems:" (1) "Feeling nervous, anxious or on edge"; (2) "Not being able to stop or control worrying" | 4-pt frequency: Not at all / Some days / More than half the days / Almost Everyday / DNWA |
| PHQ-2 depression items (PHQ4) | "Over the last two weeks, how often have you been bothered by the following problems:" (1) "Feeling down, depressed or hopeless"; (2) "Little interest or pleasure in doing things" | 4-pt frequency: Not at all / Some days / More than half the days / Almost Everyday / DNWA |
| Relative well-being vs. pre-college period | "Examine each of the five statements below and indicate your opinion": (1) "I am more happy now compared to my JEE preparation days"; (2) "I find little joy in my daily activities compared to when I was preparing for the JEE"; (3) "I have a better support system now than I did during my JEE preparation"; (4) "I feel less in control of my life now than I did when I was preparing for the JEE"; (5) "I am more stressed on life now than when I was preparing for the JEE" | 5-pt agreement: Strongly Agree / Agree / Neutral / Disagree / Strongly Disagree / DNWA |
| College worries | "How worried are you about the following things (your day to day college life):" (1) "Academics"; (2) "Getting internships/jobs"; (3) "Language/cultural differences"; (4) "Staying away from home"; (5) "Discrimination/Exclusion in study groups"; (6) "Time management (Acads and clubs)" | 5-pt worry scale: Not at all(1) / A Little(2) / Mildly worried(3) / Worried(4) / Extremely worried(5) / DNWA |
| Loneliness | "Examine each of the three statements below and answer them": (1) "How often do you feel you do not have friends?"; (2) "How often do you feel left out?"; (3) "How often do you feel isolated from others?" | 4-pt frequency: Not at all / Sometimes / Most times / Yes, always / DNWA |

*Continued on next page*

*Table A45 continued*

| Item | Survey Question | Scale / Type |
|---|---|---|
| Self-efficacy | "Examine each of the six statements below and answer them": (1) "If someone opposes you, can you find some way to get what you want?"; (2) "Is it easy for you to stick to and accomplish your goals?"; (3) "Are you confident that you could deal efficiently with unexpected events?"; (4) "Do you know how to handle unforeseen situations by using your resourcefulness?"; (5) "Can you remain calm when facing difficulties by relying on your coping abilities?"; (6) "Can you usually handle whatever comes your way?" | 4-pt frequency: Not at all / Sometimes / Most times / Yes, always / DNWA |

Table A46: Survey wording: affirmative action attitudes

| Item | Survey Question | Scale / Type |
|---|---|---|
| Benefit: social justice (reserved group) | "Reservations promote social justice by compensating for historical or systemic inequalities" | 5-pt agreement: Strongly Agree / Agree / Neutral / Disagree / Strongly Disagree / DNWA |
| Benefit (reserved group): diversity and inclusion | "Reservations can foster diversity and inclusion within colleges and universities" | 5-pt agreement (as above) |
| Cost (reserved group): reduces incentive to work hard | "Reservations may reduce the incentive for students to work hard" | 5-pt agreement (as above) |
| Cost: harder academic placement (reserved group) | "Reservations ultimately hurt students belonging to reserved groups when they are placed into a more challenging academic placement" | 5-pt agreement (as above) |
| Benefit: non-reserved-group students | "Reservations ultimately benefit students without reservation groups by promoting diversity in student demographics" | 5-pt agreement (as above) |
| Cost (non-reserved group): fairness vs. merit | "Reservations is an unfair system compared to that based on pure academic merit" | 5-pt agreement (as above) |

*Continued on next page*

*Table A46 continued*

| Item | Survey Question | Scale / Type |
|---|---|---|
| Cost (non-reserved group): academic quality | "Reservations might compromise the academic quality of colleges and universities" | 5-pt agreement (as above) |
| General redistribution belief | "Governments should aim to reduce existing inequalities using more comprehensive social policies" | 5-pt agreement (as above) |
| Merit belief (JEE-Advanced) | "For clearing JEE, only merit and effort matters not socio-economic conditions of the students" | 5-pt agreement (as above) |
| Equality of opportunity (post-entry) | "Opportunities for jobs, participation in student clubs, and academic success is equal for everyone once you enter college" | 5-pt agreement (as above) |
| Support for reservations by domain | "Overall, how much do you support reservations in the following areas?": Elite public universities like IITs, IIMs, AIIMS etc.; Other national institutes like NITs, IIITs etc.; Public sector jobs like IAS, IPS, Engineering service; Other public sector jobs like industries (PSU), state public services etc.; Private sector jobs; Politics (State/Central level); Local elections | 5-pt support: Strongly support / Moderate support / Neutral / Moderate Oppose / Strongly Oppose / DNWA |
| Effect of reservations on own opportunities | "In your view, how have reservation policies in IIT admissions affected your opportunities?" | 5-pt scale: Improved a lot / Somewhat improved / No difference / Reduced somewhat / Reduced a lot / DNWA |
| Hypothetical seat allocation | "Hypothetically, if there are 100 seats to be allocated in a public university with reservations similar to IITs, how would you allocate the seats for different groups below?" (with a follow-up asking how respondents would change the current allocation) | Numeric allocation across groups (sums to 100) / free-text comments |

Table A47: Survey wording: internships

| Item | Survey Question | Scale / Type |
|---|---|---|
| Summer activity, year 2 | "What did you do in the summer of your 2nd year (May - July, 2025)" | Multiple choice, 12 categories (incl. "Other" free text) |
| Summer plans, year 3 (prospective) | "What are your plans in the summer of your 3rd year (May - July, 2026)" | Multiple choice, 12 categories (same list as above) |
| Summer activity, year 1 | "What did you do in the summer after your 1st year?" Instruction: "Select upto 3 activities" | Multiple choice, up to 3 of 11 categories |
| Internship offer obtained | "Did you get an internship offer?" | Single select: No offer / Yes / DNWA |
| Stipend, year 3 internship | "What was your compensation for your third year internship/other activity?" | Single select, 12 categorical R bins (Unpaid to R4 lakhs+) |
| Stipend, year 2 internship | "What was your compensation for your second year summer internship/other activity?" | Single select, 13 categorical R bins (Unpaid to R3 lakhs+) |
| Internship/project counts | "In total how many internships/projects you have done since starting college?" Items: "In person/hybrid internships"; "Fully remote internships"; "Projects in college"; "Projects Outside college" | Numeric entry per item |
| Stipend, year 1 internship | "What was your monthly compensation for the internship/partime job?" | Single select, 11 categorical R bins (Unpaid to R2 lakh+) |
| Stipend, years 1–3 (pooled) | "What was your monthly compensation for the activity?" | Numeric entry; $-100$ = DNWA |
| Pay (activity type ambiguous) | "What was your monthly compensation for the activity?" Instruction: "Any stipend/Scholarship you received for internships/projects" | Numeric entry |

# B A Self-Image Model of Deservedness

## B.1 Setup

Let $\psi \in [0,1]$ be the true share of the caste preparation gap attributable to circumstance rather than ability, and let $\alpha_i$ be student $i$'s support for affirmative action (AA). Each student holds an ego-protective prior $b_i$, the baseline belief that admission reflects merit, which maps into a prior belief $\psi(b_i)$ about $\psi$ with $\psi'(b_i) < 0$. In the spirit of Bénabou and Tirole (2002, 2006), the student does not simply adopt the Bayesian posterior $\psi_i^B$ but chooses, in the style of Alesina and Angeletos (2005),

$$\hat{\psi}_i = \arg\max_{\psi} \Big\{ -e(r_i)\,\psi - \frac{1}{2\kappa}\big(\psi - \psi_i^B\big)^2 \Big\}, \tag{8}$$

where $r_i$ is own academic standing, $e(r_i) \geq 0$ with $e' > 0$ is the ego stake in a low-$\psi$ belief ("I deserve my place"), and $\kappa > 0$ scales malleability. The objective is strictly concave, so the first-order condition gives the equilibrium distortion

$$\hat{\psi}_i = \psi_i^B - \kappa\, e(r_i), \qquad \alpha_i = \alpha_0 + \varphi\, \hat{\psi}_i + \zeta_i, \tag{9}$$

with $\varphi > 0$ and $\mathbb{E}[\zeta_i \mid \cdot] = 0$. The prior and the co-residence signal $z_i$ are normally distributed with precisions $\xi_0$ and $\xi(d_i)$, so the posterior mean is the precision-weighted average

$$\psi_i^B = \big(1 - \ell(d_i)\big)\,\psi(b_i) + \ell(d_i)\, z_i, \qquad \ell(d_i) = \frac{\xi(d_i)}{\xi(d_i) + \xi_0}. \tag{10}$$

Signal precision $\xi$ is increasing in caste distance $d_i$ with $\xi(0) = 0$: a same-caste roommate reveals nothing about the caste gap, so $\ell(0) = 0$ and $\ell' > 0$.

**Assumption 7** (Beliefs are not payoff-relevant)**.** *$\psi_i$ and $\alpha_i$ enter none of the payoff objects in §6.3: neither wellbeing, network capital, internships, nor utility. Support for AA is something a student comes to believe, not something traded off against social time. This severs the beliefs→behavior link: no belief feeds back into chosen social time, so no fixed point arises between what a student believes and how they behave.*

**Assumption 8** (Beliefs update off exposure, not contact)**.** *The signal precision $\xi(d_i)$ and the prior-precision objects $\xi_0^k(c_i)$ depend on the identity of the roommate (caste distance $d_i$) and the student's own caste, not on realized interaction $\tilde{s}_{ij}$. Informativeness is a property of* who *the roommate is, not of* how the pair spend their time*.*

## B.2 Correction of mis-anchored beliefs

**Proposition 4** (Correction of mis-anchored beliefs)**.**

(i) *If standing $r_i$ is pre-assignment ($r_i = \theta_i$), then under (8)–(10) the mixed- versus same-caste contrast in support is*

$$\alpha_i\big|_{d_i>0} - \alpha_i\big|_{d_i=0} = \varphi\, \ell(d_i)\big(z_i - \psi(b_i)\big). \tag{11}$$

*The ego wedge $-\varphi\kappa\, e(r_i)$ is common to both room types and cancels; the contrast is identified purely off the correction channel, and is larger the more strongly anchored the prior (larger $b_i$) and the more caste-distant the roommate.*

(ii) *If standing responds to assignment ($r_i$ includes $g_i$, with $e$ evaluated at expected standing), the contrast acquires a residual,*

$$\Delta\alpha_i = \varphi\,\ell(d_i)\big(z_i - \psi(b_i)\big) - \varphi\kappa\big[e(r_i\big|_{mixed}) - e(r_i\big|_{same})\big]. \tag{12}$$

*For lower-caste students whose expected grade change is positive (the condition in Corollary 1(i)), the residual is negative and the correction is attenuated; for upper-caste students, whose expected grade change is negative (Corollary 1(ii)), the residual is positive and the correction is amplified. The clean contrast (11) therefore understates the upper-caste attitude shift and overstates the lower-caste one.*

Part (ii) implies that the identifying assumption behind (11) is conservative for the paper's main identified result (the upper-caste benefits correction): relaxing it strengthens the predicted shift. For the lower-caste fairness correction, which is already flagged as consistent but not separately identified, (11) is an upper bound.

*Proof of Proposition 4.* *(i)* With $r_i = \theta_i$, standing is fixed by the entrance score and does not depend on room type. Differencing (9) between $d_i > 0$ and $d_i = 0$, the ego wedge $-\varphi\kappa\, e(r_i)$ cancels. By (10) and $\ell(0) = 0$, $\psi_i^B\big|_{d_i=0} = \psi(b_i)$, and the difference of posteriors is $\big[(1-\ell)\psi(b_i) + \ell z_i\big] - \psi(b_i) = \ell(d_i)(z_i - \psi(b_i))$, giving (11). Since $\psi'(b_i) < 0$, larger $b_i$ lowers $\psi(b_i)$ and so raises $z_i - \psi(b_i)$; since $\ell' > 0$, the contrast rises in $d_i$.

*(ii)* From (9), $\alpha_i = \alpha_0 + \varphi\,\psi_i^B - \varphi\kappa\, e(r_i) + \zeta_i$. Differencing across room types,

$$\Delta\alpha_i = \varphi\big[\psi_i^B\big|_{\text{mixed}} - \psi_i^B\big|_{\text{same}}\big] - \varphi\kappa\big[e(r_i\big|_{\text{mixed}}) - e(r_i\big|_{\text{same}})\big].$$

The first term is $\varphi\,\ell(d_i)(z_i - \psi(b_i))$ as in part (i). For the second, $e' > 0$, so the sign of $e(r_i|_{\text{mixed}}) - e(r_i|_{\text{same}})$ is the sign of $r_i|_{\text{mixed}} - r_i|_{\text{same}}$. If $r_i$ includes $g_i$, then for a lower-caste student with a positive expected net grade effect, $r_i|_{\text{mixed}} > r_i|_{\text{same}}$ and the residual $-\varphi\kappa[\cdot] < 0$: the correction is attenuated. For an upper-caste student the expected grade change is negative, the inequality reverses, and $-\varphi\kappa[\cdot] > 0$: the correction is amplified. □

### B.3 Which dimension moves

$\psi$ is a single parameter, but deservedness has two sides a student forms views about: whether the policy corrects a real disadvantage (benefits) and whether one's own place is deserved (fairness). Co-residence delivers a single signal $z_i$ about $\psi$; the question is whether students with different starting positions update on different dimensions. Before co-residence, each student already holds relatively precise priors about the dimension they have lived. Co-residence reveals the roommate's circumstances $A_j$ (family resources, schooling quality, daily life behind the score) which,

alongside the already-known $\theta_j$, lets the student update the production function $\theta = f(\text{ability}, A)$ and hence $\psi$. But this update moves beliefs only on the dimension where the prior was imprecise.

Let $\xi_0^k(c_i)$ denote student $i$'s prior precision on dimension $k \in \{ben, fair\}$, reflecting accumulated knowledge from living on side $c_i$ of the gap. The posterior weight co-residence receives on dimension $k$ is

$$\ell^k(d_i, c_i) = \frac{\xi(d_i)}{\xi(d_i) + \xi_0^k(c_i)}, \tag{13}$$

and the update on dimension $k$ is

$$\Delta\alpha_i^k = \varphi^k \, \ell^k(d_i, c_i)\big(z_i - \psi(b_i)\big), \qquad \varphi^k > 0. \tag{14}$$

The prior-precision ordering follows from which side of the gap each group has lived:

$\xi_0^{ben}(L) > \xi_0^{ben}(U)$ : lower-caste students have direct experience of disadvantage.

$\xi_0^{fair}(U) > \xi_0^{fair}(L)$ : upper-caste students were not admitted through AA, so the fairness of their own place is settled by the admissions process itself.

These are informational endowments implied by the institutional structure and Assumption 1, not behavioral assumptions about motivated reasoning.

**Proposition 5** (Dimension-specific updating)**.** *Under* (13)–(14) *and the prior-precision ordering above, holding $z_i - \psi(b_i) > 0$ and $d_i$ fixed across castes:*

(i) $\Delta\alpha_U^{ben} > \Delta\alpha_L^{ben}$*: the benefits correction is larger for upper-caste students.*

(ii) $\Delta\alpha_L^{fair} > \Delta\alpha_U^{fair}$*: the fairness correction is larger for lower-caste students.*

(iii) *The two corrections move the between-caste support gap in opposite directions on the two dimensions. With $G^k \equiv \alpha_U^k - \alpha_L^k$,*

$$\Delta G^{ben} = \Delta\alpha_U^{ben} - \Delta\alpha_L^{ben} > 0, \qquad \Delta G^{fair} = \Delta\alpha_U^{fair} - \Delta\alpha_L^{fair} < 0.$$

*If upper-caste students start less supportive on benefits and lower-caste students more supportive on fairness (an empirical premise, not implied by the model), the benefits gap closes and the fairness gap widens. The net effect on overall support is not signed and depends on $\varphi^{ben}[\ell^{ben}(d, U) - \ell^{ben}(d, L)]$ versus $\varphi^{fair}[\ell^{fair}(d, L) - \ell^{fair}(d, U)]$.*

The opposite-sign prediction of part (iii) is the sharpest testable restriction the model produces on attitudes: an exposure-only specification predicts a common shift across dimensions and cannot generate $\Delta G^{ben} > 0 > \Delta G^{fair}$. The split vanishes when prior knowledge is symmetric ($\xi_0^k(U) = \xi_0^k(L)$), so students with prior cross-caste contact, who may have relatively symmetric priors, should show an attenuated dimensional asymmetry.

**Remark** (General $\psi$)**.** *The belief $\psi$ is modeled as learning about the production function $\theta = f(\text{ability}, A)$, not just the caste gap per se. Any co-residence pairing with $d_{ij} > 0$ delivers information about $f$, including within caste.*

*Proof of Proposition 5.* Fix the correction size $z_i - \psi(b_i) > 0$ and caste distance $d_i$. By (14), $\Delta\alpha_i^k = \varphi^k \, \ell^k(d_i, c_i)(z_i - \psi(b_i))$, where $\ell^k$ is strictly decreasing in $\xi_0^k(c_i)$: $\partial \ell^k / \partial \xi_0^k = -\xi(d_i)/(\xi(d_i)+\xi_0^k)^2 < 0$.

(i) $\xi_0^{ben}(L) > \xi_0^{ben}(U)$ implies $\ell^{ben}(d, L) < \ell^{ben}(d, U)$. Since $\varphi^{ben} > 0$ and the correction size is common, $\Delta\alpha_U^{ben} > \Delta\alpha_L^{ben}$.

(ii) $\xi_0^{fair}(U) > \xi_0^{fair}(L)$ implies $\ell^{fair}(d, U) < \ell^{fair}(d, L)$, hence $\Delta\alpha_L^{fair} > \Delta\alpha_U^{fair}$.

(iii) The change induced by mixing is

$$\Delta G^k = \Delta\alpha_U^k - \Delta\alpha_L^k = \varphi^k \big[\ell^k(d, U) - \ell^k(d, L)\big]\big(z_i - \psi(b_i)\big).$$

For benefits the bracket is positive by (i), so $\Delta G^{ben} > 0$. For fairness the bracket is negative by (ii), so $\Delta G^{fair} < 0$. The opposite signs are a joint implication of the prior-precision ordering. An exposure-only specification, which delivers a common shift $\Delta\alpha$ across dimensions, predicts $\Delta G^{ben}$ and $\Delta G^{fair}$ of the same sign, so the opposite-sign pattern distinguishes the correction model from a pure dose-response. Whether the gap on a dimension closes or widens in levels depends on its baseline sign, which the model does not determine. The net effect $\Delta G = \Delta G^{ben} + \Delta G^{fair}$ is unsigned: it depends on the two magnitudes in the statement, which the model does not rank.

For the attenuation prediction, $\ell^{ben}(d, U) - \ell^{ben}(d, L) = \xi(d)\big[\xi_0^{ben}(L) - \xi_0^{ben}(U)\big] / \big[(\xi + \xi_0^{ben}(U))(\xi + \xi_0^{ben}(L))\big]$ is proportional to the precision gap and vanishes with it, and likewise for fairness. Prior cross-caste contact raises the precision of the otherwise imprecise dimension, narrowing the gap and compressing both brackets toward zero. □

# C Proofs for Section 6

## C.1 Notation and maintained conditions

For student $i$ with roommate $j$, write $\chi_i \equiv \chi_{c_i}(d_{ij})$, $\tau_i \equiv \lambda_{ij} - \iota_i$ and $B_i(s) = \iota_i + \tau_i s$. Bridging has two sources: the room-sourced part, $(1 - \lambda_{ij})s$, is valued at the roommate's network return $\pi_{ij}$, and the club-sourced part, $(1 - \iota_i)(1 - s)$, at a constant $\pi_{c,i} \geq 0$, the value of the network reached outside the room. The constant $\pi_{c,i}$ does not depend on anyone's time allocation (price taking: clubs are large relative to any one student's participation, and random assignment moves club composition negligibly). It may differ across students through access, for example taking a lower value for club-excluded students. Network capital is

$$N_i = A_i + V_i, \qquad V_i \equiv \pi_{ij}(1 - \lambda_{ij})s + \pi_{c,i}(1 - \iota_i)(1 - s) \geq 0,$$

where $V_i$ is the value of bridging; $V_i = \pi_{ij} R_i$ if $\pi_{c,i} = \pi_{ij}$. Network capital is affine in $s$ with slope $\kappa_i \equiv \pi_{ij}(1 - \lambda_{ij}) - \pi_{c,i}(1 - \iota_i)$. Since belonging is also affine in $s$, for $\tau_i \neq 0$ utility (7) equals

$\Phi_i(B_i(s)) - \chi_i s$ plus terms that do not depend on contact $s$, where

$$\Phi_i(B) \equiv v(B) - \pi_{\text{eff},i}\, B - c(1-B;\Delta_i), \qquad \pi_{\text{eff},i} \equiv -\frac{\kappa_i}{\tau_i} = \frac{\pi_{c,i}(1-\iota_i) - \pi_{ij}(1-\lambda_{ij})}{\tau_i} = \pi_{ij} + \frac{(\pi_{c,i} - \pi_{ij})(1-\iota_i)}{\tau_i}.$$

The effective return $\pi_{\text{eff},i}$ is the network value gained per unit of belonging given up. It equals $\pi_{ij}$ if $\pi_{c,i} = \pi_{ij}$, equals $\pi_{c,i}$ in a same-caste room ($\lambda_{ij} = 1$), and may be negative when room time carries more network value than club time. Hence $\Phi_i'(B) = v'(B) + c_R(1-B;\Delta_i) - \pi_{\text{eff},i}$, where $c_R$ is the derivative of $c$ in its first argument and $c_{R\Delta}$ the cross-partial. Own advantage $A_i$ and grades $g_i$ are fixed by the assignment. The knife-edge $\tau_i = 0$ is set aside. The main text sets $\pi_{c,i} = \pi_{ij}$, a single return to bridging whatever the venue; the proofs below allow $\pi_{c,i}$ to differ, and Remark C.3 lists what simplifies in the baseline. The proofs use the following conditions, all of which are stated in the assumptions of the main text.

(M1) $v$ is strictly concave and increasing; $c$ is twice continuously differentiable, increasing and convex in $R$, so $\Phi_i'' = v'' - c_{RR} < 0$ (Assumption 3).

(M2) $c(0;\Delta) = c_R(0;\Delta) = 0$ and $c_{R\Delta} \geq 0$ for all $\Delta$; hence $c_\Delta(0;\Delta) = 0$ and $c_R$ is increasing in both arguments (Assumption 3).

(M3) $\pi(\cdot) \geq 0$ is nondecreasing; the club network values satisfy $\pi_{c,i} \geq 0$ and are constants; $\chi_c(d) \geq 0$ with $\chi_c(0) = 0$; $A_i \geq 0$ (Assumptions 3 and 5). The ordering of club and roommate network values stated in the main text, $\bar{\pi}_L \leq \mathbb{E}[\pi_{c,i}] \leq \bar{\pi}_U$, is not used in any proof.

(M4) Club alignment satisfies $\iota_i \in [0,1)$, is nondecreasing in advantage within caste, and $\iota(U,x) > \iota(L,x)$ at every advantage level $x$ (Assumption 2); club-excluded students have $\iota_i = 0$ and club-access thresholds satisfy $\underline{A}_L \geq \underline{A}_U$ (Assumption 6).

(M5) Within a room type, the roommate is drawn independently of the student's own characteristics, conditional on the pairing of castes (random assignment, §6.1).

(M6) $\pi(A) \leq v'(1)$ on the support of lower-caste advantage, and $\pi_{c,i} \leq v'(1)$ for lower-caste students (Assumption 4). No such restriction is imposed for upper-caste students.

With (M4), effective alignment is $\iota_i = \iota(c_i, A_i)\mathbb{1}[A_i \geq \underline{A}_{c_i}]$, nondecreasing in $A_i$ within caste, and $\iota(U,x) \geq \iota(L,x)$ at every advantage level $x$ (for $x \in [\underline{A}_U, \underline{A}_L)$ the upper-caste student is club-capable and the lower-caste student is excluded).

## C.2 Grades

*Proof of Proposition 1.* Take expectations of (5) conditional on room type; the noise term integrates to zero.

*Same-caste baseline.* In a same-caste room, $\lambda_{ij} = 1$ and $d_{ij} = 0$. Two students drawn from the same caste distribution satisfy $\Pr(\theta_j > \theta_i \mid \text{both caste } c) = 1/2$ by symmetry, so

$$\mathbb{E}\big[(\theta_j - \theta_i)_+ \mid \text{both } c\big] = \tfrac{1}{2}\,\delta_c,$$

and $\mathbb{E}[g_i \mid \text{same-caste}] = \theta_i + \beta \cdot \frac{1}{2} \cdot \delta_c$.

*Mixed room.* For a lower-caste student $i$ with an upper-caste roommate $j$, the event $\{\theta_j > \theta_i\}$ has probability $p$ (defined in (3)) and conditional gap $\delta$, so $\mathbb{E}[(\theta_j - \theta_i)_+ \mid i \text{ lower-caste, mixed}] = p\,\delta$. Hence $\mathbb{E}[g_i \mid \text{mixed}] = \theta_i + \beta\lambda_{ij} p\,\delta - \mu_L d_{ij}$, and the contrast against the same-caste baseline is

$$\mathbb{E}[g_i \mid \text{mixed}] - \mathbb{E}[g_i \mid \text{same-caste}] = \beta\big[\lambda_{ij}\,p\,\delta - \delta_L/2\big] - \mu_L d_{ij},$$

giving (i). For an upper-caste student $i$, $(\theta_j - \theta_i)_+ > 0$ only on the reversal event, with probability $1 - p$ and conditional gap $\delta'$:

$$\mathbb{E}[g_i \mid \text{mixed}] - \mathbb{E}[g_i \mid \text{same-caste}] = \beta\big[\lambda_{ij}(1-p)\delta' - \delta_U/2\big] - \mu_U d_{ij},$$

giving (ii). The transmission part of the upper-caste bracket is negative whenever $\lambda_{ij}(1-p)\delta' < \delta_U/2$: cross-caste transmission is weighted by the reversal probability $1 - p$ and discounted by $\lambda_{ij} < 1$, while the forgone within-caste transmission $\delta_U/2$ is subtracted in full. This holds in the limit $p \to 1$ (Corollary 1) and under the empirical magnitudes below; it is not implied by the model's assumptions alone.

*Empirical magnitudes.* The between-caste gap $\Delta\theta$ is slightly greater than one within-type standard deviation of the entrance-score distribution, so $p \in [0.85, 0.90]$ (see Table [*]). Reversals occur in the overlap region where scores are close, implying $\delta' \ll \delta$ and, a fortiori, $(1-p)\delta' \ll p\,\delta$. Within-caste upward gaps $\delta_c$ are bounded above by the within-type standard deviation, which is substantially smaller than the cross-caste gap $\delta$; accordingly $\delta_L/2$ is small relative to $\lambda_{ij} p\,\delta$. The composites $\beta[\lambda_{ij} p\,\delta - \delta_L/2]$ and $\beta[\lambda_{ij}(1-p)\delta' - \delta_U/2]$ are what the reduced-form grade regressions estimate; the individual objects $\delta$, $\delta'$, $\delta_c$ are not separately identified from $\beta$ and $\lambda_{ij}$. □

*Proof of Corollary 1.* Set $p = 1$ in Proposition 1.

*(i)* The lower-caste contrast becomes $\beta[\lambda_{ij}\delta - \delta_L/2] - \mu_L d_{ij}$. Since $\beta > 0$ and $\delta > 0$, it is positive if and only if $\lambda_{ij} > \delta_L/(2\delta) + \mu_L d_{ij}/(\beta\delta)$. Equivalently, the discounted return to cross-caste transmission, $\beta\lambda_{ij}\delta$, exceeds the sum of the opportunity cost of forgone within-caste transmission, $\beta\delta_L/2$, and the social-mixing cost, $\mu_L d_{ij}$. Setting $\mu_L d_{ij} = 0$ gives the transmission-only threshold $\lambda_{ij} > \delta_L/(2\delta)$, and any positive mixing cost raises the threshold strictly. The right-hand side must be below 1 for the inequality to be satisfiable, i.e. $\delta_L/2 + \mu_L d_{ij}/\beta < \delta$.

*(ii)* With $1 - p = 0$, the upper-caste contrast becomes $-\beta\delta_U/2 - \mu_U d_{ij}$, which is negative for every $\lambda_{ij} \in (0, 1]$ whenever $\delta_U > 0$ or $\mu_U d_{ij} > 0$, since $\beta > 0$ and $\mu_U \geq 0$.

*Illustrative magnitudes (back-of-envelope).* With $\delta \approx 60$ and $\delta_L \approx 38$, $\delta_L/(2\delta) \approx 0.32$, so transmission alone is positive as long as roommate alignment preserves roughly a third of full same-caste

alignment. This is only the opportunity-cost term: $\mu_L$, $d_{ij}$ and $\beta$ are not pinned down here, so these numbers do not establish that the net threshold is cleared. □

**Remark** (Heterogeneity of the transmission loss in own score). *Let $H_c(x) \equiv \mathbb{E}[(\theta - x)_+ \mid c] = \int_x^\infty \big(1 - F_c^\theta(t)\big)dt$ be the expected upward gap above score $x$ in caste $c$, with $F_c^\theta$ the distribution of $\theta \mid c$. For an upper-caste student with score $\theta_i = x$, the transmission term of equation (5) averages $\beta H_U(x)$ in a same-caste room and $\beta\lambda_M H_L(x)$ in a mixed room, so the forgone transmission is*

$$T(x) \equiv \beta\big[H_U(x) - \lambda_M H_L(x)\big] \geq \beta(1-\lambda_M)H_U(x) \geq 0,$$

*where the inequality uses $H_L \leq H_U$, which follows from first-order stochastic dominance of $\theta \mid U$ over $\theta \mid L$ (Assumption 1). Moreover $T$ is weakly decreasing in $x$: $T'(x) = -\beta\big[(1 - F_U^\theta(x)) - \lambda_M(1 - F_L^\theta(x))\big] \leq -\beta(1-\lambda_M)(1 - F_U^\theta(x)) \leq 0$, using $F_L^\theta \geq F_U^\theta$. The mixing cost $\mu_U d_M$ does not depend on $x$. The model therefore predicts that the upper-caste grade loss from forgone transmission is largest for students with low own scores and falls with own score, on top of a constant $\mu_U d_M$. A supermodular complementarity between own and roommate scores, which is not in the model, would instead make the loss rise with own score.*

### C.3 The social life of integration

**Lemma 1** (Allocation of time). *Fix student $i$ with roommate $j$ and $\tau_i \neq 0$, and let*

$$\bar{B}_i \equiv \max\{\lambda_{ij},\, \iota_i + \tau_i \underline{s}\}, \qquad B_i^{lo} \equiv \min\{\lambda_{ij},\, \iota_i + \tau_i \underline{s}\}.$$

(a) *Choosing $s \in [\underline{s}, 1]$ is equivalent to choosing belonging $B \in [B_i^{lo}, \bar{B}_i]$ to maximize $\Phi_i(B) - (\chi_i/\tau_i)B$, a strictly concave problem. Here $\bar{B}_i = \lambda_{ij}$ if $\tau_i > 0$ (reached at $s = 1$) and $\bar{B}_i = \iota_i(1 - \underline{s}) + \lambda_{ij}\underline{s}$ if $\tau_i < 0$ (reached at $s = \underline{s}$).*

(b) *Let $B_i^\chi$ maximize $\Phi_i(B) - (\chi_i/\tau_i)B$ over $[0,1]$: it solves $\Phi_i'(B_i^\chi) = \chi_i/\tau_i$ when interior, and equals the frictionless optimum $B_i^\dagger$ ($v' + c_R = \pi_{\text{eff},i}$) when $\chi_i = 0$. Then $B_i^* = \min\{\max\{B_i^\chi, B_i^{lo}\}, \bar{B}_i\}$.*

(c) *Define $\underline{\pi}_i \equiv v'(\bar{B}_i) + c_R(1 - \bar{B}_i; \Delta_i) - \chi_i/\tau_i$. Then $B_i^\chi \geq \bar{B}_i$ if and only if $\pi_{\text{eff},i} \leq \underline{\pi}_i$. In that case the student is at their ceiling: $s_i^* = 1$ if $\tau_i > 0$ and $s_i^* = \underline{s}$ if $\tau_i < 0$.*

*Proof.* (a) Utility equals $\Phi_i(B_i(s)) - \chi_i s$ plus terms independent of $s$. For $\tau_i \neq 0$, $B_i(s)$ is affine and strictly monotone, so $s = (B - \iota_i)/\tau_i$ and $-\chi_i s = -(\chi_i/\tau_i)B + \chi_i\iota_i/\tau_i$. The interval $s \in [\underline{s}, 1]$ maps to the interval between $B_i(\underline{s}) = \iota_i + \tau_i\underline{s}$ and $B_i(1) = \lambda_{ij}$. If $\tau_i > 0$, $\iota_i + \tau_i\underline{s} \leq \lambda_{ij}$; if $\tau_i < 0$ the inequality reverses. Strict concavity follows from $\Phi_i'' < 0$ (M1) and linearity of the friction term.

(b) A strictly concave function on an interval is maximized at the projection of its unconstrained maximizer on the interval.

(c) $\Phi_i'(B) - \chi_i/\tau_i$ is strictly decreasing, so the maximizer over $[0,1]$ satisfies $B_i^\chi \geq \bar{B}_i$ if and only if $\Phi_i'(\bar{B}_i) \geq \chi_i/\tau_i$. Substituting $\Phi_i'(\bar{B}_i) = v'(\bar{B}_i) + c_R(1 - \bar{B}_i; \Delta_i) - \pi_{\text{eff},i}$ gives $\pi_{\text{eff},i} \leq \underline{\pi}_i$. The ceiling is the point $B_i(1)$ if $\tau_i > 0$ and $B_i(\underline{s})$ if $\tau_i < 0$. □

**Regimes.** Student $i$ is *belonging-seeking* if $\pi_{\text{eff},i} \le \underline{\pi}_i$, and *bridging-seeking* (interior) if $\underline{s} < s_i^* < 1$ at an interior solution of the first-order condition. By Lemma 1(c), the belonging-seeking regime is exactly the set of students who are bonding-constrained in the sense of §C.6. In a same-caste room $\lambda_{ij} = 1$, $\chi_i = 0$, $\tau_i = 1 - \iota_i > 0$, $\bar{B}_i = 1$ and $\pi_{\text{eff},i} = \pi_{c,i}$, so by (M2) the regime condition is $\pi_{c,i} \le v'(1)$, which Assumption 4 guarantees in lower-caste same-caste rooms. In upper-caste same-caste rooms the condition can fail, in which case the student bridges (Lemma 3). In a mixed room the condition is not automatic for any group. For a room-oriented student it reads $\pi_{c,i}(1-\iota_i) - \pi_{ij}(1-\lambda_M) \le \tau_i\big[v'(\lambda_M) + c_R(1-\lambda_M;\Delta_i)\big] - \chi_i$, and for a club-oriented student $\pi_{ij}(1-\lambda_M) - \pi_{c,i}(1-\iota_i) \le |\tau_i|\big[v'(\bar{B}_i) + c_R(1-\bar{B}_i;\Delta_i)\big] + \chi_i$: the network value of room time must not exceed the belonging the student gives up, net of friction.

**Lemma 2** (Contact and belonging in the belonging-seeking regime)**.** *Suppose both members of a pair are belonging-seeking. Then desired contact is $s_i^* = 1$ if $\tau_i > 0$ and $s_i^* = \underline{s}$ if $\tau_i \le 0$, and realized contact is $\tilde{s}_{ij} = \min\{s_i^*, s_j^*\}$. In a mixed room, where $\tau_i > 0$ means $i$ is room-oriented (Definition 4) and $\tau_i \le 0$ club-oriented:*

(a) *both room-oriented: $\tilde{s}_{ij} = 1$ and $B_i = \lambda_M$;*

(b) *$i$ room-oriented, $j$ club-oriented: $\tilde{s}_{ij} = \underline{s}$ and $B_i = \iota_i(1-\underline{s}) + \lambda_M\underline{s} < \lambda_M$, equal to $\lambda_M\underline{s}$ if $i$ is club-excluded;*

(c) *$i$ club-oriented: $\tilde{s}_{ij} = \underline{s}$ and $B_i = \iota_i(1-\underline{s}) + \lambda_M\underline{s} \ge \lambda_M$.*

*In a same-caste room both students have $\tau > 0$. If both are belonging-seeking, as under Assumption 4 in lower-caste rooms, then $\tilde{s}_{ij} = 1$, $B_i = 1$, $R_i = 0$, $S_i = v(1)$ and $N_i = A_i$.*

*Proof.* Desired contact follows from Lemma 1(c). Realized belonging is $B_i = \iota_i + \tau_i\tilde{s}_{ij}$. In (a), $\tilde{s}_{ij} = \min\{1,1\} = 1$ and $B_i = \lambda_M$. In (b) and (c), at least one student wants $\underline{s}$, so $\tilde{s}_{ij} = \underline{s}$ and $B_i = \iota_i + \tau_i\underline{s} = \iota_i(1-\underline{s}) + \lambda_M\underline{s}$. This is strictly below $\lambda_M$ when $\tau_i > 0$ (because $\underline{s} < 1$) and at least $\lambda_M$ when $\iota_i \ge \lambda_M$. Same-caste rooms follow from $\lambda_{ij} = 1$, $\iota_i < 1$ (M4) and $\chi_i = 0$ with $c(0;\cdot) = 0$. □

*Proof of Proposition 2.* Let $C_i = v(1) - S_i^{\text{mixed}}$ denote the cost relative to full belonging, which equals $S_i^{\text{same}} - S_i^{\text{mixed}}$ whenever the student attains full belonging in a same-caste room, as lower-caste students do under Assumption 4. In the mixed room the regime of Lemma 2 holds by the maintained condition of part (ii), so

$$C_i = \big[v(1) - v(B_i)\big] + c(1-B_i;\Delta_i) + \chi_i\tilde{s}_{ij},$$

where the three terms are the belonging loss, the bridging cost (which includes the preparation-gap premium $c(R;\Delta_i) - c(R;0)$) and the friction. All three are nonnegative and the cost is decreasing in $B_i$ at fixed $\tilde{s}_{ij}$ and $\Delta_i$.

*Part (i).* Let $\iota_i = \iota(c_i, A_i) \nVdash [A_i \geq \underline{A}_{c_i}]$ be effective alignment. Student $i$ is room-oriented if and only if $A_i \in D_c \equiv \{x : \iota(c,x) \nVdash [x \geq \underline{A}_c] < \lambda_M\}$, a down-set since effective alignment is nondecreasing in $x$. By (M4), $\iota(U,x) \geq \iota(L,x)$ at every advantage level $x$, so $\iota(L,x) < \lambda_M$ whenever $\iota(U,x) < \lambda_M$, i.e. $D_U \subseteq D_L$. Let $F_c$ be the advantage distribution of caste $c$. Then

$$F_L(D_L) \geq F_L(D_U) \geq F_U(D_U),$$

the first step because $D_U \subseteq D_L$ and the second by first-order stochastic dominance of $A \mid U$ over $A \mid L$ (Assumption 1), which gives $F_L(D) \geq F_U(D)$ for every down-set $D$. The share room-oriented is $F_c(D_c)$, so it is weakly larger for lower-caste students.

*Part (ii).* Fix a caste and a preparation gap $\Delta$; all students below share $\chi = \chi_c(d_M)$. Write $C_a$, $C_b$, $C_c$ for the cost in cases (a), (b), (c) of Lemma 2. In (b) and (c), $\tilde{s}_{ij} = \underline{s}$ and $C$ is the same decreasing function of $B$, with $B_b < \lambda_M \leq B_c$; hence $C_b > C_c$. For (a) against (c),

$$C_a - C_c = \big[v(B_c) - v(\lambda_M)\big] + \big[c(1-\lambda_M;\Delta) - c(1-B_c;\Delta)\big] + \chi(1-\underline{s}) \geq 0,$$

since $B_c \geq \lambda_M$ and $\underline{s} < 1$. For (b) against (a), take a student in case (b), who is belonging-seeking with $\tau_i > 0$, so $G_i'(1) = \tau_i \Phi_i'(\lambda_M) - \chi \geq 0$ and, by concavity of $G_i(s) = \Phi_i(B_i(s)) - \chi s$, $G_i$ is increasing on $[\underline{s}, 1]$. Hence $G_i(1) \geq G_i(\underline{s})$, i.e. $\Phi_i(\lambda_M) - \chi \geq \Phi_i(B_b) - \chi\underline{s}$. Expanding $\Phi_i(B) = v(B) - \pi_{\text{eff},i} B - c(1-B;\Delta_i)$,

$$\big[v(\lambda_M) - v(B_b)\big] + \big[c(1-B_b;\Delta) - c(1-\lambda_M;\Delta)\big] - \chi(1-\underline{s}) \geq \pi_{\text{eff},i}(\lambda_M - B_b).$$

The left side equals $C_b - C_a$. These comparisons hold the student's own type and $\pi_{ij}$ fixed, varying only the roommate's willingness to match. If $\pi_{\text{eff},i} \geq 0$, that is if $\pi_{c,i}(1-\iota_i) \geq \pi_{ij}(1-\lambda_M)$ (club time carries at least the bridging value of room time), then $C_b - C_a \geq 0$. Together, $C_b \geq C_a \geq C_c$: the cost is weakly larger for room-oriented than for club-oriented students, and largest when the roommate is club-oriented. The inequalities $C_a \geq C_c$ and $C_b > C_c$ do not use $\pi_{\text{eff},i}$. If $\pi_{\text{eff},i} < 0$, room time carries more network value than club time, the student accepts friction in the room partly for network capital, and a roommate's withdrawal saves friction, so $C_b - C_a$, which equals the left side above, is not signed without a bound on the friction $\chi(1-\underline{s})$ relative to the belonging and bridging-cost loss. The same inequality gives the wellbeing statement: since $S_i^{\text{same}}$ is unchanged, $S_b \leq S_a - \pi_{\text{eff},i}(\lambda_M - B_b)$, so for $\pi_{\text{eff},i} \geq 0$ a room-oriented student's wellbeing weakly falls, strictly if $\pi_{\text{eff},i} > 0$, once their roommate withdraws. A roommate withdraws if and only if $\tau_j \leq 0$, i.e. $\iota_j \geq \lambda_M$. Network capital changes by $V_b - V_a = (1-\underline{s})\big[\pi_{c,i}(1-\iota_i) - \pi_{ij}(1-\lambda_M)\big] = (1-\underline{s})\tau_i \pi_{\text{eff},i}$, which has the sign of $\pi_{\text{eff},i}$; if $\pi_{c,i} = \pi_{ij}$ it equals $\pi_{ij}(\lambda_M - \iota_i)(1-\underline{s}) \geq 0$.

For a club-oriented student, $1 - B_c = (1-\iota_i) + (\iota_i - \lambda_M)\underline{s} \to \underline{s}(1-\lambda_M)$ as $\iota_i \to 1$, so the belonging loss is bounded by $v'(B_c)(1-B_c)$ by concavity and is first order in $(1-\iota_i)$ and $\underline{s}$, as is the friction $\chi\underline{s}$. By (M2), $c(R;\Delta) \leq \frac{1}{2}\bar{c}\,R^2$ with $\bar{c} = \sup c_{RR}$, so the bridging cost is second order. For high alignment, therefore, the cost is small and arises from the minimum level of forced contact.

The three components cannot be ranked in general for room-oriented students: in case (a) the cost is $[v(1) - v(\lambda_M)] + c(1 - \lambda_M; \Delta) + \chi$, and the model does not order these terms.

*Part (iii).* Suppose student $i$'s optimum is interior, $\underline{s} < s_i^* < 1$, and realized, $\tilde{s}_{ij} = s_i^*$ (the partner is willing to match). Then $\Phi_i'(B^*) = \chi_i/\tau_i$, i.e. $v'(B^*) + c_R(1 - B^*; \Delta_i) = \chi_i/\tau_i + \pi_{\text{eff},i}$. For any parameter $\vartheta$ that shifts only $\pi_{\text{eff},i}$, differentiation gives $\Phi_i'' \, dB^*/d\vartheta = \partial \pi_{\text{eff},i}/\partial \vartheta$, so $dB^*/d\vartheta = (1/\Phi_i'') \, \partial \pi_{\text{eff},i}/\partial \vartheta$ and $dR^*/d\vartheta = -dB^*/d\vartheta$. For wellbeing $S_i = v(B) - c(1 - B; \Delta_i) - \chi_i s$, using $ds^* = dB^*/\tau_i$ and $v' + c_R = \chi_i/\tau_i + \pi_{\text{eff},i}$ at the optimum,

$$dS_i = \big[v' + c_R - \chi_i/\tau_i\big] dB^* = \pi_{\text{eff},i} \, dB^* = -\pi_{\text{eff},i} \, dR_i.$$

At the margin the wellbeing loss therefore equals the effective value of the bridging gained. The sources of variation are $\pi_{c,i}$ and $\pi_{ij}$, with $\partial \pi_{\text{eff},i}/\partial \pi_{c,i} = (1 - \iota_i)/\tau_i$ and $\partial \pi_{\text{eff},i}/\partial \pi_{ij} = -(1 - \lambda_M)/\tau_i$. For a room-oriented student ($\tau_i > 0$), bridging rises in the club network value $\pi_{c,i}$ and falls in the roommate's network value $\pi_{ij}$, so if $\pi_{\text{eff},i} > 0$ wellbeing falls in $\pi_{c,i}$ and rises in $\pi_{ij}$. For a club-oriented student ($\tau_i < 0$) both signs reverse. Network capital is $N_i = A_i + \pi_{c,i}(1 - \iota_i) + \kappa_i s$ with $\kappa_i = -\tau_i \pi_{\text{eff},i}$, so through the reallocation it changes by $\kappa_i \, ds^* = -\pi_{\text{eff},i} \, dB^* = \pi_{\text{eff},i} \, dR^*$, plus the direct effects $(1 - \iota_i)(1 - s^*) \, d\pi_{c,i}$ and $(1 - \lambda_M) s^* \, d\pi_{ij}$. In the club network value this is positive for a room-oriented student with $\pi_{\text{eff},i} \geq 0$; in the roommate's network value the reallocation effect is negative and the sign is ambiguous. The regime requires $\pi_{\text{eff},i} > \underline{\pi}_i$, whose explicit form for each orientation is given in the discussion of regimes.

*Part (iv).* Under the regime, belonging $B_i$ in Lemma 2 does not depend on $\theta_j$, so

$$\frac{\partial S_i}{\partial \theta_j} = -c_\Delta(1 - B_i; \Delta_i) \mathbb{1}[\theta_j > \theta_i] \leq 0,$$

and the regime persists as $\theta_j$ rises, since $\Phi_i'$ contains $c_R(1 - \bar{B}_i; \Delta_i)$, which is nondecreasing in $\Delta_i$ by $c_{R\Delta} \geq 0$. Wellbeing therefore falls in the roommate's score exactly on pairs in which the roommate outscores the student, which for lower-caste students occurs with probability $p$ and for upper-caste students only on the reversal event, with probability $1 - p$; on all other pairs the slope is zero. The slope is steeper for room-oriented students because $c_\Delta(R; \Delta)$ is nondecreasing in $R$ by $c_{R\Delta} \geq 0$ and $1 - B_i$ is larger in cases (a) and (b) than in case (c): $1 - B_a = 1 - \lambda_M$, $1 - B_b > 1 - \lambda_M$ and $1 - B_c \leq 1 - \lambda_M$. □

**Remark** (Baseline specification: a single return to bridging)**.** *The main text sets $\pi_{c,i} = \pi_{ij}$, so that $V_i = \pi_{ij} R_i$ and $\pi_{\text{eff},i} = \pi_{ij} \geq 0$. Then the following statements used in the main text hold.*

(a) *Every club-oriented student in a mixed room whose roommate satisfies $\pi_{ij} \leq v'(1)$ is belonging-seeking, so the belonging-seeking condition in Proposition 2(ii) holds automatically for them.*

(b) *The cost ordering in Proposition 2(ii) holds without further condition, including that the cost is largest when the roommate is club-oriented, and a roommate's withdrawal lowers wellbeing and raises network capital by $\pi_{ij}(\lambda_M - \iota_i)(1 - \underline{s}) \geq 0$.*

(c) *For roommates with $\pi_{ij} \leq v'(1)$, the bridging-seeking regime of Proposition 2(iii) is restricted to room-oriented students with $\chi_i/\tau_i > v'(\lambda_M) + c_R(1-\lambda_M;\Delta_i) - \pi_{ij} > 0$. In it, $dB^*/d\pi_{ij} = 1/\Phi_i'' < 0$, $dR^*/d\pi_{ij} > 0$, $dN_i/d\pi_{ij} = R_i - \pi_{ij}/\Phi_i'' > 0$ and $dS_i = -\pi_{ij}\, dR_i < 0$.*

*Proof of Remark C.3.* (a) For a club-oriented student, $\tau_i < 0$ and $\bar{B}_i = \iota_i(1-\underline{s}) + \lambda_M \underline{s} < 1$, because $\iota_i < 1$ and $\lambda_M < 1$. Hence $\underline{\pi}_i = v'(\bar{B}_i) + c_R(1-\bar{B}_i;\Delta_i) + \chi_i/|\tau_i| \geq v'(\bar{B}_i) > v'(1) \geq \pi_{ij} = \pi_{\text{eff},i}$, using strict concavity of $v$ and $\pi_{ij} \leq v'(1)$. (b) is the proof of Proposition 2(ii) with $\pi_{\text{eff},i} = \pi_{ij} \geq 0$. (c) For a club-oriented student, (a) gives $\pi_{ij} \leq \underline{\pi}_i$. For a room-oriented student, $\bar{B}_i = \lambda_M$, so $\pi_{ij} > \underline{\pi}_i$ requires $\chi_i/\tau_i > v'(\lambda_M) + c_R(1-\lambda_M;\Delta_i) - \pi_{ij} \geq v'(\lambda_M) - v'(1) > 0$, using $c_R \geq 0$ and $\pi_{ij} \leq v'(1)$. The comparative statics are those of the proof of Proposition 2(iii) with $\partial \pi_{\text{eff},i}/\partial \pi_{ij} = 1$. □

**Placement.**

**Lemma 3** (Bridging in same-caste rooms)**.** *Under the single return, in a same-caste room student $i$ desires full contact if and only if $\pi(A_{j'}) \leq v'(1)$. Realized contact is $\tilde{s} = \min\{s_i^*, s_{j'}^*\}$, so the student's bridging $R_i^{\text{same}} = (1-\iota_i)(1-\tilde{s})$ is positive if and only if $\max\{\pi(A_{j'}), \pi(A_i)\} > v'(1)$. Under Assumption 4, $R_i^{\text{same}} = 0$ for lower-caste students, and the probability that $R_i^{\text{same}} > 0$ is weakly higher in upper-caste than in lower-caste rooms.*

*Proof.* In a same-caste room $\lambda_{ij} = 1$, $\chi_i = 0$, $\tau_i = 1 - \iota_i > 0$ and $\bar{B}_i = 1$, so the threshold of Lemma 1(c) is $\underline{\pi}_i = v'(1) + c_R(0;\Delta_i) = v'(1)$ by (M2), and student $i$, whose return is $\pi_{ij} = \pi(A_{j'})$, desires full contact if and only if $\pi(A_{j'}) \leq v'(1)$. The roommate's return is $\pi(A_i)$, so the roommate desires full contact if and only if $\pi(A_i) \leq v'(1)$. Realized contact is the minimum of the two, and $B_i = \iota_i + (1-\iota_i)\tilde{s}$ gives $R_i^{\text{same}} = 1 - B_i = (1-\iota_i)(1-\tilde{s})$, which is positive if and only if $\tilde{s} < 1$. Under Assumption 4 both returns are at most $v'(1)$ in a lower-caste room. Let $p_c = \Pr(\pi(A) > v'(1) \mid c)$. Since $A \mid U$ first-order stochastically dominates $A \mid L$ and $\pi$ is nondecreasing, $p_U \geq p_L$, and with independent draws within a room $\Pr(R^{\text{same}} > 0) = 1 - (1-p_c)^2$ is weakly higher for $c = U$. □

*Proof of Proposition 3. Decomposition.* Network capital is $N_i = A_i + V_i$, with $V_i = \pi_{ij} R_i$ under the single return. In the mixed room $V_i = \pi(A_j) R_i \geq 0$ whatever the allocation, because $R_i = 1 - B_i \geq 0$ and $\pi \geq 0$. In a same-caste room $V_i^{\text{same}} = \pi(A_{j'}) R_i^{\text{same}} \geq 0$, which is zero for lower-caste students by Lemma 3 and can be positive for upper-caste students. Hence

$$\Delta N_i = \Delta V_i \equiv \pi(A_j) R_i - \pi(A_{j'}) R_i^{\text{same}}.$$

Grades are fixed by the assignment, so $\Delta Y_i = \Delta V_i + \pi_g \Delta g_i$ and $\mathbb{E}_c[\Delta Y_i] = \mathbb{E}_c[\Delta V_i] + \pi_g \bar{g}_c$.

*Part (i).* For lower-caste students $R_i^{\text{same}} = 0$, so $\Delta V_i = \pi(A_j) R_i \geq 0$ and $\mathbb{E}_L[\Delta Y_i] = \mathbb{E}_L[\pi(A_j) R_i] + \pi_g \bar{g}_L \geq 0$ whenever $\bar{g}_L \geq 0$.

*Part (ii).* For upper-caste students, $\mathbb{E}_U[\Delta Y_i] = \mathbb{E}_U[\Delta V_i] + \pi_g \bar{g}_U$, which is negative if and only if $\mathbb{E}_U[\Delta V_i] < -\pi_g \bar{g}_U$. The bridging term $\Delta V_i$ has no sign: it is positive when mixed-room bridging is valuable, and negative when the same-caste bridging $\pi(A_{j'}) R_i^{\text{same}}$ is large, which requires an advantaged roommate with $\pi(A_{j'}) > v'(1)$, more common in upper-caste rooms (Lemma 3). The

signs of $\bar{g}_L$ and $\bar{g}_U$ are given by Proposition 1 and Corollary 1. If bridging in same-caste rooms is zero for everyone, $\Delta V_i = \pi(A_j)R_i \geq 0$ for all students. □

### C.4 Extension: venue-specific returns to bridging

The main text values all bridging at the roommate's network return $\pi_{ij}$. This extension lets bridging generated in clubs earn a constant return $\pi_{c,i}$ (written $\pi_c$ where it does not vary across students) and works out what changes. The notation of Appendix C.1 applies: network capital is $N_i = A_i + V_i$ with $V_i = \pi_{ij}(1-\lambda_{ij})s + \pi_{c,i}(1-\iota_i)(1-s)$, and the return governing time allocation is the effective return $\pi_{\text{eff},i}$, the network value gained per unit of belonging given up. It satisfies

$$\pi_{\text{eff},i} - \pi_{ij} = \frac{(\pi_{c,i} - \pi_{ij})(1-\iota_i)}{\tau_i},$$

so it equals $\pi_{ij}$ when $\pi_{c,i} = \pi_{ij}$, and equals $\pi_{c,i}$ in a same-caste room.

**Condition on club composition.** I consider $\bar{\pi}_L \leq \pi_c \leq \bar{\pi}_U$, where $\bar{\pi}_c$ is the mean network value of a caste-$c$ roommate. This is an empirical condition on club composition: club peers are on average a more valuable network than a lower-caste roommate, which is what an upper-caste student has in a mixed room, and a less valuable one than an upper-caste roommate, which is what a lower-caste student has. Each half matters for one caste. The second half can fail if club-access thresholds are high enough that club members are on average more advantaged than upper-caste students, and a direct credential value of club activity for placement would act like a higher $\pi_c$ and could push it above $\bar{\pi}_U$. For club-excluded students, whose time outside the room does not reach club peers, $\pi_{c,i}$ is lower.

**Proposition 6** (Wellbeing under venue-specific returns)**.** *Fix student $i$ with $\tau_i \neq 0$ and suppose $\underline{\pi}_i \geq 0$, so that friction alone would not lead the student to reduce contact below the belonging-maximizing level. Let $S_i^*$ denote wellbeing at the optimal allocation.*

(i) *$S_i^*$ is weakly decreasing in $\pi_{\text{eff},i}$, and constant for $\pi_{\text{eff},i} \leq \underline{\pi}_i$.*

(ii) *$\pi_{\text{eff},i} \leq \pi_{ij}$ if and only if $(\pi_{c,i} - \pi_{ij})\,\tau_i \leq 0$.*

(iii) *Relative to the single-return model ($\pi_{c,i} = \pi_{ij}$), for a given roommate, wellbeing is weakly lower and the mixed-room cost $C_i$ weakly higher if $\pi_{\text{eff},i} \geq \pi_{ij}$, and wellbeing is weakly higher and $C_i$ weakly lower if $\pi_{\text{eff},i} \leq \pi_{ij}$.*

*Proof.* Write wellbeing as a function of belonging, $\tilde{S}(B) = v(B) - c(1-B;\Delta_i) - \chi_i(B-\iota_i)/\tau_i$, which is concave. The student maximizes $\tilde{S}(B) - \pi_{\text{eff},i}B$ over the feasible interval of belonging, whose upper end is the ceiling $\bar{B}_i$. The derivative of $\tilde{S}$ at the ceiling is $v'(\bar{B}_i) + c_R(1-\bar{B}_i;\Delta_i) - \chi_i/\tau_i = \underline{\pi}_i \geq 0$, so by concavity $\tilde{S}$ is increasing below the ceiling. The objective has decreasing differences in $(B, \pi_{\text{eff},i})$, so the optimal $B^*$ is weakly decreasing in $\pi_{\text{eff},i}$, and by Lemma 1(c) it equals $\bar{B}_i$ for

$\pi_{\text{eff},i} \leq \underline{\pi}_i$. Hence $S_i^* = \tilde{S}(B^*)$ is weakly decreasing in $\pi_{\text{eff},i}$ and constant on $\pi_{\text{eff},i} \leq \underline{\pi}_i$, which is part (i). Part (ii) follows from the identity above, since $1 - \iota_i > 0$. For part (iii), $C_i = v(1) - S_i^*$ moves opposite to $S_i^*$, and part (i) gives the comparison. □

**Effects by type.** Combining parts (ii) and (iii) with the condition on club composition gives the following. The signs hold for a roommate on the typical side of $\pi_c$: upper-caste students have a lower-caste roommate, with $\bar{\pi}_L \leq \pi_c$, and lower-caste students have an upper-caste roommate, with $\bar{\pi}_U \geq \pi_c$.

| Group | $\pi_{\text{eff},i}$ vs $\pi_{ij}$ | Wellbeing vs single return | Cost $C_i$ |
|---|---|---|---|
| Upper-caste, club-oriented ($\tau_i < 0$) | lower | unchanged (at the corner) | unchanged |
| Upper-caste, room-oriented ($\tau_i > 0$) | higher | weakly lower | weakly higher |
| Lower-caste, room-oriented ($\tau_i > 0$) | lower | unchanged or weakly higher | unchanged or weakly lower |
| Lower-caste, club-oriented ($\tau_i < 0$) | higher | weakly lower | weakly higher |

**When the difference matters.** The venue-specific return changes wellbeing only for students whose allocation changes, that is, whose effective return crosses the threshold $\underline{\pi}_i$. The two types with a lower effective return stay at, or move back toward, the belonging-maximizing corner. The two types with a higher effective return face a stronger conflict between belonging and network value: upper-caste room-oriented students, for whom belonging favors the room but clubs offer a more valuable network than a lower-caste roommate, and lower-caste club-oriented students, for whom belonging favors clubs but an upper-caste roommate offers a more valuable network than club peers. Such students may trade wellbeing for network value, and their total payoff is higher for it. The effects are concentrated among students with $\tau_i$ near zero, for whom belonging depends little on the venue and network value decides it. In the main text's single-return model, the effective return equals $\pi_{ij}$ and the statements of Proposition 2 hold as stated (Remark C.3).

**Cost ordering.** The claim in Proposition 2(ii) that the cost is largest for a room-oriented student paired with a club-oriented roommate holds under the single return without further condition. Under venue-specific returns, a sufficient condition is $\pi_{\text{eff},i} \geq 0$, which for a room-oriented student is $\pi_{c,i}(1 - \iota_i) \geq \pi_{ij}(1 - \lambda_M)$: club time carries at least the bridging value of room time. It can fail for lower-caste room-oriented students, whose effective return is lower, especially club-excluded

students with $\iota_i = 0$ if $\pi_{c,i} < \pi_{ij}(1 - \lambda_M)$. The condition is sufficient, not necessary: the claim holds whenever the belonging and bridging-cost loss from withdrawal exceeds the friction saved.

**Placement.** The placement results of Proposition 3 are stated in terms of the net value of bridging $\Delta V_i$ and hold for any nonnegative valuation of bridging, provided lower-caste same-caste rooms involve no bridging. Relative to the single return, the value of mixed-room bridging differs from $\pi_{ij}R_i$ by $(\pi_{c,i} - \pi_{ij})(1 - \iota_i)(1 - \tilde{s}_{ij})$, which is zero for students at full room contact or with full club alignment. Under the condition above the single return understates the bridging value of upper-caste students and overstates that of lower-caste students, which does not affect the sign of the lower-caste result.

### C.5 Extension: access and competitive placement

**Access to internships.** Internships differ in how access is allocated. Non-competitive internships are open to all: a student is placed if and only if the index $Y_i$ in equation (7) exceeds a fixed threshold $\bar{y}$. Competitive internships have fixed capacity $q$: a student is placed if and only if $Y_i \geq \bar{y}^c$, where $\bar{y}^c$ is the $(1 - q)$ quantile of $Y$ in the cohort. Placement is an outcome rather than a choice margin: students do not choose their time allocation in anticipation of winning a rationed, discrete prize. Let $Y_i^s$ denote the index of student $i$ in the same-caste room.

**Corollary 2** (Access to internships)**.** *At a fixed threshold $\bar{t} \in \{\bar{y}, \bar{y}^c\}$:*

(i) *mixed assignment creates access if and only if $Y_i^s < \bar{t} \leq Y_i^s + \Delta Y_i$, and removes it if and only if $Y_i^s \geq \bar{t} > Y_i^s + \Delta Y_i$, so students whose same-caste index lies farther than $|\Delta Y_i|$ from the threshold are unaffected;*

(ii) *a positive (negative) expected change in the index in Proposition 3 does not imply that every student in the group gains (loses) access, since grades and roommate draws generate dispersion in $\Delta Y_i$;*

(iii) *the competitive threshold is endogenous: absent ties, $\sum_i \mathbf{1}\{Y_i \geq \bar{y}^c\} = qn$ for every room allocation, so changes in competitive placements sum to zero across the cohort.*

*Proof of Corollary 2.* Student $i$ is placed at fixed threshold $\bar{t}$ if and only if the index is at least $\bar{t}$. The index is $Y_i^s$ in the same-caste room and $Y_i^s + \Delta Y_i$ in the mixed room, so access is created if and only if $Y_i^s < \bar{t} \leq Y_i^s + \Delta Y_i$ and removed if and only if $Y_i^s \geq \bar{t} > Y_i^s + \Delta Y_i$, which proves part (i). Part (ii) follows because the expected change is an average of $\Delta Y_i$ over students, which varies with grades and roommate draws, and access depends on the realized position of $Y_i^s$ relative to the threshold. For part (iii), $\bar{y}^c$ is the $(1 - q)$ quantile of the cohort distribution of $Y$, so absent ties a share $q$ of the cohort satisfies $Y_i \geq \bar{y}^c$ under every allocation of rooms. □

**Remark** (Where the thresholds sit)**.** *Access changes only for students near a threshold, so where the thresholds sit determines who is affected. If the non-competitive threshold sits low in the index distribution,*

*where lower-caste students are over-represented, gains in the index matter mainly for them. If the competitive threshold sits in the upper tail, where upper-caste students are over-represented, a fall in the index shows up as lost competitive placements, while a gain for lower-caste students, who sit far below it, is unlikely to move them across it. The model then predicts that lower-caste gains concentrate in non-competitive internships and upper-caste losses in competitive ones. That the thresholds sit where this argument requires is an empirical fact, documented in Section 3 (placement rates by caste and internship type), not an implication of the model. Statements about the probability of placement for the full index require that the joint distribution of roommate advantage and entrance score be ordered by caste in the multivariate stochastic order, which Assumption 1 does not imply, and statements at a fixed competitive threshold are partial-equilibrium.*

**Organized recruitment.** As competition for elite internships increases, recruitment is organized through the placement cell, which changes what bridging is worth. First, information about openings is public, so the roommate's network adds less as a source of information and the value of bridging works instead through the hidden curriculum of recruitment, such as practicing for selection tests, technical interviews and mock interviews, and reviewing CVs. Second, eligibility to apply is restricted by grades and by specialization. I capture the first channel by scaling the information value of bridging by $\rho \in [0, 1]$ and the hidden curriculum by a reduced-form complementarity, and the second by an eligibility rule.

**Assumption 9** (Competitive placement)**.** *The competitive index is*

$$Y_i^c = A_i + \rho\, V_i + \pi_g\, g_i + \lambda_{ij}\, A_i\, \pi_{ij}, \qquad \rho \in [0, 1], \tag{15}$$

*where $V_i$ is the value of bridging. The last term (a) is proportional to the roommate's network value $\pi_{ij}$, so that a more advantaged roommate provides more support; (b) is complementary to the student's own advantage $A_i \geq 0$, which shapes the ability to translate support into competitive outcomes; and (c) is scaled by the alignment of the relationship $\lambda_{ij}$, since support from a more aligned relationship is more productive. A student is eligible to apply if and only if the student's specialization is eligible, $E_i = 1$, which is predetermined and does not depend on the room assignment, and grades satisfy $g_i \geq \bar{g}$. An eligible student obtains a competitive internship if and only if $Y_i^c \geq \bar{y}^c$, where $\bar{y}^c$ is the $(1 - q)$ quantile of $Y^c$ among eligible students.*

In same-caste rooms $\lambda_{ij} = 1$, whereas in mixed rooms $\lambda_{ij} = \lambda_M < 1$. The terms in $Y_i^c$ and the eligibility rule do not depend on realized contact, and alignment depends on the assignment rather than on contact, so the marginal return to bridging is unchanged and the time-allocation problem is unaffected. The complementarity is a reduced-form supermodularity assumption, not a consequence of the time-allocation model; other mechanisms, such as status competition in recruiting, could generate a similar pattern. Let $j$ and $j'$ denote the roommate in the mixed room and in the counterfactual same-caste room, $\Delta$ mixed minus same-caste outcomes, $\bar{\pi}_c \equiv \mathbb{E}[\pi(A) \mid c]$ the mean network value of a caste-$c$ roommate and $\bar{A}_c \equiv \mathbb{E}[A \mid c]$ mean advantage. Because $\bar{\pi}_L \leq \bar{\pi}_U$ ($A \mid U$ first-order stochastically dominates $A \mid L$ and $\pi$ is nondecreasing), mixed assignment low-

ers the value of the roommate's network for upper-caste students and raises it for lower-caste students. Because the complementarity term does not depend on contact, it is a roommate-advantage exposure effect specific to competitive placement: in same-caste rooms it implies a gradient of the competitive outcome in the roommate's advantage that rises with own advantage, whereas the placement index has none.

**Proposition 7** (Competitive internships under organized recruitment)**.** *Under the assumptions of Proposition 3 and Assumption 9:*

(i) *The expected effect of mixed assignment on the competitive index relative to the placement index is*

$$\mathbb{E}_U\big[\Delta Y_i^c - \Delta Y_i\big] = -(1-\rho)\,\mathbb{E}_U[\Delta V_i] - \bar{A}_U\big(\bar{\pi}_U - \lambda_M \bar{\pi}_L\big),$$
$$\mathbb{E}_L\big[\Delta Y_i^c - \Delta Y_i\big] = -(1-\rho)\,\mathbb{E}_L[\Delta V_i] + \bar{A}_L\big(\lambda_M \bar{\pi}_U - \bar{\pi}_L\big).$$

(ii) Lower-caste students. *The information term is nonpositive, since $\Delta V_i \geq 0$, so public information lowers the competitive return to the bridging that mixing induces. The complementarity term is nonnegative if and only if $\lambda_M \bar{\pi}_U \geq \bar{\pi}_L$, that is, if the alignment discount in mixed rooms does not outweigh the greater value of the roommate's network. The sign of the total is therefore not determined by the model.*

(iii) Upper-caste students. *The complementarity term is nonpositive. The information term is nonpositive if $\mathbb{E}_U[\Delta V_i] \geq 0$ and nonnegative if $\mathbb{E}_U[\Delta V_i] < 0$, in which case public information offsets part of the loss from a less valuable network. Hence the expected change in the competitive index is weakly lower than in the placement index whenever $\mathbb{E}_U[\Delta V_i] \geq 0$.*

(iv) Eligibility. *Competitive access can change only for students with $E_i = 1$. Mixed assignment creates eligibility for student $i$ if and only if $g_i^s < \bar{g} \leq g_i^s + \Delta g_i$ and removes it if and only if $g_i^s \geq \bar{g} > g_i^s + \Delta g_i$, where $g_i^s$ is the grade in the same-caste room. Since $\bar{g}_U \leq 0$ and $\bar{g}_L \geq 0$ under the conditions of Corollary 1, upper-caste students near the cutoff lose eligibility and lower-caste students near it gain it.*

*Proof.* Since $\lambda_{ij} = 1$ in a same-caste room and $\lambda_{ij} = \lambda_M$ in a mixed room, Assumption 9 gives

$$\Delta Y_i^c - \Delta Y_i = -(1-\rho)\,\Delta V_i + A_i\big[\lambda_M \pi(A_j) - \pi(A_{j'})\big],$$

because $Y_i^c - Y_i = -(1-\rho)V_i + \lambda_{ij} A_i \pi_{ij}$ and $V_i$ is the value of bridging in each room type. By random assignment (M5), own advantage is independent of the roommate draw, so $\mathbb{E}[A_i(\lambda_M \pi(A_j) - \pi(A_{j'})) \mid c] = \bar{A}_c(\lambda_M \mathbb{E}[\pi(A_j)] - \mathbb{E}[\pi(A_{j'})])$. For an upper-caste student the mixed-room roommate is lower-caste and the same-caste roommate is upper-caste, so the bracket averages $\lambda_M \bar{\pi}_L - \bar{\pi}_U$; for a lower-caste student it averages $\lambda_M \bar{\pi}_U - \bar{\pi}_L$. This gives part (i). For part (ii), $\Delta V_i \geq 0$ for lower-caste students by Proposition 3, so $-(1-\rho)\mathbb{E}_L[\Delta V_i] \leq 0$ since $\rho \leq 1$. For part (iii), $\bar{\pi}_U - \lambda_M \bar{\pi}_L \geq (1-\lambda_M)\bar{\pi}_U \geq 0$ because $\bar{\pi}_L \leq \bar{\pi}_U$ and $\lambda_M < 1$, and the information term has

the sign of $-\mathbb{E}_U[\Delta V_i]$. Part (iv) follows because the specialization rule is predetermined and the grade rule is a threshold on $g_i$, which equals $g_i^s$ in the same-caste room and $g_i^s + \Delta g_i$ in the mixed room. □

**Implications by group.** The three features of organized recruitment affect the two groups differently. For lower-caste students, public information lowers the competitive return to bridging, the hidden curriculum helps only if the alignment discount in mixed rooms is mild, and the eligibility cutoff helps those whose grades rise past it, so competitive gains are smaller than non-competitive gains unless the grade channel dominates. For upper-caste students, the hidden curriculum and the eligibility cutoff both amplify losses, since their grades fall and they lose an advantaged same-caste roommate, while public information dampens the part of the loss that comes from a less valuable network. Competitive losses are therefore larger than non-competitive losses for upper-caste students when the grade and complementarity channels dominate.

### C.6 Bonding constraints and welfare

A student is *bonding-constrained* if they would choose more belonging than their ceiling allows, $B_i^\chi > \bar{B}_i$ (Lemma 1). By Lemma 1(c), the belonging-seeking regime of §C.3 is exactly the case $B_i^\chi \geq \bar{B}_i$: bonding-constrained students are those whose effective return to bridging, $\pi_{\text{eff},i}$, is too low to pull them off the ceiling. A student is *floor-bound* if $B_i^\chi < B_i^{lo}$: they would choose less belonging than any feasible contact gives.

**Proposition 8** (Who is bonding-constrained)**.** *Fix student $i$ with $\tau_i \neq 0$.*

(i) *The friction-adjusted target $B_i^\chi$ satisfies $\partial B_i^\chi/\partial \Delta_i = c_{R\Delta}/|\Phi_i''| \geq 0$, $\partial B_i^\chi/\partial \pi_{\text{eff},i} = 1/\Phi_i'' < 0$ and $\partial B_i^\chi/\partial \chi_i = 1/(\tau_i \Phi_i'')$, negative if $\tau_i > 0$ and positive if $\tau_i < 0$. Moreover $B_i^\chi < 1$ if and only if $\pi_{\text{eff},i} > v'(1) - \chi_i/\tau_i$.*

(ii) *Student $i$ is bonding-constrained if and only if $\pi_{\text{eff},i} < \underline{\pi}_i$, and at their ceiling if and only if $\pi_{\text{eff},i} \leq \underline{\pi}_i$. The threshold $\underline{\pi}_i$ is decreasing in the ceiling $\bar{B}_i$ and increasing in $\Delta_i$, holding the friction term fixed. The friction term $-\chi_i/\tau_i$ lowers the threshold for room-oriented students ($\tau_i > 0$) and raises it for club-oriented students ($\tau_i < 0$).*

(iii) *A room-oriented student is bonding-constrained more often the higher the roommate's network value $\pi_{ij}$ and the lower the club network value $\pi_{c,i}$; for a club-oriented student the dependence reverses.*

*Proof.* (i) By Lemma 1, an interior $B_i^\chi$ solves $F(B; \Delta, \pi_{\text{eff}}, \chi) \equiv \Phi_i'(B) - \chi/\tau = 0$, with $F_B = \Phi_i'' < 0$, $F_\Delta = c_{R\Delta} \geq 0$, $F_{\pi_{\text{eff}}} = -1$ and $F_\chi = -1/\tau$. The implicit function theorem gives $dB/dx = -F_x/F_B$ for each parameter $x$, which yields the three derivatives. Next, $B_i^\chi < 1$ if and only if $F(1) < 0$, i.e. $\Phi_i'(1) = v'(1) + c_R(0; \Delta_i) - \pi_{\text{eff},i} < \chi_i/\tau_i$, which by (M2) is $\pi_{\text{eff},i} > v'(1) - \chi_i/\tau_i$.

(ii) The first claim is Lemma 1(c). The threshold is $\underline{\pi}_i = v'(\bar{B}_i) + c_R(1 - \bar{B}_i; \Delta_i) - \chi_i/\tau_i$. The first term is decreasing in $\bar{B}_i$ by concavity of $v$; the second is decreasing in $\bar{B}_i$ because $c_R$ is increasing

in its first argument (convexity) and $1 - \bar{B}_i$ falls; and it is nondecreasing in $\Delta_i$ by $c_{R\Delta} \geq 0$. The friction term is negative if $\tau_i > 0$ and positive if $\tau_i < 0$.

(iii) Student $i$ is constrained if and only if $\pi_{\text{eff},i} < \underline{\pi}_i$, and $\underline{\pi}_i$ does not depend on $\pi_{c,i}$ or $\pi_{ij}$. Since $\partial\pi_{\text{eff},i}/\partial\pi_{c,i} = (1 - \iota_i)/\tau_i$ and $\partial\pi_{\text{eff},i}/\partial\pi_{ij} = -(1 - \lambda_{ij})/\tau_i$, a higher $\pi_{ij}$ lowers $\pi_{\text{eff},i}$ and a higher $\pi_{c,i}$ raises it when $\tau_i > 0$, and the signs reverse when $\tau_i < 0$. □

The cross-caste ordering of thresholds in the earlier version required the two students to face the same return $\pi_{ij}$. With a venue-specific return, $\pi_{\text{eff},i}$ differs between a lower-caste room-oriented student and an upper-caste club-oriented student with the same roommate advantage, so the comparison depends on $\pi_{c,i} - \pi_{ij}$ and is not signed by the model.

**Corollary 3** (Constraint status). (i) *Bonding-constrained students are at their ceiling: $s_i^* = 1$ if $\tau_i > 0$ and $s_i^* = \underline{s}$ if $\tau_i < 0$. Unconstrained students hold interior contact unless they are floor-bound.*

(ii) *A club-excluded student of either caste has $\iota_i = 0$, so $\tau_i = \lambda_M > 0$ and $\bar{B}_i = \lambda_M$. Such a student has $\pi_{\text{eff},i} = \big[\pi_{c,i} - \pi_{ij}(1 - \lambda_M)\big]/\lambda_M$ and is bonding-constrained if and only if $\pi_{\text{eff},i} < v'(\lambda_M) + c_R(1 - \lambda_M; \Delta_i) - \chi_i/\lambda_M$. Caste enters this condition only through $\Delta_i$, $\chi_i$ and the values $\pi_{c,i}$ and $\pi_{ij}$.*

(iii) *Holding the other determinants fixed, a student is unconstrained if and only if $\Delta_i \leq \Delta_{\max}$, where $\Delta_{\max}$ solves $\underline{\pi}_i(\Delta_{\max}) = \pi_{\text{eff},i}$ (empty if $\underline{\pi}_i(0) > \pi_{\text{eff},i}$).*

*Proof.* (i) is Lemma 1(c) together with the definition of the ceiling. (ii) By (M4) a club-excluded student has $\iota_i = 0$, so $\tau_i = \lambda_M > 0$ and $\bar{B}_i = \lambda_M$; substitute into $\underline{\pi}_i$. (iii) By Proposition 8(ii), $\underline{\pi}_i$ is nondecreasing and continuous in $\Delta_i$, so $\{\Delta : \underline{\pi}_i(\Delta) \leq \pi_{\text{eff},i}\}$ is an interval containing 0 if nonempty. □

For a student at an interior optimum, the welfare effect of a change in roommate alignment $\lambda$ is identified by a formula in the contact choice, the friction, the bonding pass-through and the gap between the club and roommate network values, with $v$ and $c$ dropping out through the first-order condition (Proposition 9). When the two network values coincide, or $\iota_i = 1$, the gap term vanishes and the formula depends only on $\chi_i$, $s^*$ and $\tau_i$. For students at a corner, the formula is only a bound: welfare is thus exactly measurable for students whose contact is interior, and only bounded for students at a corner, in particular the bonding-constrained.

**Proposition 9** (Sufficient statistic for welfare). *Let $\Omega_i(\lambda) \equiv \max_{s \in [\underline{s},1]} G_i(s; \lambda)$ be student $i$'s welfare, net of terms independent of contact, as a function of roommate alignment $\lambda$, where*

$$G_i(s;\lambda) \equiv v(B) - c(1 - B; \Delta_i) - \chi_i s + \pi_{ij}(1 - \lambda)s + \pi_{c,i}(1 - \iota_i)(1 - s), \qquad B = \iota_i + (\lambda - \iota_i)s,$$

*holding $\iota_i$, $\chi_i$, $\pi_{ij}$, $\pi_{c,i}$ and $\Delta_i$ fixed, and let $M_i \equiv \big[\chi_i + (\pi_{c,i} - \pi_{ij})(1 - \iota_i)\big]/\tau_i$.*

(a) $\Omega_i'(\lambda) = s^*\big[v'(B^*) + c_R(1 - B^*; \Delta_i) - \pi_{ij}\big]$ *exactly.*

(b) *At an interior optimum,* $\Omega_i'(\lambda) = s^* M_i$.

(c) *At a corner at the ceiling (bonding-constrained,* $\Omega_i'(\lambda) \geq s^* M_i$*; at a corner away from the ceiling (floor-bound,* $\Omega_i'(\lambda) \leq s^* M_i$*. The formula therefore understates the welfare value of alignment, and hence the loss from a less aligned roommate, for bonding-constrained students.*

*Proof.* $G_i$ is $C^1$ in $(s, \lambda)$ and strictly concave in $s$ (for $\tau_i \neq 0$), so $s^*(\lambda)$ is unique, and the feasible set $[\underline{s}, 1]$ does not depend on $\lambda$. By the envelope theorem, $\Omega_i'(\lambda) = \partial G_i / \partial \lambda$ at $s^*$. Since $\partial B / \partial \lambda = s$, this equals $s^* \big[v'(B^*) + c_R(1 - B^*; \Delta_i) - \pi_{ij}\big]$, where the term $-\pi_{ij} s$ comes from the room-sourced bridging $\pi_{ij}(1-\lambda)s$. This holds at corners as well. The slope in $s$ is $\partial G_i / \partial s = \tau_i \big[v' + c_R\big] - \chi_i + \kappa_i$ with $\kappa_i = \pi_{ij}(1-\lambda) - \pi_{c,i}(1-\iota_i)$. At an interior optimum it is zero, so $v' + c_R = (\chi_i - \kappa_i)/\tau_i$. Using $\kappa_i + \tau_i \pi_{ij} = (\pi_{ij} - \pi_{c,i})(1 - \iota_i)$, we get $v' + c_R - \pi_{ij} = \big[\chi_i - \kappa_i - \tau_i \pi_{ij}\big]/\tau_i = M_i$, so $\Omega_i' = s^* M_i$.

At a corner, compare $v' + c_R$ with $(\chi_i - \kappa_i)/\tau_i$ through the sign of $\partial G_i / \partial s$. If $\tau_i > 0$ and $s^* = 1$, then $\partial G_i / \partial s \geq 0$, so $v' + c_R \geq (\chi_i - \kappa_i)/\tau_i$. If $\tau_i < 0$ and $s^* = \underline{s}$, then $\partial G_i / \partial s \leq 0$, and dividing by $\tau_i < 0$ gives the same inequality. These are the ceiling corners, and $\Omega_i' = s^*(v' + c_R - \pi_{ij}) \geq s^* M_i$ because $s^* \geq 0$. For the non-ceiling corners ($\tau_i > 0$ with $s^* = \underline{s}$, and $\tau_i < 0$ with $s^* = 1$) the inequalities reverse and $\Omega_i' \leq s^* M_i$. □

**Proposition 10** (The marginal switcher prices wellbeing)**.** *Let a lower-caste student choose ex post between their mixed room and an alternative room, and let* $\Delta$ *denote the mixed room minus the alternative. Since* $U_i = S_i + N_i + \pi_g g_i$, $\Delta U_i = \Delta S_i + \Delta N_i + \pi_g \Delta g_i$*. A student who leaves the mixed room reveals* $-\Delta S_i > \Delta N_i + \pi_g \Delta g_i$*, a lower bound on the wellbeing loss in network-capital (placement) units; a stayer reveals the reverse; and a marginal (indifferent) student equates the two, point-identifying the wellbeing loss without a functional form for* $c$ *or* $\chi_c$*, given* $\pi_g$ *and a measure of* $\Delta N_i$*.*

*Proof.* $U_i$ is additively separable in $S_i$, $N_i$ and $g_i$. A student leaving the mixed room reveals $\Delta U_i < 0$, i.e. $\Delta S_i + \Delta N_i + \pi_g \Delta g_i < 0$, which rearranges to the stated inequality. A stayer reveals $\Delta U_i \geq 0$, the reverse. An indifferent marginal student has $\Delta U_i = 0$, so $-\Delta S_i = \Delta N_i + \pi_g \Delta g_i$, in which only $\pi_g$, which is estimable, and the observed or imputed $\Delta N_i$ and $\Delta g_i$ appear. □

**Remark** (Heterogeneous trade-offs)**.** *The additive form treats consumption and investment as trading off one-for-one for every student. If the true objective is* $\omega_i S_i + (1 - \omega_i)(N_i + \pi_g g_i)$*, the marginal student satisfies* $-\Delta S_i = \frac{1-\omega_i}{\omega_i}(\Delta N_i + \pi_g \Delta g_i)$*, so the wellbeing loss recovered from switchers is contaminated by their own weight* $\omega_i$*, and switchers are selected on proximity to indifference rather than on a representative* $\omega_i$*. This is the logic of heterogeneous returns among the self-selected in Björklund and Moffitt (1987). Baseline mental-health data can speak to whether switchers differ from non-switching constrained students, but cannot by themselves separate a small wellbeing loss from a low weight on wellbeing. This remark is a placeholder for the welfare analysis.*

**Theorem 1** (Break-even weight on belief convergence)**.** *Let the planner value* $W = \sum_i U_i + \omega_W \sum_i \alpha_i$*, with* $\alpha_i$ *(Appendix B) entering* $W$ *but not* $U_i$ *(Assumption 7). For a policy with per-student effects* $\Delta U < 0 < \Delta\alpha$ *(*$\Delta U$ *in network-capital units, Proposition 10), it is worthwhile if and only if* $\omega_W \geq$

$\bar{\omega}_W \equiv -\Delta U/\Delta\alpha$. *Comparing two-person against partially-mixed three-person rooms, with near-identical academic gain and differences mainly in the wellbeing and attitude trade, and with* $\Delta\alpha^{(2)} > \Delta\alpha^{(3)}$,

$$\bar{\omega}_W^{2v3} = \frac{\Delta U^{(3)} - \Delta U^{(2)}}{\Delta\alpha^{(2)} - \Delta\alpha^{(3)}}.$$

*The threshold is informative without committing to a value of* $\omega_W$*: if implausibly large, two-person rooms are not worth their wellbeing cost regardless of one's view on the value of the attitude shift; if small, the reverse.*

*Proof.* Per student, $\Delta W = \Delta U + \omega_W \Delta\alpha$. Setting $\Delta W \geq 0$ and dividing by $\Delta\alpha > 0$ gives $\omega_W \geq -\Delta U/\Delta\alpha$. For the two-versus-three-person comparison, preferring configuration (2) requires $\Delta U^{(2)} + \omega_W \Delta\alpha^{(2)} \geq \Delta U^{(3)} + \omega_W \Delta\alpha^{(3)}$, which rearranges to the stated threshold after dividing by the positive quantity $\Delta\alpha^{(2)} - \Delta\alpha^{(3)}$. □