Closing Gaps in Higher Education Trajectories: Direct and Indirect Effects of Information and Personalized Counseling

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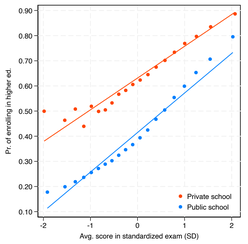
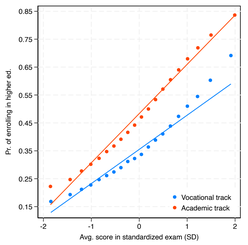
How to efficiently tackle inequality in post-secondary education trajectories? – Can social spillovers amplify college-going interventions?

Investment in higher education is very unequal across SES groups: both in developed and developing countries. Why is this usually the case?

- **Funding** (Dynarski, 2003; Van der Klaauw, 2002; Long, 2004; Belley and Lochner, 2007; Solis, 2017.)
- **Behavioral barriers** (Lavecchia *et al.*, 2016; French and Oreopolous, 2017; Carrell and Sacerdote, 2017.)
- **Information** (Dinarsky *et al.*, 2019; Hastings *et al.*, 2016; Larrocau *et al.*, 2024
- **Social networks influence** (Altjmed *et al.*, 2021; Barrios-Fernandez, 2021; Barrios-Fernandez *et al.*, 2023.





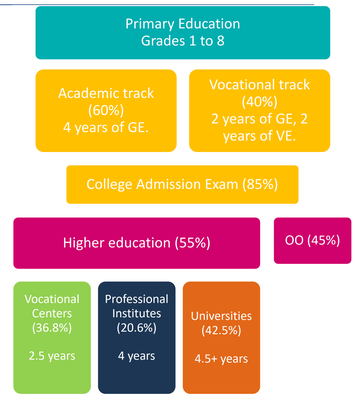
How to efficiently tackle inequality in post-secondary education trajectories?

- **Low-touch**: traditional information interventions find none to modest effects. (Notable exceptions: Hoxby and Turner, 2013; Dynarski *et al.*, 2019.)
- **High-touch**: personalized support much more effective, but expensive. (Bettinger *et al.*., 2012; Carrell and Sacerdote, 2017; Mulhern, 2023)

An information + counseling experiment in Chile

We test a college-going intervention in vocational high schools in Chile, implemented during the 12th grade. Some important features of the Chilean System:

- Higher Education Admissions: Decentralized for vocational HE (VC and IP), Centralized DA for universities.
- High tuition fees, but generous funding (free tuition for bottom 60% of income distribution, funding for the rest)
- Some hurdles to higher education application: University admission exam registration (Aug-Sep), funding application (Oct-Nov), University Exam (Dec), Application/enrollment (Dec-Feb)



Main Findings: Large information frictions, counseling works w/ social spillovers

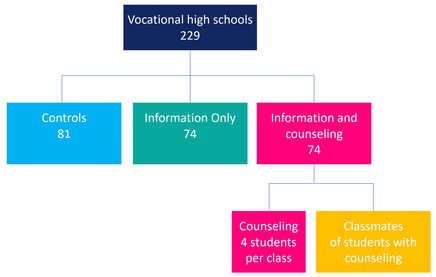
Descriptive Findings

1. Most students plan to attend higher education (91%)
2. Large information frictions: ↓ knowledge on financial aid and the labor market

RCT Findings

1. Only information ↑ understanding of the higher ed system (0.08σ) but does not increase funding applications or enrollment in higher education.
2. Information + personalized counseling ↑ perceived/actual understanding of the HE system (0.28σ), pr of registering/taking the college admission exam (13pp), applications for funding (11pp) and HE applications/enrollment (7pp).
3. Personalized counseling has large social spillovers: especially among "close friends" of treated students.

Experiment design

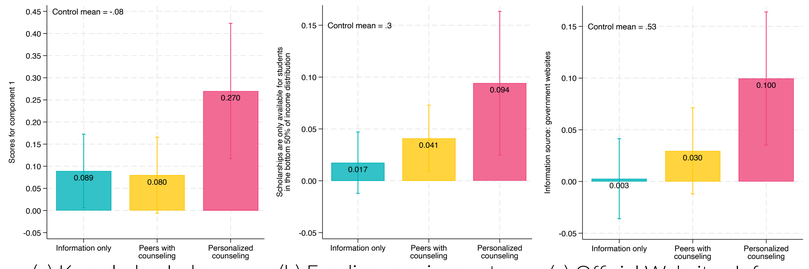


The interventions:

- Information packs: Students received written information in their high school senior year (12th) on relevant deadlines, funding eligibility, labor market trajectories, and information to compare HE options
- Counseling: randomly chosen students had four sessions with trained schools counselors in their final semester of their senior year.

Information + counseling ↑ perceived and actual knowledge

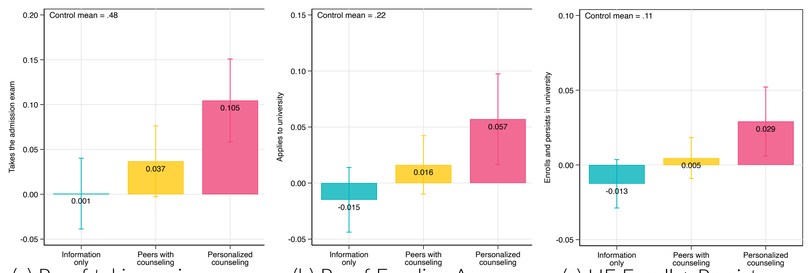
- Information + Counseling: ↑ perceived knowledge of financial aid, HE application and labor markets returns; ↑ knowledge index, driven by financial aid, not labor market trajectories; changes sources of information to official sources (official websites and teachers)
- Information alone improves actual knowledge but NOT perceived knowledge.
- No evidence of social learning.



(a) Knowledge Index (b) Funding requirements (c) Official Websites Info

Information + counseling ↑ applications and enrollment

- Information + personalized counseling ↑ participation in college admission exams, funding and university applications, and HE enrollment.
- Social spillovers in participation in admission exam, relatively easy task.
- Absence of social learning/support to deal with more complex application parts—i.e., funding —likely explain no enrollment spillovers.



(a) Pr. of taking uni exam (b) Pr. of Funding App (c) HE Enroll + Persist

Empirical Strategy

$$Y_{is} = \beta_0 + \beta_1 I_{is} + \beta_2 CPC_{is} + \beta_3 PC_{is} + \delta X_{is} + \varepsilon_{is}$$

Where:

- I_{is} is 1 if student i attends school s assigned to the information only group.
- CM_{is} is 1 if student i has personalized counseling classmates, but does not receive the counseling herself.
- M_{is} is 1 if the student i is assigned to the personalized counseling program.
- X_{is} is a vector of individual and school controls (only to gain precision).

★ Standard errors clustered at the randomization level (i.e., school network).
★ Randomization worked.

Cost-Effectiveness of personalized counseling

The personalized counseling program was offered to 756 students.

Benefits:

- Additional 52.95 students in higher education.
- Additional 26.43 students in university.

Costs:

- Information intervention: USD 2.27 per student → USD 1,716.12
- Personalized counseling: USD 95.57 per student → USD 72,250.92

Cost per additional student in higher ed/university:

- USD 1,417.97 per additional student in higher education.
- USD 2,795.43 per additional student in university.

Is the program worth it?
VPN: USD 3,259 per student.

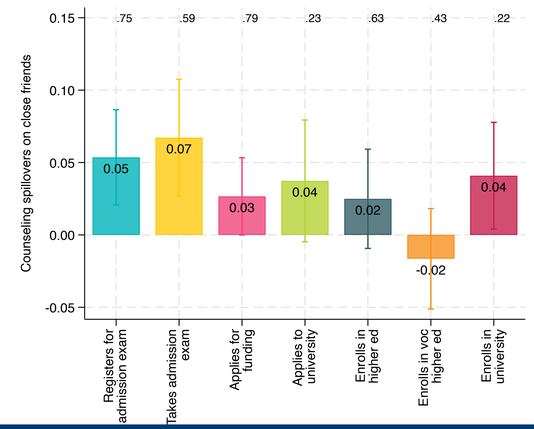
Effects on friends of students receiving information + counseling

To study spillovers on friends, we focus exclusively on individuals identified as friend of someone in the survey and who do not receive the mentorship program themselves:

$$Y_{is} = \gamma_0 + \gamma_1 FM_{is} + \gamma_2 X_{is} + \varepsilon_{is}$$

We find that:

- Friends of students receiving info + counseling: ↑ perceived and actual knowledge, ↑ application and university enrollment



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