Closing the Gap: Experimental Evidence on College Counseling and Higher Education Trajectories[†]

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Abstract

This paper uses a randomized controlled trial to evaluate a short counseling program directed to senior high school students from disadvantaged backgrounds in Chile. Considering the challenges to ensure high-quality college counseling for all students, we designed a program that combines a customized information package with four one-hour group sessions run during the school day, where students discussed their post-secondary plans, returns to different post-secondary options, funding opportunities, and application procedures. We worked with 26,853 students from 229 high schools randomly assigned to control, information-only, or information-plus-counseling arms. To assess the effectiveness of our interventions, we link Chile's rich educational administrative records to our experimental sample and to baseline and end-of-year surveys, enabling us to track multiple margins of students' higher-education trajectories in detail. We find that the full counseling program significantly improves enrollment and persistence in higher education. Counseling increased admission-exam registration and test taking (10 pp), financial-aid applications (9 pp), and enrollment in higher education (7 pp), with effects persisting through re-enrollment and short-program completion. Effects are largest for students with lower parental education, lower parental expectations, and higher information frictions, suggesting that the program substitutes for lack of family resources and support. Our findings suggest that counselor scarcity and uneven counseling quality can potentially be addressed by a short, structured intervention like ours, which design is conducive to scale-up.

JEL Codes: I24, D64, J62

Keywords: College counseling, higher education access, financial aid, information frictions, behavioral barriers.

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1 Introduction

Despite large governmental efforts and generous funding, substantial gaps persist in post-secondary educational trajectories across socioeconomic groups, even among similarly talented students. These persistent gaps reflect not only differences in academic preparation or credit constraints, but also information frictions, behavioral barriers, and lack of support (Carrell and Sacerdote, 2017; Hoxby and Avery, 2013). Given the large returns to higher education (Card, 1993; Zimmerman, 2014; Goodman et al., 2017), identifying cost-effective interventions to overcome these barriers is critical for improving social mobility and reducing inequality. School counselors have been shown to significantly impact educational outcomes, including college enrollment and completion (Mulhern, 2023). However, counselors are scarce and have large caseloads making it difficult to ensure high-quality guidance to all students Hyman (2024).

This paper evaluates whether a short and structured group counseling program can effectively improve postsecondary educational outcomes for senior high school students from disadavantaged backgrounds in Chile. To address counselor scarcity while ensuring consistent quality, we evaluate a program that we co-designed with our implementation partner, *Fundación Luskic*. Students in the counseling program received a customized information package and four one-hour group counseling sessions run during the school day by college counselors that we recruited and trained. To assess the effectiveness of the program we rely on a randomized controlled trial (RCT) that involved 26,853 students from 229 high schools, who were randomly allocated to three arms: control, information-only, or information-plus-counseling. The information package highlighted funding opportunities, returns to higher education, and provided important details about applications, including deadlines. It also directed students to official resources to learn more about their funding opportunities, and for comparing higher education programs. The counseling program reinforced the messages of the information package and allowed students to interact with the counselors. It requiered a minimal time commitment—four hours total—which allows to tests whether brief, structured group counseling can overcome barriers without requiring intensive and ongoing advising that would make it difficult to scale.

Budget constraints limited us to offering the full counseling program to only a subset of four students per school, that we choose randomly. This feature of the design allows

us to study spillovers: whether classmates of students in the counseling program benefit from peer effects (Altmejd et al., 2021; Barrios-Fernández, 2022).

Chile provides an ideal setting for this study. First, the country maintains detailed administrative records that we were able to link to our survey and experimental sample, allowing comprehensive assessment of treatment effects on educational trajectories. Second, despite having a system that removes many frictions present elsewhere—free college applications, centralized admissions to universities, and generous public funding for low-income students—Chile exhibits large socioeconomic gaps in higher education access similar to other countries, with documented information frictions and behavioral barriers (Hastings et al., 2016; Larroucau et al., 2025). Third, school counselors are scarce: only half of high schools employ a counselor, and those available have large caseloads similar to the United States (Barr and Castleman, 2025).

We focus on vocational-track high schools, which enroll 40% of high school students in Chile and serve disproportionately disadvantaged populations. Unlike other settings, the educational track in Chile is not determined by academic performance, but rather by students choice. In addition, independently of the track chosen, students can pursue either vocational or university degrees once they complete high school. Importantly, vocational-track students report high interest in higher education, suggesting that their lower enrollment rates are the result of barriers rather than lack of motivation.

We combine rich administrative and survey data to study the effects of our interventions on students' trajectories. The administrative data allow us to observe whether students register for the college admission exam, their exam performance, whether they apply for financial aid, whether they apply to and are admitted to university, where they enroll in higher education, and whether they persist or complete any program. This comprehensive coverage eliminates concerns about attrition when studying changes in educational trajectories. We complement these analyses with surveys conducted at the beginning and end of the 2021 academic year. These surveys allow us to assess students' understanding of the higher education system—including available funding, application procedures, and graduates' labor market trajectories—as well as how much they trust their understanding of the system, the main information sources in which they rely, and their aspirations and plans for the future.

Combining administrative and baseline survey data collected before randomization, we

first show descriptively that vocational-track students are 16 percentage points (24%) less likely to enroll in higher education than academic-track students. Differences in academic preparedness explain part of this gap, but large enrollment differences persist across the full test-score distribution, including among high-performing students. Vocational-track students also come from more disadvantaged households, with lower household income, lower parental education, and lower parental expectations about their education, which likely limits support at home when making postsecondary education decisions. Consistent with this pattern, we document large information frictions regarding both financial aid—including eligibility and generosity—and labor market trajectories of higher education graduates. At the same time, students report high perceived understanding of the system despite low factual accuracy. Finally, despite these barriers, vocational-track students report high aspirations and confidence: 86% plan to take the college admission exam, 90% plan to enroll in higher education within two years, and most report high confidence in their ability to be admitted, perform well, and complete higher education.

Our results show that brief counseling generates large effects on educational trajectories. Students assigned to the full counseling program become 7 percentage points (13%) more likely to enroll in higher education—equivalent to closing 44% of the baseline gap between vocational and academic-track students. These effects persist over time through re-enrollment and degree completion. students assigned to counseling are 6.6 percentage points (16%) more likely to enroll and persist for at least one year, and 4.7 percentage points (20%) more likely to enroll immediately after high school and persist or graduate after two years. In contrast, information alone does not meaningfully change enrollment despite improving factual knowledge—consistent with prior research showing information is necessary but insufficient to transform educational choices. We also document small spillover effects on classmates' exam registration but not on applications or enrollment, suggesting peer effects in this context are limited to relatively simple tasks.

Second, the counseling program substantially improves students' understanding of the financial aid system (0.28 standard deviations) and their confidence in that understanding. Information-only students show smaller, but still significant gains in knowledge (0.09 standard deviations) but no change in their confidence in that knowledge, highlighting that provision of information alone misses crucial behavioral and confidence barriers.

Third, heterogeneity analyses reveal that counseling benefits disadvantaged students

most: those with lower parental education and expectations experience 11–12 percentage point enrollment gains compared to 3–6 percentage points for more advantaged peers, suggesting counseling substitutes for lack of adequate family guidance. Supporting this interpretation, we observe that students in the program shift away from relying on relatives for information and toward official sources. Taken together, these results suggest that on top of providing information, the structured support and interactions with trained counselors during the sessions play a crucial role.

Our results contribute to several literatures. First, they add to recent work studying the relevance of school counselors in shaping students' educational trajectories. Mulhern (2023) shows that school counselors substantially impact educational outcomes after high school, with effects comparable to teachers. This study also shows that school councelors are particularly relevant for low-income students, who presumably have fewer alternative sources of support outside of the school. However, counselor scarcity and the large caseloads they face difficults ensuring high-quality counseling for everyone (Gagnon and Mattingly, 2016; Clinedinst, 2019). As an alternative to address this challenge, numerous counseling programs run by NGOs and other organizations have emerged to provide support to students outside of high schools. A limitation of these programs, though, is that they typically target students who are already taking steps to apply to higher education and who show interest in receiving additional support, which may limit their ability to reach the most disadvantaged students. Barr and Castleman (2025), for instance, evaluates the Bottom Line program in the United States, which provides intensive one-on-one advising to low-income students both during high school and in college. Students spend between 10 and 15 hours working with their advisor before college, and a large share of them continue receiving individualized, campus-based support for up to six years after high school completion. This program generates large effects on college enrollment and persistence, leading to significant increases in college completion. However, the intensive nature of the program raises questions about its scalability. In contrast, Hyman (2024) addresses counselors scarcity by training teachers in delivering a college planning curriculum and finds that it increases enrollment for high-achieving students—who also become more likely to earn an associate's degree—but reduces it for low-achieving students. The teacher-based-counseling had no effects on bachellor's degree attainment. Our paper adds to this literature by showing that a brief, structured group counseling program

consisting of only four one-hour sessions, delivered during the school day and targeting all students in disadavantaged schools can achieve substantial gains comparable to much more intensive programs such as the one evaluated by Barr and Castleman (2025). Our program—which pushed students to carefully think about the different options available to them, their funding opportunities, and application procedures—proved especially effective for students from disadavataged backgrounds who likely lack adequate support at home. The light nature of our intervention, suggests that it could be a cost-effective and scalable approach to providing college counseling to all students, even in low-resource settings.

Second, our findings contribute to the extensive literature on barriers to higher education access. Research shows that persistent enrollment gaps reflect more than differences in academic preparation or credit constraints (Hoxby and Avery, 2013; Bailey and Dynarski, 2011; Belley and Lochner, 2007). Information frictions (Avery and Kane, 2004; Bettinger et al., 2012; Busso et al., 2017; Dynarski and Scott-Clayton, 2006; Hastings et al., 2015, 2016; Castleman and Page, 2015), behavioral barriers (Lavecchia et al., 2016), and lack of adequate support (Carrell and Sacerdote, 2017) substantially limit access for disadvantaged students. This evidence has motivated numerous interventions. Light-touch approaches—information provision or "nudge" interventions—typically improve factual knowledge but fail to generate meaningful changes in educational trajectories (Gurantz et al., 2019; Bird et al., 2019; Hyman, 2019; Avery et al., 2021; Smith et al., 2016; Bergman et al., 2019; Bettinger et al., 2022; Bird et al., 2021; Gurantz et al., 2021). High-touch interventions involving personalized support and ongoing guidance demonstrate substantially larger effects (Bettinger et al., 2012; Carrell and Sacerdote, 2017; Barr and Castleman, 2025), but their cost and intensity create tensions with scalability. Application complexity and uncertainty also constitute important barriers. Dynarski et al. (2021a); Burland et al. (2023) show that reducing uncertainty about funding conditional on admission to the University of Michigan substantially increased applications and enrollment among talented disadvantaged students. Our intervention targets a broader population of students, many not on the margin of admission to selective institutions, and shows that even brief counseling with high scaling potential can generate large persistent effects by helping disadvantaged students process information, build confidence, and act on their knowledge.

Third, our findings echo results from other policy domains where personalized support substantially outperforms passive information strategies. In housing search, Bergman

et al. (2024) find that individualized assistance helps families navigate complex housing markets more effectively than informational resources alone. Similarly, Finkelstein and Notowidigdo (2019) document that targeted outreach increases take-up of nutritional assistance, while Dhia et al. (2022); Card et al. (2018); Barr and Turner (2018) show that personalized job search support outperforms standard informational interventions. Bai and Massa (2021) reach analogous conclusions for financial decisions. Across these contexts, including ours, complexity and uncertainty appear to create barriers that information alone cannot overcome—personalized guidance helps individuals process information, build confidence, and translate knowledge into action.

The rest of the paper is organized into six sections. Section 2 describes the Chilean education system, section 3 combines administrative and survey data to understand the aspirations and barriers that students in our sample face, while section 4 provides details on our counseling program. Then, section 5 describes our empirical approach and discusses its validity, and section 6 presents our results. Finally, section 7 concludes.

2 Institutions

This section describes Chile's education system, focusing on secondary education—where our intervention takes place—and on higher education—where it aims to have an impact. In discussing higher education, we pay particular attention to admissions procedures across institution types and to the public financial aid system.

2.1 Secondary Education

Compulsory education in Chile lasts twelve years and is divided into primary education (grades 1–8) and secondary education (grades 9–12).[1] Both levels are offered by three types of schools: public, voucher, and private. Public and voucher schools cater for 93% of students nationwide and are state-funded through a voucher system.[2] Private schools, which enroll the remaining 7% of students, are financed exclusively through tuition.

At the end of grade 10, students choose between an academic and a vocational track. The curriculum is common through grade 10. In grades 11–12, however, academic-track

[1] Students typically begin primary school at age six and finish secondary school at age eighteen.

[2] Private voucher schools were permitted to charge tuition until 2016, but the amount of the voucher declined with the fees. By the time students in our sample entered high school, voucher schools were phasing out tuition, and most no longer charged fees.

students continue with a general curriculum designed to prepare them for university, while vocational-track students specialize in one of 34 vocational fields.[3] Vocational-track students represent roughly 40% of the high school population and come disproportionately from disadvantaged backgrounds.

Student guidance (*orientación*) is a mandatory curricular subject in Chile encompassing academic, social-emotional, and career development. School counselors (*orientadores*)—when present—are responsible for coordinating guidance activities across the school. However, counselors are scarce: in 2024, only 46% of high schools employed at least one counselor, and among those schools the average counselor was responsible for 318 students. In practice, guidance responsibilities are shared with *profesores jefes* (class teachers), who have pastoral, administrative, and academic monitoring duties similar to homeroom or advisory teachers in the United States. Each class is assigned a class teacher who, in addition to a standard teaching load, is expected to coordinate orientation activities and support students' postsecondary planning. While class teachers play an important role in guidance regardless of counselor availability, the burden increases substantially in schools without dedicated counseling staff, and most class teachers receive limited specialized training in college and career counseling. As a result, the amount and quality of individualized postsecondary guidance available to students is limited.

2.2 Higher Education

Chile's higher education system comprises three types of institutions: *vocational training centers*, *professional institutes*, and *universities*. Vocational training centers offer two- to three-year technical programs. Professional institutes offer both short programs and longer four-year professional degrees that do not lead to bachelor's degrees. Only universities can award bachelor's degrees, with undergraduate programs lasting between nine and fourteen semesters. Some universities also offer shorter technical programs. Among first-time entrants in 2022—the first cohort for which students in our sample could enroll—16% attended a vocational training center, 41% a professional institute, and 43% a university.

Admissions processes vary by institution type. Vocational training centers and professional institutes use decentralized admissions: students apply directly to each institution.

[3]The full list of vocational programs is available at https://www.tecnicoprofesional.mineduc.cl/wp-content/uploads/2016/03/Especialidades-Formacion-TP-2013.pdf. High schools typically offer only a subset of the vocational fields. Hence, students' options depend on the school they attend.

Universities, by contrast, use a fully centralized admissions system. Students register for the national admission exam in August–September, take the exam in December, and receive results in late December or early January. They then submit an ordered list of university-major preferences on a centralized online platform, which assigns seats using a deferred-acceptance algorithm. Registration for the exam and use of the centralized platform are free for students from government-subsidized schools—which includes all students in our sample. Admissions to vocational and professional institutes occur on a rolling basis between December and February.

Although all higher education institutions must be accredited to operate, program quality varies widely. Selectivity, completion rates, and labor market returns differ sharply across fields and institutions (see **?**). This heterogeneity makes the choice of institution and major particularly consequential. Unlike in the United States, Chilean students apply directly to specific majors rather than institutions. Moreover, changing majors after enrollment is typically costly; for universities, it often requires retaking the national admission exam. To help students navigate this complex decision, the Ministry of Education maintains a publicly accessible website (`www.mifuturo.cl`) where students can compare programs and institutions across multiple dimensions—including retention rates, time to graduation, and labor market outcomes—similar to the US College Scorecard.

Tuition fees are high across all institution types, independent of whether institutions are public or private. In 2022, average annual tuition was CLP 1.8 million at vocational centers (range: CLP 0.5–2.6 million), CLP 1.9 million at professional institutes (CLP 1–3.2 million), and CLP 3.9 million at universities (CLP 1.4–8 million). For reference, the average monthly household income in 2022 was CLP 1.3 million (CASEN, 2022), meaning even the lowest annual tuition represents approximately five months of average household income, making financial aid essential for most students.

The government offers several forms of financial aid. The most generous—*Free Higher Education* (*Gratuidad*)—covers full tuition for students from households in the bottom 60% of the income distribution who enroll in participating institutions.[4] Students outside this group may apply for scholarships—available to the bottom 70% of the income distribution, conditional on academic requirements—and subsidized income-contingent loans—

[4] As of 2022, 37 of 58 universities, 9 of 32 professional institutes, and 22 of 50 vocational training centers participate in *Gratuidad*. Disadavantaged students in institutions that are not part of this program can fund their studies through scholarships and loans.

available to all students, conditional on academic requierements. For university applicants, loans require scoring above the 40th percentile and scholarships above the 60th percentile on the admission exam; for vocational and professional institutes, eligibility for loans and scholarships depends on completing high school with a GPA of at least 5.0 and 5.3, respectively. In 2022, these GPAs approximately corresponded to the 40th and 60th percentiles of the GPA distribution. Loans are subsidized and repayments are capped at 10% of income. Students may also receive a food stipend and transportation subsidies.

Applications for public funding are centralized and occur in October of the high school senior year, prior to the admission exam. Students must fill an online form—FUAS—providing information on each household member and their income over the last two years. The Ministry of Education verifies this information by comparing it with administrative records—including tax and social security data—and offers students the most generous combination of benefits for which they are eligible. One of the sources against which the Ministry of Education verifies the information provided by students is the *Registro Social de Hogares*, a system managed by the Ministry of Social Development to determine eligibility for social programs. This means that students must keep their information updated in this register. The process can be burdensome, especially for students whose parents work in the informal sector or who come from households with less stable compositions. Since the form needs to be completed online, filling the form becomes more difficult if students lack a reliable internet connection or a computer at home. In these cases, students will fill the forms using smartphones, or will need to rely on schools or public facilities to complete the application. Eligibility results are released in late December, before university applications open, allowing students to incorporate funding information into their enrollment decisions.

In sum, Chile's higher education system features centralized university admissions, broad access to public financial aid, and income-contingent loans. Many barriers common elsewhere—fee-based admission exams, complex holistic applications, high-interest private loans—are largely absent. Yet socioeconomic gaps in enrollment and completion remain large. As in the United States, applying for financial aid is complex, imposing disproportionate burdens on students from disadvantaged backgrounds.

3 Understanding Inequality in Higher Educational Trajectories

This section discusses potential factors behind differences in the level and type of post-secondary education pursued by students from academic and vocational high schools in Chile. Although part of the gap might reflect the distinct educational focus of each track, differences in higher education trajectories are likely amplified by the higher concentration of disadvantaged students in the vocational track. To shed light on the relative importance of different factors contributing to these differences, we draw on three sources of data: (i) administrative records on high school completion and higher education enrollment, (ii) tenth-grade national exam scores and the accompanying student and parent surveys, and (iii) a baseline survey we conducted among high school seniors in our study sample at the start of the school year.

Analyses using administrative records and the tenth-grade standardized exams focus on the cohort that reached grade 10 in 2018—one year before our experimental cohort. Administrative records are available for all cohorts, but the exams and their accompanying student and parent surveys are not administered every year, and our experimental cohort was not tested in grade 10.

By contrast, analyses based on our baseline survey focus on the experimental sample. The baseline survey was administered online at the start of the 2021 school year to all seniors in the 229 vocational high schools in our sample. It comprised two modules. The first module asked students about their plans after high school and the barriers they identified to continuing to higher education. The second module tested their understanding of the higher education system.[5]

The survey was collected before randomizing schools into treatment groups.[6] School staff distributed the survey link, resulting in 9,187 responses (approximately 35% of all invited students). As shown in Table **??**, respondents closely resemble non-respondents in gender and age but are positively selected on socioeconomic status and previous achievement: they are 7.7 pp more likely to have a mother with higher education, 10.6 pp more likely to attend a voucher school, and scored slightly higher on fourth-grade standardized

[5]To design the survey, we reviewed in detail the Chilean higher education system, including college application processes and financial aid programs. The survey used by Hastings et al. (2016) served as inspiration for several questions.

[6]This ensures that the baseline information we analyze is not affected by treatment status.

exams. As expected, given the timing of the survey application, response rates are similar across treatment arms. All results in this section are descriptive and should not be interpreted as causal; they are intended to motivate the interventions we evaluate.

Figure 1 summarizes the main results of this section. Panel (a) shows that vocational-track students are 16 pp (24%) less likely to enroll in higher education and 23 pp (55%) less likely to enroll in university than academic-track students. Below we examine some of the most common explanations to which this gap is attributed.

Academic preparation. Although both tracks share the same curriculum through grade 10, academic-track students outperform vocational-track students by roughly 0.5σ on tenth-grade tests. However, panel (b) shows that large enrollment gaps persist throughout the entire test-score distribution. Even vocational-track students scoring in the top 5% enroll in higher education at lower rates than similarly achieving academic-track students. Indeed, top-5% vocational students enroll at rates similar to academic-track students in the top 20%.

Liquidity constraints. Vocational-track students come from households with lower incomes (panel c). Mean monthly per-capita income is CLP 126,000 ($\approx$ USD 197) for vocational-track students and CLP 187,000 ($\approx$ USD 292) for academic-track students. As discussed in Section 2, Chile offers generous financial aid for low-income students. Most students in the vocational track would be eligible for scholarships and subsidized income-contingent loans. 70% of them are eligible for the "free higher education" program, and 90% for other scholarships that cover tuition fees. The rest can rely on subsidized student loans. None of these programs, however, compensates for foregone earnings. Thus, income differences may still matter. In addition, if students and their families are not fully aware of the funding opportunities they have available, income differences may matter even more.

Parental education. Vocational-track students come from households with lower levels of parental education. Only 11% of them have mothers who attended higher education, compared to 30% among academic-track students (panel d). This difference matters because parents with some experience in higher education may be better equipped to help their children navigate the transition to higher education, make informed choices, and pro-

vide some reassurance that they can access and succeed in higher education. Additionally, parents with higher education may serve as role models and raise students' aspirations.

Parental expectations. Parental expectations are high for both groups (panel e), though higher among academic-track students. 92.1% of parents of academic track students expect their kids to reach higher education, versus 82.6% of parents of vocational track students. These expectations may shape students' aspirations and affect the support and encouragement they receive from their parents.

Differences in enrollment persist even after controlling for each of these dimensions. To quantify the contribution of these variables to the enrollment gap, panel (f) presents the results of an Oaxaca–Blinder decomposition. Differences in test scores, household income, parental education, and parental expectations jointly explain roughly 70% of the total enrollment gap. Math performance alone explains 25% of the gap; Spanish performance, mother's education, and parental expectations each account for approximately 13%; and household income accounts for 5%.

Information frictions and support. Panels (g) and (h) show that students in our sample face sizeable information frictions. Students overestimate both academic and socioeconomic requirements for the most generous financial aid program: "free higher education." Only 3% of them mark all eligibility requisites correctly in a multiple-choice question. In true/false questions, just 21% correctly state that the program has no minimum test-score requirement, and only 53% correctly answer that it is false that only students from households with monthly incomes below the minimum wage are eligible. Students also underestimate average labor market outcomes of graduates from higher education. They underestimate average earnings for business, nursing, and education degrees offered at vocational centers or universities by 9% to 38%. They also underestimate average earnings associated to business degrees in professional institutes and slightly overestimate earnings associated to nursing and education degrees offered in these institutions.[7]

Despite these gaps, panel (i) shows that most students report high perceived understanding of funding, applications, and labor market opportunities while factual accuracy is low, reducing incentives to seek additional information.

[7] Online Appendix **??** presents the full distribution of the earnings reported by the students.

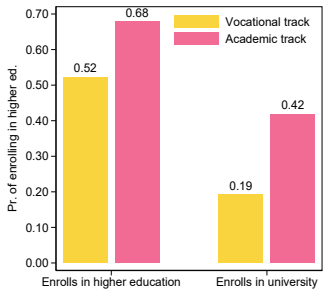
Interest and Aspirations. Another potential explanation for lower enrollment among vocational-track students is that they are less interested in pursuing higher education. Differences in information and support at home could affect confidence and interest in pursuing higher education. However, panel (j) shows that vocational-track students have high trust in their ability to succeed in higher education: they report an average likelihood of 81% for being admitted, 82% for performing well, and 86% for completing this level of education. Additionally, they reported a 60% average likelihood of outperforming their classmates on the admission exam (above the 50% expected average and consistent with positive selection in survey response).[8]

In addition, panel (k) uses responses from student surveys administered to 10th grade students together with the national exams to show that 73% of vocational-track students expect to complete higher education. Although lower than academic-track students, this number exceeds actual enrollment. The same figure shows that a similar fraction of vocational-track students actually register for the university admission exam within 2 years of their expected high school graduation, demonstrating genuine intent. Finally, panel (l) builds on the responses to our entry survey and confirms that a large share of students in our sample plan to take the university exam (86%) and enroll in higher education within two years (90%).

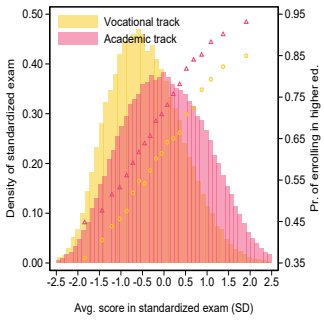
Taken together, these results indicate that lower levels of higher education enrollment among vocational-track students are not fully explained by academic preparation, liquidity constraints, or lack of interest. Instead, large information frictions and limited support in navigating financial aid and college applications seem to hinder conversion of aspirations into enrollment. Given this pattern and the limited resources available at schools to support students in their transition to higher education, we designed a short counseling intervention that targets information frictions and provides structured support for navigating funding and college applications. Section 4 describes this counseling program in detail.

[8] Online Appendix **??** presents the full distribution of the likelihoods reported by the students.

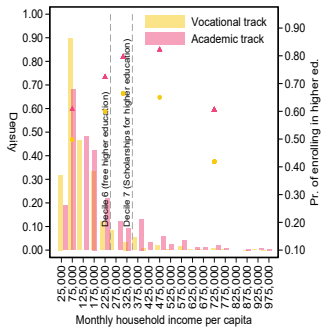
Figure 1: Understanding Inequality in Higher Educational Trajectories



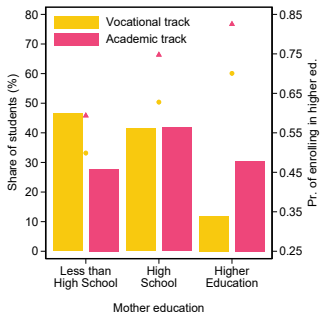
(a) Gap in higher ed enrollment



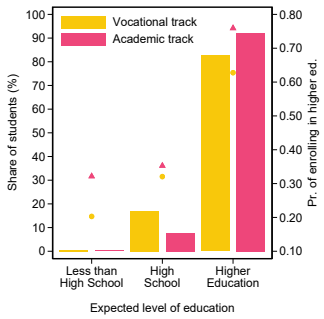
(b) Gap by test scores



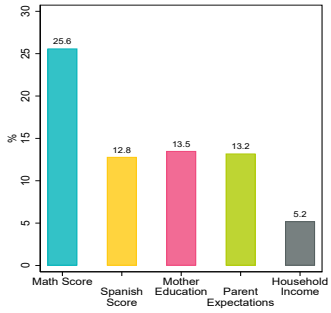
(c) Gap by hh income



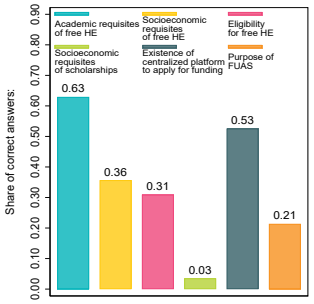
(d) Gap by mother ed



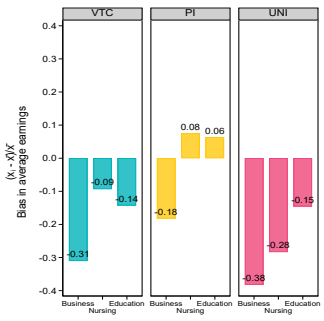
(e) Gap by parental exp



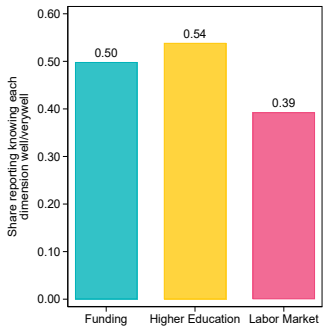
(f) Decomposition of the gap



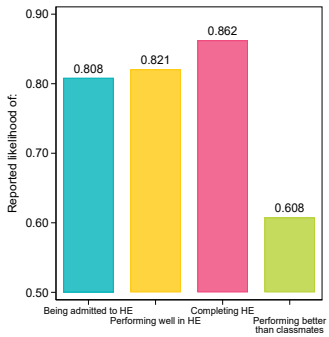
(g) Knowledge on financial aid



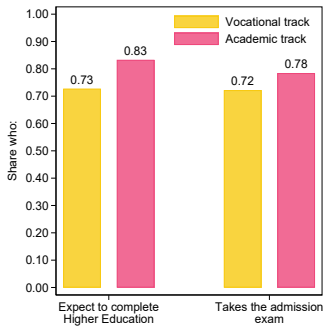
(h) Knowledge on labor market



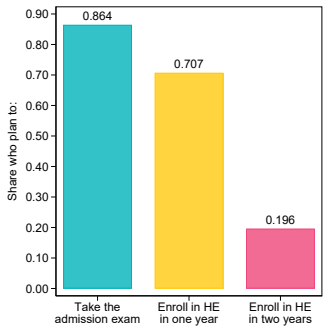
(i) Perceived knowledge level



(j) Self-efficacy



(k) Expected education



(l) Plans for future education

Notes: This figure examines drivers of higher education inequality between vocational (yellow) and academic (pink) track students. Panels (a)-(b) show enrollment rates and the gap by test scores. Panels (c)-(e) show the gap by household income, mother's education, and expected educational attainment. Panel (f) presents an Oaxaca-Blinder decomposition. Panels (g)-(i) show knowledge on funding, labor market earnings, and self-reported system knowledge. Panels (j)-(l) show self-efficacy, educational expectations, and enrollment plans.

Table 1: Characteristics of Baseline and Exit Survey Respondents

	Students who did not answer the baseline survey (1)	*Students who answer the baseline survey* (2)	*Students who did not answer the endline survey* (3)	*Students who answer the endline survey* (4)
A. Demographic characteristics				
Female = 1	0.477	0.008	0.484	-0.020
		(0.017)		(0.016)
Age in grade 12th	19.311	-1.857***	19.156	-1.679***
		(0.354)		(0.318)
B. Socioeconomic characteristics				
Mother education: Some higher ed.	0.368	0.077***	0.373	0.077***
		(0.015)		(0.012)
School type: Voucher	0.387	0.106**	0.397	0.091**
		(0.044)		(0.044)
School SES: Low	0.608	0.011	0.603	0.034
		(0.039)		(0.043)
School SES: Very Low	0.392	-0.011	0.397	-0.034
		(0.039)		(0.043)
C. Previous academic performance				
Standarized test score (grade 4)	245.505	2.897**	245.566	3.396***
		(1.407)		(1.139)
Attendance (grade 11)	90.095	0.420	89.918	1.210*
		(0.732)		(0.706)
D. Future treatment status				
Control school	0.319	-0.007	0.315	0.009
		(0.043)		(0.049)
Information only school	0.319	-0.007	0.315	0.009
		(0.043)		(0.049)
Information only school	0.319	-0.007	0.315	0.009
		(0.045)		(0.037)

Note: This table compares students who answered and did not answer the baseline and endline surveys administered at the beginning of the academic year—i.e., before any intervention had been implemented—and at the end of the academic year—i.e., once the interventions had been completed. Out of the 27,619 students in our sample x% answered the entry survey and y% answered the exit survey. Response rates are balanced across treatment groups; the only exception are students assigned to the full counseling program who were X percentage points more likely to answer the exit survey. Column (1) reports the average of each variable for students who did not answer the baseline survey. Column (2) reports the difference between respondents and non-respondents relative to that average. Column (3) reports the average of each variable for students who did not answer the endline survey. Column (4) reports the difference between respondents and non-respondents relative to that average. Standard errors clustered at the school-network level are presented in parentheses below the differences. Schools are classified annually into five groups based on the socioeconomic characteristics of their students: group 1 schools are the most disadvantaged and group 5 the least. All schools in our sample belong to groups 1 (very disadvantaged) or 2 (disadvantaged).

4 Counseling Program: Overcoming Information Frictions and Support Barriers

4.1 The counseling program

As described in Section 3, vocational-track students face substantial information frictions and limited family support when navigating complex and uncertain funding and college applications. High schools also have scarce counseling resources—especially in disadvantaged settings—which limits their ability to help students overcome barriers to higher education. We designed a concise, low-cost, and scalable support program with two components: an information package and a short counseling program delivered to small student groups. Both components provide actionable guidance for key steps between high school and higher education; we describe each of them below.

Information package. We sent physical information packages to all students in treatment schools in August 2021, just before the admission-exam registration deadline. Packages were hand-delivered at schools to make college information salient and actionable. Each package contained three pieces—an A4 cardboard envelope, a brochure, and a customized letter—that highlighted funding options and returns to higher education and offered planning tools. The envelope front asked, "Do you know that you could go to higher education for free?" to capture attention; inside, a calendar marked key deadlines with space for students to add details, and a QR code linked to the government site www.accesomineduc.cl outlining enrollment steps. The brochure repeated the headline question and added that Chile offers multiple financial aid programs—free higher education, scholarships, and subsidized loans—and that applying to all of them only requires filling an online form at www.fuas.com. One side of the brochure displayed average earnings and employment by education level from the national household survey (e.g., CASEN), noting that on average attending higher education is attractive but that outcomes vary widely across programs and institutions. It listed dimensions to consider when choosing a program and institution—admission requirements, accreditation, retention, time-to-degree, and labor-market outcomes—and a QR code to www.mifuturo.cl—a web site analogous to the U.S. College Scorecard—which allows students to retrieve these statistics. The other side of the brochure provided a step-by-step application guide—e.g., register for the admission exam, apply for financial aid, research programs and institutions, apply and enroll—and a table for students to record their preferred programs and compare them along the dimensions mentioned above. The customized letter personalized these messages: it reiterated that tuition can be fully covered, explained why higher education may be valuable while acknowledging variation by program and institution, and reported relevant statistics—retention, duration, employment, and earnings—for the four fields most commonly chosen by alumni from the student's own school . It also showed earnings ranges across these fields and included a fillable comparison table similar to the one in the brochure. Online Appendix **??** provides images and additional details of this material. The per-student cost of producing and distributing the information package was USD 2.27.

Group counseling program. To complement the information package, we designed a short group counseling program consisting of four one-hour sessions held monthly from August to November 2021 during the school day. Sessions were delivered to small groups of four students to encourage peer interaction and enable personalized guidance. The information package ensured that all students received consistent, standardized information; the counseling program reinforced and deepened this same information while adding structured reflection and guidance. Importantly, all sessions covered the same information available in the package and the websites it referenced; the value added was interactive discussion and some personalized support. In the first session conducted in August, students reflected on their post-secondary aspirations, identified barriers they anticipated facing, and set concrete goals—a exercise the information package could not facilitate. The remaining three sessions built directly on the package's materials and the websites it referenced. In session II conducted in September, counselors and students discussed different types of higher education institutions and programs, practiced using the comparison tools on www.mifuturo.cl, and explored which dimensions mattered most for different career paths. Session III conducted in October covered funding opportunities and eligibility, and discussed in detail the online funding application form (FUAS), allowing them to ask questions on how to use it. Finally, Session IV conducted in November guided students through the application process for both, universities centralized system and technical institutions decentralized system. Throughout, sessions combined guided discussion with hands-on practice rather than passive instruction. Online Appendix A provides detailed session descriptions.

Our implementation partner recruited counselors from a pool of teachers, educational psychologists, and other education professionals with relevant backgrounds. After screening, counselors completed training that included role-playing exercises and mock sessions to ensure consistent delivery and quality. Each counselor received a detailed manual with session-by-session objectives, activities, and discussion guides. Importantly, counselors were external to the schools and assigned to work across multiple schools; they were present only during assigned session times and did not interact with non-participating students or school personnel about program content. The cost of the counseling program was USD 95.57 per student assigned to the program, reflecting counselor compensation, training, and materials.

4.2 Experimental design and implementation

We evaluate the intervention using a three-arm design: control, information only, and information plus group counseling. The two treatment arms vary the components delivered to separate the role of salient, actionable information from the added value of guided support. The information package, delivered by teachers in schools, targets information frictions and may suffice if lack of accessible information is the binding constraint. If students require help processing or trusting information or overcoming behavioral barriers, brief counseling can provide structure, accountability, and encouragement (**?**). This design tests the full intervention while also assessing whether the low-cost package alone improves outcomes.[9]

Schools were invited to participate in a study of aspirations and barriers affecting disadvantaged students' transition to higher education. To participate, schools agreed to administer student surveys at the beginning and end of the academic year; in return, we promised a detailed post-year report describing their students' aspirations and the main challenges they reported to face when thinking of pursuing higher education. This report—that also benchmarked the status of the schools with other schools in the study sample—was delivered after the academic year—and therefore after our intervention—concluded. When schools agreed to participate, they were not aware that some would later be offered additional support during the year; participation was therefore unrelated to the possibility of receiving information packages or the counseling program.

In Chile, many schools belong to school networks. To limit cross-school spillovers, we randomized at the school-network level using a computer lottery.[10] The entry survey was administered in March–April, prior to any randomization. In May, school networks were randomized into the three experimental groups. All schools offered additional support—information packages or group counseling—accepted it. Within schools assigned to the information plus counseling branch, a second randomization selected four students per classroom to be invited to the group counseling program. Students were selected based on their list numbers—a unique number within a class that depends on last name initials. Since we did not know students' last names, we gave counselors a list of four numbers that

[9] **?** finds that individuals process information differently depending on who delivers it. This might be another reason why the counseling program could have an impact beyond the information package.

[10] 55.46% schools in our sample did not belong to any network. 18.34% of schools were part of a two-schools network, and 11.79% were part of a three-schools network. Only 14.41% of schools were part of a network of more than 3 schools.

we randomly chose for each classroom-school combination. Before the first session, counselors would explain to the whole class that we were trying a new counseling approach and that four students chosen completely at random would have the opportunity to participate in it. We chose these students randomly because ex ante we could not anticipate which students would benefit most and we wished to study heterogeneous impacts. If a selected student was absent at the time of a session, the seat remained open and the student could join a later session; no replacements were made. Students not selected for counseling still received the information package and had classmates in counseling. We decided to treat a few groups in many schools rather than many groups in fewer schools to increase the number of treated clusters and increase power. In a potential scale-up of this program, economies of scale would be realized as a counselor could serve many students within the same school and transportation logistics would be reduced. Note that this design further allows us to study spillovers onto untreated classmates of counseled students. We planned a more detailed analysis of spillovers across friendship networks, but unfortunately less than 20% of students reported close friends in the entry survey, limiting power for those analyses. Table **??** summarizes the assignment.

We invited all 470 vocational high schools in Santiago, Valparaíso, and O'Higgins—three neighboring regions in the center of Chile that together concentrate about 60% of the population—to participate in our study; 229 schools accepted our invitation. Table **??** indicates that schools in our sample closely resemble other vocational high schools and all high schools in the country in terms of their students' demographics. Both female shares—48.8% in our sample versus 48.4% in the universe of vocational schools and 50.6% in all schools—and the age at which students reach grade 12—17.7 years in our sample vs. 17.7 in the universe of vocational schools and 17.5 in all schools—are similar across these groups of schools. Sector and location reflect our central-region focus: the public and the rural shares are lower than in the universe of vocational schools. The public share in the whole sample of high schools is even lower, while the rural share is slightly higher than in our sample. Socioeconomic and academic characteristics align with the vocational sector but clearly indicate that vocational high schools cater for more disadvantaged students than the average school in the country. Both, the vocational schools in our sample and the universe of vocational schools are more likely to be classified as very-low-SES and low-SES. Their students are more likely to come from low-income households and to have mothers

who have not completed high school. They also have lower standardized test scores. Overall, schools in our sample resemble other vocational high schools on demographics, SES, and achievement; the regional focus makes public and rural schools underrepresented, and compared to all Chilean high schools—including academic-track high schools—they serve more disadvantaged students.

Table 2: Comparison between schools in the study and other schools in the country

	Schools in the Intervention (1)	**All Vocational Schools in the Country** (2)	**All Schools in the Country** (3)
A. Demographic characteristics			
Female = 1	0.488	0.484	0.506
Age in grade 12th	17.674	17.691	17.470
B. Socioeconomic characteristics			
Mother Education: Less than High School	0.462	0.497	0.288
Mother Education: Complete High School	0.387	0.367	0.345
Mother Education: Some Higher Education	0.137	0.122	0.355
School type: Public	0.419	0.514	0.290
School type: Voucher	0.581	0.486	0.561
School location: Rural	0.031	0.100	0.054
School SES: Low	0.568	0.405	0.506
School SES: Very Low	0.432	0.595	0.248
C. Average performance in standardized exams			
SIMCE Math Score	231.607	231.881	263.511
SIMCE Reading Score	230.376	231.392	249.998
D. Parental Expectations			
Less than High School	0.004	0.006	0.004
Complete High School	0.387	0.367	0.345
Some Higher Education	0.137	0.122	0.355

Note: This table compares the schools that participated of our study with all the vocational high schools and with all the high schools in the country. It describes them in terms of type, location, students' demographic characteristics, students' SES, and students' performance in standardized tests (SIMCE). The SES measure corresponds to an index generated by the Ministry of Education. It takes values from one to five, where one indicates students of very low-SES background and five indicates students of very high-SES background.

5 Data and Empirical Strategy

5.1 Data

To study the effects of our interventions on students' educational trajectories, we link administrative records from the Ministry of Education, the agency in charge of the university admission process (DEMRE), and the Education Quality Agency to baseline and endline surveys that we applied to students in our sample. A consistent individual identifier lets us follow all 12th-grade students in study schools over time and match their pre-intervention characteristics to postsecondary education outcomes.

First, using Ministry of Education enrollment datasets, we identify the universe of 12th-grade students in our sample schools in the intervention year. Using the individual identifier, we recover their complete K–12 trajectories and, after high school, observe key milestones for their transition to higher education: funding applications, initial enrollment, year-to-year retention, and graduation. Information on the university admission process—exam registration and performance, applications through the centralized platform, and admissions—comes from DEMRE. Higher education records report the exact program and institution in which students are enrolled each academic year, which lets us characterize postsecondary trajectories at a fine level of detail.

Second, we use administrative data from the Education Quality Agency to measure pre-intervention academic performance and household background. Standardized test scores taken during K–12 education and the parent questionnaires collected alongside those exams—including information on parental education and expectations—serve as predetermined variables for balance checks, to describe the sample, and in heterogeneity analyses that inform our discussion of mechanisms.

Third, we administered surveys at the beginning (baseline) and end (endline) of the academic year to students in the experimental sample. These surveys document aspirations, perceived barriers, and knowledge of various dimensions of the higher education system. We use these survey data to provide descriptive evidence on potential barriers and to study changes in knowledge and understanding attributable to the interventions. We also use these data in additional heterogeneity analyses to discuss mechanisms.

An advantage of the administrative data is that it covers the full universe of students in treated and control schools, so there is no attrition when studying educational trajectories. We follow students for three years after the intervention—through 2024—to study not only enrollment but also progression and completion. By contrast, survey response is partial: approximately 35% of the experimental sample responded to the baseline survey and just under 30% to the endline survey. Respondents are positively selected, and we find evidence of selective attrition in the endline survey—i.e., students assigned to the full counseling program were XX percentage points more likely to respond. In the main text, we present estimates without correction; as a robustness check, the Online Appendix **??** reports Lee bounds (Lee, 2009) for all outcomes measured in the endline survey.

5.2 Empirical Approach

Specification : We identify the effects of our group counseling intervention using a randomized control trial (RCT). Conditional on randomization working as intended—we discuss this below—treatment assignment is independent of potential outcomes, and average treatment effects can be estimated by comparing outcomes between treated and control students. As discussed in Section 4, we have three treatment groups: (1) students in schools assigned to the information-only treatment; (2) students in schools assigned to the information-plus-counseling program who were not selected to participate in counseling, which allows us to study classroom spillovers of the counseling program; and (3) students who were selected to receive counseling. We compare each group to the control group of students in schools not assigned to any intervention using specification (1):

$$Y_{is} = \alpha_0 + \alpha_1 T_{1is} + \alpha_2 T_{2is} + \alpha_3 T_{3is} + \Phi X_s + \epsilon_{is} \tag{1}$$

where Y_{is} is the outcome of student i from school s; T_{1is} equals one if student i is in a school assigned to the information-only treatment (treatment 1); T_{2is} equals one if student i is in a school assigned to the information-plus-counseling program but was not selected for counseling (treatment 2); and T_{3is} equals one if student i was selected for counseling (treatment 3). For precision, we control for $\mathbf{X}$, a vector of predetermined individual- and school-level variables.[11] Since randomization was conducted at the school-network level, we cluster standard errors at that level.

The estimates of interest are α_1—which measures the effect of assignment to the information-only treatment—, α_2—which measures the effect of assignment to information and classmates with counseling—, and α_3—which measures assignment to the full counseling program.

Depending on whether the outcome variable was collected from administrative or survey data, we estimate specification 1 either on the whole sample of students enrolled in 12th grade in control and treated schools at the beginning of the academic year, or on the sample of students who answered the endline survey. Below we discuss balancing and

[11] Under treatment randomization, controls are not required for unbiasedness. We include them to increase precision. Online Appendix D presents results without controls. The coefficients are remarkably similar to the ones discussed in the main body of the paper. The controls in our main specification are: school SES level; an indicator for whether the school is in a rural area; an indicator for whether the school is a voucher school; the school's average 10th-grade SIMCE score in 2018; the share of female students in the school; and class size.

threats related to selective attrition in the survey data.

Validity A key requirement for the validity of our analyses is that the allocation of students to treatments was random and that, as a result, there are no systematic differences in potential confounders between treatment and control groups. We test this by comparing groups across a rich set of predetermined characteristics from administrative data and the baseline survey. To do so, we estimate simple OLS regressions of each predetermined characteristic on treatment group indicators. We report differences for three comparisons relative to the control group: (i) students in information-only schools; (ii) students in information-plus-counseling schools; and (iii) students selected for counseling within information-plus-counseling schools. Figure **??** summarizes the results of these balancing tests. The randomization yielded groups that are balanced in demographic and socioeconomic characteristics, prior academic performance, baseline aspirations, perceived and actual knowledge of higher education, and survey response rates. The only small difference we find is in school sector: schools assigned to any treatment are around 2 percentage points (x%) more likely to be public than voucher schools. Because public schools typically serve more disadvantaged students, this difference likely biases against detecting positive effects. Importantly, all metrics of socioeconomic disadvantage are balanced, suggesting that this sector difference does not translate into meaningful differences in predictors of higher education attendance. To confirm this, we estimate a predictive index of higher education enrollment using the cohort graduating one year before our sample and apply it to our sample. The dark bar at the bottom of each panel shows no difference in this predicted index between treated and control groups.

A second key requirement—relevant for analyses of endline survey outcomes—is the absence of selective attrition in survey responses. Table **??** shows that response rates were similar across control (x%), information-only (51.6%), and information-plus-counseling (48.4%) schools. However, students assigned to the full counseling program were X percentage points (x%) more likely to answer the survey. As in the baseline survey, respondents are positively selected. Because this positive selection is less pronounced in the full counseling arm, estimated improvements in perceived or actual knowledge likely understate true effects. Thus, in the main text we present estimates without correcting for selective attrition as they are more conservative. In the Online Appendix **??** we report Lee

bounds (Lee, 2009) for all outcomes measured in the endline survey. The bounds support the interpretation that our interventions did change both perceived and actual knowledge about higher education.

Interpretation Participation in both the information-only and counseling components was voluntary. All randomized schools accepted the support, but student-level compliance was imperfect. Table **??** reports take-up. To assess exposure to the information material, the endline survey showed respondents a picture of the leaflet and asked whether they had seen it. Among respondents, 46% in information-only schools and 48% in information-plus-counseling schools reported having seen it, versus less than 2% in control schools. This indicates that the material reached a substantial share–but not all–students in treated schools, reflecting both imperfect delivery and imperfect recall. For counseling, attendance records show that 57% of selected students attended at least one session and 22% completed all four sessions. These figures are consistent with high levels of post-pandemic absenteeism; in 2022, for instance, 53% of students were absent more than 10% of the time (**?**).[12]

Our main estimates are intent-to-treat estimates that capture the effect of assignment to each treatment regardless of take-up. With imperfect compliance, these estimates likely understate the effect of actually receiving the information materials or counseling, but they are relevant policy parameters. We do not scale to treatment-on-the-treated because appropriate scaling is ambiguous. For the information-only treatment, dividing by the share reporting exposure would conflate recall error and omit peer spillovers. For counseling, dividing by the share attending at least one session ignores variation in intensity and potential interactions between students assigned to the treatment. We therefore report ITT estimates throughout and use complementary evidence to discuss mechanisms.

6 Results

This section presents the main results of the paper. We begin with the effects of the information package and the full counseling program on higher education trajectories—the

[12]The same report of the Ministry of Education indicates that the rates of cronic absenteeism have remained above 41% in 2024, with them being even higher among disadvantaged students.

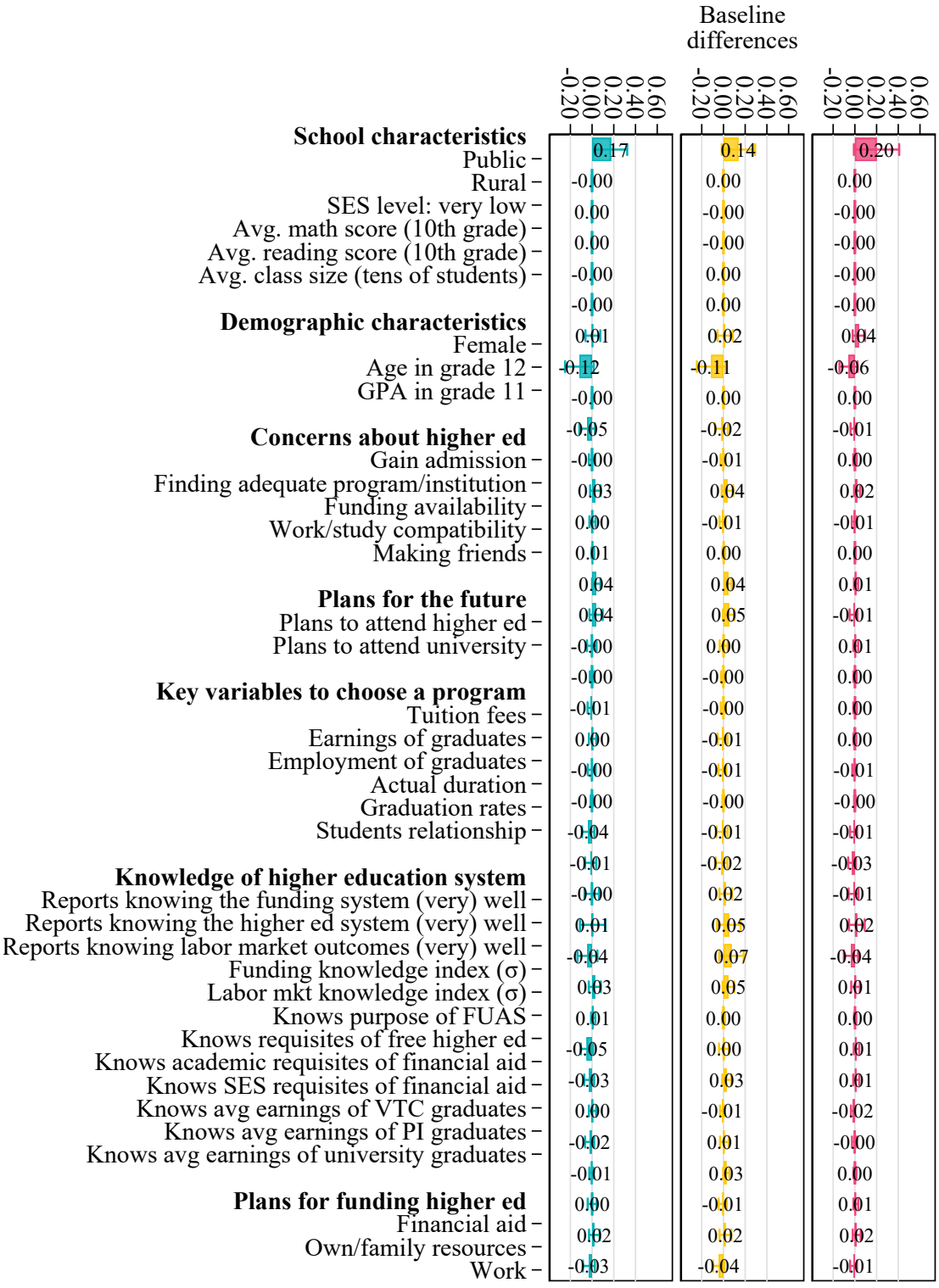


Figure 2: Balance between control and treatmen groups

Notes: The figure illustrates balance between control and treatment groups in a rich vector of pre-determined characteristics measured in either administrative or survey data. Each bar represents an estimate coming from an independent specification in which we regress the variable on the right of the figure on a dummy variable that indicates the treatment group to which a student was assigned. Green bars illustrate the difference between students in the control group and in a school assigned to the information only treatment group; yellow bars illustrate the difference between students in the control group and in schools assigned to the information plus counseling group; and pink bars illustrate the difference between students in the control group and assigned to the full counseling program. Confidence intervals at the 95% level are presented for each estimate.

Table 3: Program Take-Up and Implementation

	Panel A: Information Treatment Implementation		
	N. of Students Allocated (1)	Sh. Answering exit Survey (2)	Sh. Receiving the letter (3)
Control schools	10067	0.302	0.000
Information only schools	8755	0.315	0.205
Information plus counseling schools	8797	0.370	0.357
Information plus counseling students	814	0.340	0.061

	Panel B: Counseling Program Participation		
	Total students assigned to the program (1)	Share participating in at least one session (2)	Share participating in all four sessions (3)
Information plus counseling students	814	0.628	0.220

Notes: The table describes the implementation and take-up of our interventions. Panel A describes the implementation of the information package in each treatment arm. It describes the share of students in each group answering the survey and reporting to have received the information package. Panel B describes the implementation of the group counseling program and reports the share of students attending at least one counseling session and the share attending all four counseling sessions.

outcomes we ultimately aim to impact. We then examine changes in students' understanding of the higher education system and heterogeneous effects that inform mechanisms. We conclude with a brief cost–benefit analysis.

6.1 Effects on Higher Education Trajectories

This section shows that while the information package on its own does not seem to have changed students' trajectories after high school, the full counseling program increased applications, enrollment, persistence and graduation from higher education. For these analyses, we rely on rich administrative data that allow us to track students at every step of the transition to higher education—registration and performance on the college admission exam, funding applications, and enrollment. These data also allow us to track students in higher education, which we exploit to study whether changes in enrollment translate into persistence and progression. Because all analyses in this subsection use administrative data, selective attrition is not a concern.

Table **??** summarizes the results on the educational outcomes we specified in the pre-analysis plan. In addition to the relevant estimates and their standard errors, the table reports q-values following the procedure proposed by Simes (1986) to account for multiple

hypothesis testing. As shown in the first row of the table, the information package alone does not seem to have changed students' trajectories. Relative to the control group, we find no significant effects on registration or performance in the university admission exam, on the probability of applying for funding, on the probability of applying to university, or on enrollment in higher education up to three years after high school completion. Online Appendix **??** shows that these results also hold when looking at these outcomes immediately after completing high school (i.e., in 2022). The lack of significant effects of the information package on students' trajectories is consistent with a vast body of research showing that information alone is typically not enough to impact behavior (). Students receiving the information package and having classmates assigned to the full counseling program do not experience relevant changes in their trajectories either. We find a marginally significant increase in their probability of registering for the university admission exam, but this increase does not translate into any significant change in the other outcomes we study. In contrast, students assigned to the full counseling program experience large and significant changes in their trajectories. They become 13 percentage points (20%) more likely to register for the university admission exam and 11 percentage points (23%) more likely to actually take the exam. They also become 7 percentage points (10%) more likely to apply for funding, 5 percentage points (24%) more likely to apply to university, and 7 percentage points (13%) more likely to enroll in higher education. Our estimate on higher education enrollment represents a large effect; it accounts for 44% of the 16 percentage-point gap between academic and vocational track students described in Section 3.

Figure **??** illustrate the estimates in the table, and expand the analysis to outcomes that although were not part of the pre-analysis plan, add some interesting insights to understand the effects of the program. The bars on each panel represent ITT estimates of being assigned to the information-only (left), to the information-plus-peers-in-counseling (middle), and to the full counseling program (right) treatment groups. In addition to the estimates and their 95% confidence intervals, the figures present outcome means for the control group in the left top corner. As shown in the panel (e) and (f) of the figure, two-thirds of the effects of the counseling program on enrollment are driven by an increase in enrollment in technical degrees (4.8 percentage points) and one-third by an increase in enrollment in bachelor's degrees (2.3 percentage points). Consistent with this pattern,

when characterizing the programs by their duration, we find that most of the effect is driven by student enrollment in short-technical degrees, which last less than 2.5 years (panels g and h). Considering that students in our sample come from disadvantaged backgrounds, this pattern is not surprising. For these students, the opportunity cost of enrolling in a longer degree is high, and the financial aid system does not have any instrument to compensate for foregone earnings. In addition, these are degrees that typically require lower levels of academic preparation, so they are more accessible for our sample. In terms of fields, panel l document increases in enrollment in health (3 percentage points), services (1.5 percentage points), STEM (1.1 percentage points), education (0.9 percentage points), and business and law (0.8 percentage points) degrees. The relative relevance of fields among students in the control and in the full counseling group is similar, with health and services being slightly overrepresented among students in the full counseling program.

A critical question is whether the enrollment gains we document translate into persistence and degree completion. Since the intervention was implemented in 2021 and students graduated from high school in late 2021, the earliest they could have enrolled in higher education is 2022. Figure **??** tracks students through their first two years after high school to assess whether the effects persist beyond initial enrollment.

We begin by examining one-year re-enrollment, defined as enrolling in higher education in 2022 and re-enrolling in 2023, or enrolling for the first time in 2023 and re-enrolling in 2024. Panel (a) shows that by 2023, the counseling program increased enrollment by 6.5 percentage points—slightly below the 7 percentage-point effect observed by 2024. Panel (b) demonstrates that this effect persists: students assigned to counseling are 6.6 percentage points (16%) more likely to both enroll and re-enroll one year later.

To assess longer-term persistence, we examine two-year outcomes. For this analysis, we define persistence as enrolling in 2022 and either remaining enrolled in 2024 or having already graduated, thereby accounting for students who complete short-term degrees. Panel (c) shows that students in the counseling program were 4.8 percentage points (14%) more likely to enroll immediately after high school completion in 2022—representing roughly 70% of the total enrollment effect by 2024, which indicates that most enrollment occurs shortly after graduation. Panels (d) and (e) reveal continued gains: counseling increases the probability of enrolling in 2022 and re-enrolling in 2023 by 5 percentage points (18%), and increases the probability of enrolling in 2022 and persisting or graduating by 2024 by

4.7 percentage points (20%).

These patterns demonstrate that counseling not only increases initial enrollment but also supports persistence and completion. Remarkably, panel (f) shows that roughly half of the persistence effect by 2024—2.8 percentage points—comes from students who enrolled in 2022 and completed their degree by 2024. In contrast, neither the information-only treatment nor the information-plus-peers treatment generates significant changes in any of these outcomes.

Finally, to verify that effects on enrollment discussed in this section operate through actual participation in the counseling program, we examine heterogeneity by school attendance in grade 12. Online Appendix **??** shows that attendance is balanced across treatment groups, and that when assigned to the full counseling program, it predicts the number of sessions actually attended. We split the sample in three groups based on school attendance—i.e., less than 85%, between 85% and 95%, and at least 95%—, and find that the effects are driven by students in the latter group. Indeed, students with at least 95% attendance participate on average in XX sessions, and as a result become 13.5 percentage points more likely to enroll in higher education. We find no significant effects for students with lower levels of school attendance.

Table 4: Counseling Effects on Higher Education Trajectories

	Pr. Registers for PDT (1)	Pr. Takes the PDT (2)	Pr. of applying for funding (3)	Pr. of university application (4)	Pr. of enrolling in higher ed. (5)
Information	-0.015	-0.007	-0.037	-0.011	-0.029
	(0.026)	(0.025)	(0.026)	(0.015)	(0.023)
	[0.694]	[0.836]	[0.274]	[0.635]	[0.297]
Information plus peers with counseling	0.051**	0.034	0.006	0.018	-0.002
	(0.022)	(0.022)	(0.019)	(0.014)	(0.018)
	[0.061]	[0.271]	[0.836]	[0.297]	[0.923]
Information plus counseling	0.131***	0.112***	0.073***	0.049**	0.069***
	(0.024)	(0.024)	(0.022)	(0.022)	(0.021)
	[0.000]	[0.000]	[0.005]	[0.074]	[0.005]
Observations	27619	27619	27619	27619	27619
Control mean	0.647	0.487	0.720	0.201	0.532

The table presents results of specification (**??**) using adminisrative records from the Ministry of Education and the agency in charge of the university admission system, which prevent issues related to attrition. All specifications control for school characteristics including the share of female students in the cohort, whether the school is a private voucher school, whether the school is located in a rural area, and academic performance of students from the previous year measured by high school GPA and tenth grade standardized exam scores in mathematics and Spanish. These controls are not needed for identification, but allow us to gain statistical power. Standard errors clustered at the school network level—the level at which we randomized the treatments—are presented in parentheses. In addition, Q-values computed according to Simes (1986) to account for multiple hypothesis testing are presented in square brackets. Columns (1) and (2) study the effect of our interventions on the probability of registering and taking the university admission exam by 2024. Column (3) focuses on the probability of applying to financial aid through the FUAS form by 2024; column (4) on the probability of applying to university by 2024; and column (5) on the probability of enrolling in higher education by 2024. * p-value < .1, ** p-value < .05, *** p-value < .01



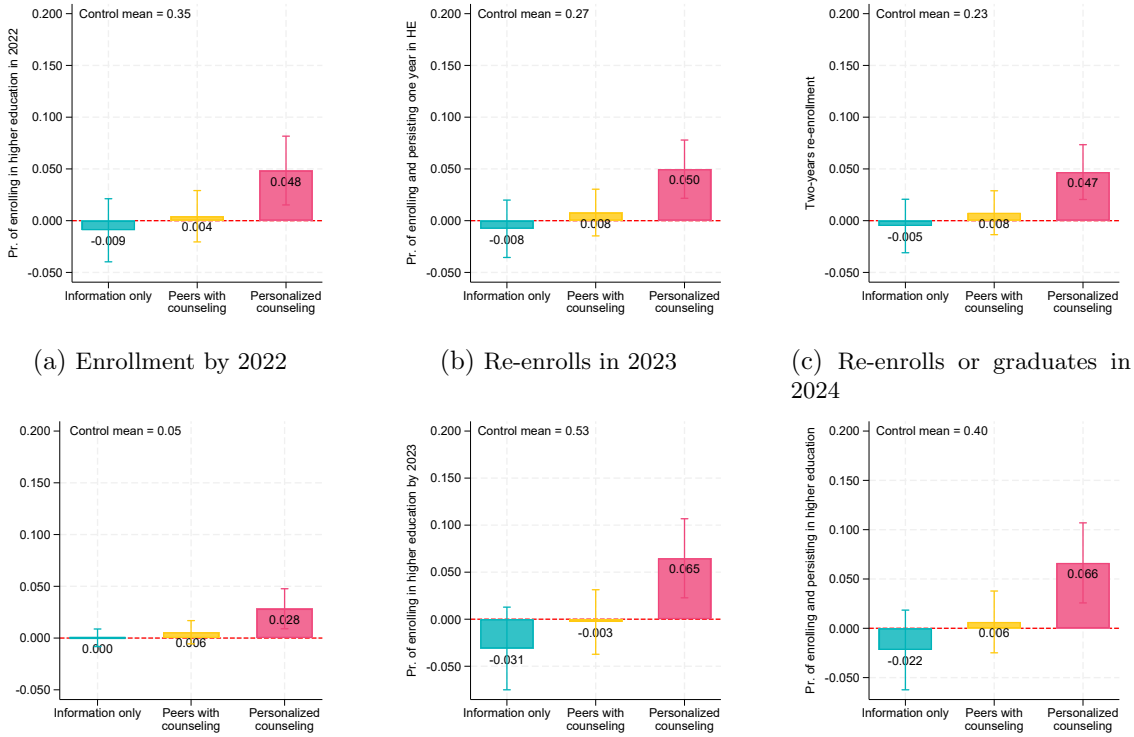
(a) Registers PDT (b) Takes PDT (c) Applies for Funding

(d) Enrolls by 2024 (e) Enrolls in Vocational Degree (f) Enrolls in Bachellor's Degree

(g) Enrolls in Short Program (h) Enrolls in Long Program (i) Field of Study

Figure 3: Counseling Effects on Higher Education Trajectories

Notes: This figure illustrates the effects of assignment to any of the three treatment arms we study: information only (green bars), information and peers in counseling (yellow bars), and information and counseling (pink bars). The bars represent estimates of the parameters α_1, α_2, and α_3 from specification (1); the vertical lines on top of the bars illustrate 95% confidence intervals. Control means are reported at the top of each panel. Panel (a) shows the effect on the probability of registering for the university admission exam, panel (b) on actually taking the exam, panel (c) on applying for financial aid through the FUAS form, panel (d) on enrolling in any higher education program by 2024, panel (e) on enrolling in any vocational degree program by 2024, panel (f) on enrolling in a bachelor's degree program by 2024, panel (g) on enrolling in a short higher education program (less than 2.5 years) by 2024, panel (h) on enrolling in a long higher education program (4 years or more) by 2024, and panel (i) on enrolling in different fields of study.



(a) Enrollment by 2022

(b) Re-enrolls in 2023

(c) Re-enrolls or graduates in 2024

(d) Graduates by 2024

(e) Enrolls by 2023 (2022-2023)

(f) Re-enrolls one year later

Figure 4: Re-enrollment and Graduation

Notes: This figure shows the effects of the three treatment arms we defined: information only (green bars), information and peers in counseling (yellow bars), and information and counseling (pink bars). Bars represent estimates of α_1, α_2, and α_3 from specification (1). The vertical lines on top of the bars illustrate 95% confidence intervals. Panel (a) shows enrollment in higher education by 2022. Panel (b) shows re-enrollment in 2023. Panel (c) shows re-enrollment or graduation by 2024. Panel (d) shows graduation by 2024. Panel (e) shows enrollment by 2023 (either 2022 or 2023). Panel (f) shows re-enrollment one year after initial enrollment. One year re-enrollment is defined by a dummy variable that takes value one if a student enrolls in year t and re-enrolls in year $t+1$. Two year re-enrollment is defined by a dummy variable that takes value one if a studenr enrolls in year t and re-enrolls in years $t+1$ and $t+2$. Since some students enroll in short programs, when studying two-year re-enrollment we also define as one students who enroll in t, re-enroll in $t+1$ and appear as having completed their degree by $t+2$. Control means are reported at the top of each panel.

6.2 Effects on Understanding of the Higher Education System

This section discusses how the information package and the full counseling program affected students' understanding of the higher education system. This evidence sheds some light on the mechanisms behind the results in Section 6.1 and helps explain why information alone did not shift behavior. The analyses rely on the endline survey administered at the end of the 2021 school year. As noted in Section 5, response rates were higher among students assigned to counseling. Because survey respondents are positively selected on socioeconomic background and prior achievement, this differential response—i.e., which means that the students assigned to the counseling program who answer the survey are less positively selected—likely works against finding gains in understanding for the counseling group. As a robustness check, Online Appendix **??** reports Lee bounds (**?**) that account for differential attrition across treatment groups and corroborate the results presented here.

Table **??** and panels (a)–(f) of Figure **??** report effects on actual and perceived understanding, outcomes that were specified in the pre-analysis plan. In addition to the estimates and their standard errors, the table presents q-values computed following Simes (1986) to address multiple testing. We first study changes in actual knowledge. The exit survey tested students' knowledge on different dimensions of the higher education system, including funding opportunities and labor-market trajectories of higher education graduates. To reduce dimensionality, we build three knowledge indices—an overall knowledge index, a financial-aid index, and a labor-market index—using the first principal component of the corresponding question sets (Online Appendix **??** presents item-level results). Assignment to the information-only or to the information-plus-peers-in-counseling treatments yield marginally significant improvements in the overall knowledge index—about 0.09σ. The q-values associated to these estimates, however, are well above 0.1. In contrast, the full counseling program increases overall knowledge by 0.28σ, a coefficient that remains significant even after adjusting for multiple hypothesis testing. When investigating the topic-specific indices, we find that while students in the three treatment groups experienced somehow similar gains in their understanding of labor market trajectories, only students assigned to the full counseling program experienced significant gains in their understanding of the financial aid system. Indeed, students assigned to the full counseling program improved their financial-aid knowledge by 0.30σ, while students in

the information-only and in the information-plus-peers-in-counseling group experienced non-statistically significant gains of 0.035σ and 0.075σ, respectively. Assignment to the full counseling program uniquely increased financial-aid knowledge; given the importance of funding in our setting, this is likely one of the reasons why trajectories changed for students assigned to counseling and not for students in the other two treatment arms.

Next, to assess changes in perceived understanding of the system, we asked students how well they knew financial aid opportunities, application procedures, and labor-market returns, and defined outcomes as indicators for them reporting well or very well. Correcting biases without improving students trust in their knowledge might not be enough to change their behavior. Indeed, the results of Dynarski et al. (2021b) indicate that providing information on funding availability must be coupled with measures that reduce student uncertainty to meaningfully affect applications and enrollment desicions. In the setting we study, only students assigned to the full counseling program exhibit sizable gains in perceived knowledge. Consistent with larger gains in actual learning about funding, the share of students assigned to the counseling program reporting to understand financial aid well or very well rises by 21 percentage points (45%). We also find significant increases in the share of these students reporting to understand application procedures—11 percentage points (21%)—and labor-market returns—11 percentage points (28%). Notably, despite similar actual-knowledge gains on labor-market trajectories across the three treatment arms, perceived understanding in this dimension rises only for students assigned to counseling, which suggests that the differences in the effects we find on perceived understanding are not just a mechanical consequence of differences in actual learning.

We complement these analyses with the results in panels (g)–(l), which illustrate changes in the sources students rely on to learn about higher education. The endline survey asked students to select their most important information sources; options included relatives, teachers, classmates, neighbors, official websites, and private websites (Online Appendix **??** reports the full set of results). From these responses, we constructed indicator variables equal to one if a source was selected among a student's most important sources.

Panel (g) shows that students in all treatment arms are less likely than the control group to report relatives as an important source; the reduction is largest for students assigned to the full counseling program—i.e., 10 percentage points (16%). Panel (h)

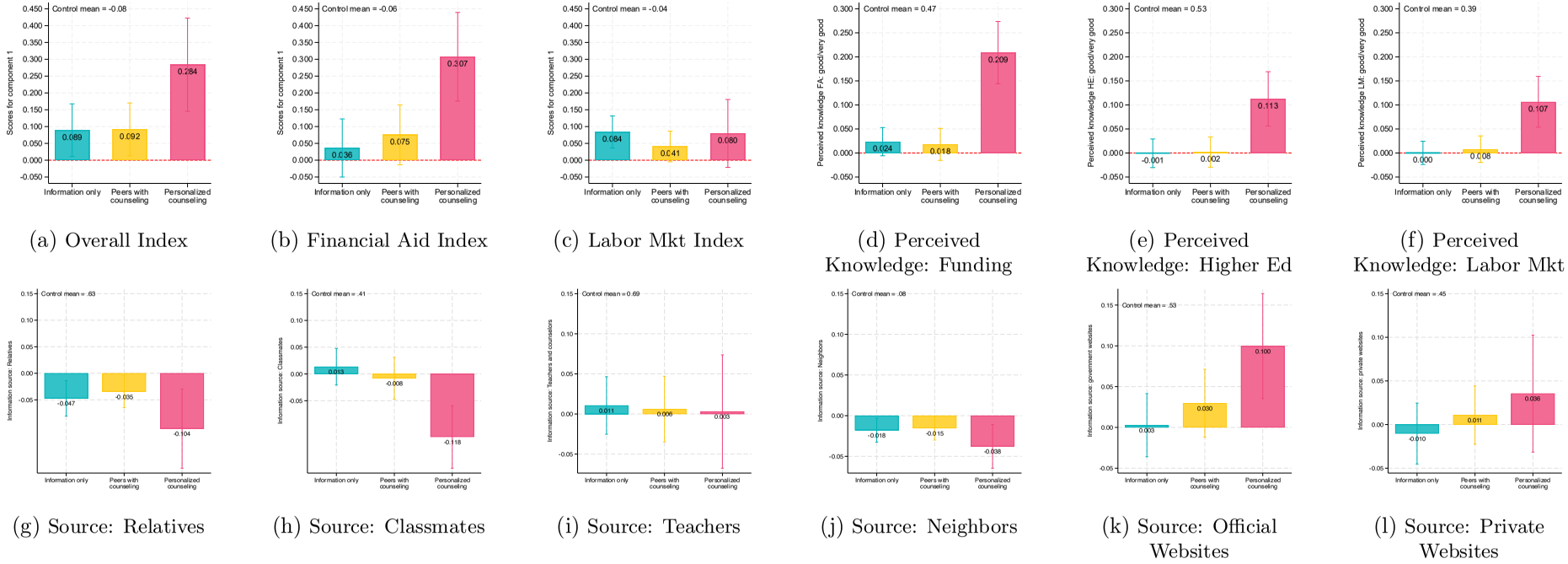
shows that students in the information-only and information-plus-peers-with-counseling arms report classmates as an important source at similar rates to the control group, whereas students assigned to counseling are 10 percentage points (20%) less likely to do so. Panel (i) shows no material change in reliance on teachers across arms. Panel (j) shows low baseline reliance on neighbors—8% in the control group—but still significant declines of about 1.5 percentage points in the information-only and information-plus-peers arms, and a decline of nearly 4 percentage points in the counseling arm. Panel (k) shows that reliance on official websites significantly increases only for students assigned to counseling—10 percentage points (19%). Finally, panel (l) shows no significant changes in reliance on private websites in any of the treatment arms. These patterns suggest that assignment to counseling not only improves knowledge through the direct information the program provide to students but also by connecting and encouraging them to use more reliable sources of information.

Overall, counseling meaningfully improves both actual and perceived understanding of the higher education system—especially of financial aid—and shifts students toward trustworthy information sources. In a context where few parents have higher-education experience, reducing reliance on informal networks and strengthening informed guidance addresses key barriers to enrollment.

Table 5: Counseling Effects on Students' Understanding of the System

	Overall Knowledge Index (1)	Financial Aid Knowledge Index (2)	Labor Markets Knowledge Index (3)	Financial Aid Perceived Knowledge (4)	Applications Perceived Knowledge (5)	Labor Market Perceived Knowledge (6)
Information	0.089*	0.036	0.084***	0.024	-0.001	0.000
	(0.048)	(0.053)	(0.029)	(0.018)	(0.018)	(0.015)
	[0.141]	[0.630]	[0.013]	[0.294]	[0.988]	[0.988]
Information plus peers with counseling	0.092*	0.075	0.041	0.018	0.002	0.008
	(0.048)	(0.054)	(0.028)	(0.020)	(0.019)	(0.017)
	[0.141]	[0.294]	[0.281]	[0.520]	[0.988]	[0.764]
Information plus counseling	0.284***	0.307***	0.080	0.209***	0.113***	0.107***
	(0.084)	(0.080)	(0.061)	(0.039)	(0.034)	(0.032)
	[0.005]	[0.002]	[0.294]	[0.000]	[0.005]	[0.005]
Observations	7394	7424	7726	8746	8746	8746
Control mean	-0.079	-0.064	-0.039	0.468	0.529	0.389

Note: The table presents results of specification (??) estimated in the subsample of students who answered the exit survey. All specifications control for school characteristics including the share of female students in the cohort, whether the school is a private voucher school, whether the school is located in a rural area, and academic performance of students from the previous year measured by high school GPA and tenth grade standardized exam scores in mathematics and Spanish. These controls are not needed for identification, but allow us to gain statistical power. Standard errors clustered at the school network level—the level at which we randomized the treatments—are presented in parentheses. In addition, Q-values computed according to Simes (1986) to account for multiple hypothesis testing are presented in square brackets. Columns (1) to (3) study the effect of our interventions on actual knowledge measured by indexes that we built using the first component of a principal component analysis of a vector containing questions included in the exit survey to measure students' understanding of different dimensions of the higher education system. Columns (4) to (6) study the effect of our interventions on perceived knowledge. In the exit survey, students were asked how well they believed they knew three dimensions of the higher education system: funding opportunities, application procedures, and labor market outcomes of graduates. The outcomes used in these columns correspond to dummy variables that take value one if students reported knowing these dimensions well or very well (the other two options that students could choose were poorly or very poorly). * p-value < .1, ** p-value < .05, *** p-value < .01



(a) Overall Index (b) Financial Aid Index (c) Labor Mkt Index (d) Perceived Knowledge: Funding (e) Perceived Knowledge: Higher Ed (f) Perceived Knowledge: Labor Mkt

(g) Source: Relatives (h) Source: Classmates (i) Source: Teachers (j) Source: Neighbors (k) Source: Official Websites (l) Source: Private Websites

Figure 5: Counseling Effects on Students' Understanding of the System

Notes: This figure shows the effects of the three treatment arms we defined—information only (green bars), information plus peers in counseling (yellow bars), and information plus counseling (pink bars)—on students' understanding of the higher education system. Bars represent estimates of the parameters α_1, α_2, and α_3 in specification (1). The vertical lines on top of the bars illustrate 95% confidence intervals. Panels (a) to (c) show effects on actual knowledge measured by indexes that we built using the first component of a principal component analysis of a vector containing questions included in the exit survey to measure students' understanding of different dimensions of the higher education system. Panels (d) to (f) show effects on perceived knowledge. In the exit survey, students were asked how well they believed they knew three dimensions of the higher education system: funding opportunities, application procedures, and labor market outcomes of graduates. The outcomes used in these panels correspond to dummy variables that take value one if students reported knowing these dimensions well or very well (the other two options that students could choose were poorly or very poorly). Panels (g) to (l) show effects on the sources from which students reported obtaining information about higher education. The outcomes used in these panels correspond to dummy variables that take value one if students reported using each of the indicated sources to obtain information about higher education. Control means are reported at the top of each panel.

6.3 Heterogeneous Effects

This section examines heterogeneous effects to shed light on the mechanisms behind the large enrollment gains documented in Section 6.1. We focus exclusively on students assigned to the full counseling program, as it is the only treatment arm that significantly altered educational trajectories. By studying how three key outcomes—enrollment in higher education, actual knowledge (measured by the knowledge index), and perceived knowledge of financial aid—vary across student subgroups, we aim to understand which students benefit most from counseling and why.

We investigate heterogeneity along four predetermined dimensions: parental education, parental expectations, baseline knowledge, and baseline perceived knowledge. The first two dimensions use data from surveys parents answered when their children took the fourth-grade standardized exam. We rely on fourth-grade data rather than eighth- or tenth-grade exams because our cohort was not tested in those grades; the tenth-grade exam, scheduled for 2019, was canceled due to social unrest. Since the fourth-grade exam is administered to every cohort, we combine responses across multiple cohort administrations to handle grade repeaters. The latter two dimensions draw on the baseline survey administered at the start of the 2021 school year. As discussed in Section 3, only 35% of invited students completed the baseline survey, and respondents were positively selected on socioeconomic background and prior achievement. The endline survey exhibited similar response rates and selection patterns. Consequently, treatment effects on survey-based outcomes are smaller among respondents than in the full sample. Nevertheless, the heterogeneity patterns we document remain informative about mechanisms.

Importantly, we find no significant differences in take-up rates across subgroups. Online Appendix C shows that all student types had similar probabilities of attending at least one counseling session and of completing all four sessions. This rules out differential participation as an explanation for the heterogeneous effects we observe.

Figure 6 presents the main results. Each row corresponds to one dimension of heterogeneity, and each column shows effects on a different outcome. For each dimension, we split the sample into students with low versus high levels of the characteristic and estimate our main specification separately for each subgroup. The bars display treatment effects for students with low (left) and high (right) levels of the characteristic, with 95% confidence intervals and control-group means at the top of each bar.

Parental Education. Panel A shows that students whose mothers did not complete high school experienced substantially larger enrollment gains than students whose mothers completed at least high school. The enrollment effect for the low-education group is 11 percentage points (20% relative to the control mean), compared to 3 percentage points (5%) for the high-education group. This pattern suggests that counseling nearly closed the enrollment gap between these two groups. Effects on actual knowledge (middle panel) follow a similar pattern, though the confidence intervals overlap. Students from households with less-educated mothers gained 0.35σ in knowledge, versus 0.18σ for students with more-educated mothers. In contrast, gains in perceived knowledge (right panel) are comparable across groups—both around 20 percentage points—indicating that the program improved confidence in understanding financial aid regardless of parental background.

Parental Expectations. Panel B reveals a similar pattern. Students whose parents did not expect them to attend higher education experienced enrollment gains of 12 percentage points (23%), compared to 4 percentage points (7%) for students whose parents held higher expectations. This 8 percentage-point difference is substantial and suggests that counseling was especially valuable for families where higher education was not part of the original plan. The pattern for actual knowledge mirrors that for enrollment, with larger gains for students from families with lower expectations. Once again, perceived knowledge gains are similar across groups, suggesting that the program successfully boosted confidence for all participants.

Baseline Knowledge. Panel C examines heterogeneity by students' baseline knowledge of the higher education system. We define high knowledge as scoring above the third quintile on the baseline knowledge index. Students with low baseline knowledge experienced enrollment gains of 9 percentage points (17%), compared to 5 percentage points (9%) for those with high baseline knowledge. Interestingly, when we examine changes in knowledge itself, the pattern reverses: students who started with higher knowledge appear to have learned more, though the estimates are imprecise and we cannot reject equality across groups. This may reflect ceiling effects for low-knowledge students on our knowledge measure, or it may indicate that students with some foundational knowledge were better positioned to absorb the information provided during counseling. Despite differential gains in actual knowledge, perceived knowledge increased similarly for both groups, with both experiencing gains of approximately 20 percentage points.

Baseline Perceived Knowledge. Panel D splits the sample by whether students reported knowing the funding system well or very well at baseline. Students who lacked confidence in their knowledge at baseline saw enrollment gains of 10 percentage points (19%), versus 6 percentage points (10%) for students who were already confident. This suggests that counseling was particularly effective at converting uncertainty into action. The pattern for actual knowledge follows a similar trajectory, with larger (though imprecise) gains for students who started with lower confidence. Perceived knowledge increased substantially for both groups—around 20–25 percentage points—though the increase was mechanically larger for students who did not report high confidence at baseline.

Across all four dimensions, a consistent pattern emerges: counseling generated the largest enrollment gains for students from backgrounds where support is likely weaker and where obtaining reliable information is more difficult. The intervention essentially closed enrollment gaps between students from lower and higher socioeconomic backgrounds, between students whose parents had lower versus higher expectations, and between students with less versus more baseline knowledge and confidence. In terms of mechanisms, these results suggest that counseling filled critical gaps in both information and guidance that disadvantaged students could not easily access through family networks or other sources. Even when gains in actual knowledge were similar across groups, enrollment effects remained concentrated among the most disadvantaged, suggesting that counseling provided more than just information—it also offered encouragement, clarification, and actionable support tailored to students' specific circumstances.

The patterns for perceived knowledge are particularly revealing. Unlike actual knowledge and enrollment, gains in confidence about understanding financial aid were broadly distributed. Nearly all students, regardless of background, reported substantially higher confidence after participating in counseling. This suggests that while counseling had the largest behavioral impacts on disadvantaged students, it successfully improved psychological barriers—such as uncertainty and lack of confidence—for a wide range of participants. Combined with the patterns in actual knowledge, these results underscore that counseling addressed multiple barriers simultaneously: it provided accurate information to those who lacked it, reduced uncertainty for those who were confused, and built confidence for those who doubted their understanding.

6.4 Cost–Benefit Analysis

We conduct a cost-benefit analysis of the full counseling intervention—information package plus group counseling—relative to the control group. Our approach projects lifetime earnings for each student based on observed educational outcomes and estimates the present value of costs and benefits over the working life. Here we summarize the key assumptions and results, with detailed technical documentation in Online Appendix E.

Costs. We distinguish between two cost components. First, intervention costs include the per-student expense of delivering the information package ($2.26) and group counseling ($95.18). Second, tuition costs capture expected higher education expenses. We calculate expected tuition as annual tuition times expected years enrolled, accounting for program duration and treatment-group-specific dropout probabilities from administrative follow-up through 2024. For the control group, 23% dropout in year 1 and 11% in year 2. For the full counseling group, these rates are 20% and 10%, respectively.

Benefits. To estimate lifetime earnings, we employ Mincer-type earnings equations estimated on Chile's 2024 National Socioeconomic Survey (CASEN). For each student, we predict age-specific earnings by seven education levels—never-enrolled, dropout, or degree completion in vocational training centers, professional institutes, and universities—and gender using flexible education-age interactions. We adjust earnings for employment rates associated with each educational level using CASEN data.

We project earnings from age 19 to retirement (65 for men, 60 for women), applying a 2% real wage growth rate and a 5.5% discount rate in the baseline specification. We account for treatment-group-specific differences in entry timing: 35% of the control group enrolled in higher education by 2022 versus 39.8% in the full counseling group; these figures reach 59% and 66% by 2024, respectively. We assume students with delayed entry earn high-school wages in years before higher education entry.

Results. Table D.III reports baseline and sensitivity results across five scenarios. The baseline scenario yields an incremental earnings gain of $6,160 per student. From a social perspective—including tuition as a government cost—the incremental NPV is $5,689 per student with a benefit-cost ratio of 13.16. From an individual perspective—excluding government-financed tuition—the NPV is $6,058 per student with a benefit-cost ratio of 63.21.

Importantly, returns remain strongly positive across all sensitivity scenarios varying

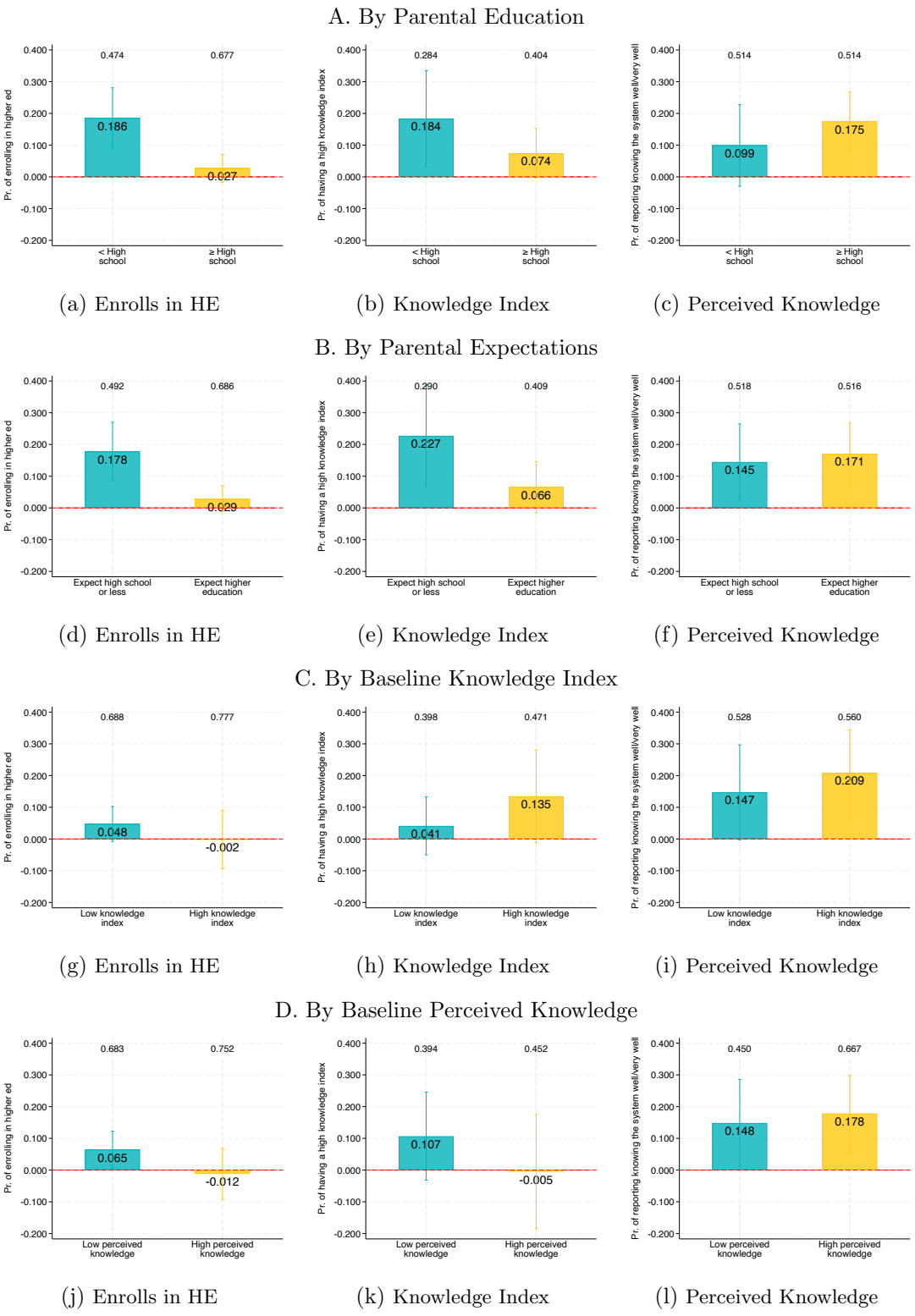
wage growth (1%–3%) and discount rates (4%–7%), with benefit-cost ratios above 9 even under conservative assumptions. The economic case is robust: the intervention generates substantial private returns and significant social surplus relative to modest implementation costs.

Assumptions. Our analysis relies on several important assumptions. First, we project lifetime earnings using cross-sectional age-earnings profiles from CASEN 2024, which provides a snapshot of the earnings distribution at a point in time but cannot directly reveal the earnings path of specific individuals. Within a few years, we will be able to observe the actual earnings of program participants through administrative tax records, allowing us to directly evaluate the program's effect on realized earnings. Second, our analysis assumes that expansion of higher education access does not substantially depress returns to education through general equilibrium effects. However, several considerations mitigate this concern: the Chilean higher education system, particularly in the vocational sector, is not at full capacity and the dramatic drop in fertility rates experienced in recent years suggests that it is unlikely to become saturated. In addition, to the extent that increased access translates to improved worker productivity, positive returns should persist. Third, we assume stable labor market conditions and returns to education, though future changes in economic structure could alter the returns to the educational investments we project. Despite these limitations, the sensitivity analysis shows that our conclusions are robust to substantial variation in underlying assumptions.

Table 6: Cost-Benefit Analysis: Full Counseling vs. Control (Five Scenarios, 2021 USD)

Scenario	Wage Growth	Discount Rate	Social Perspective NPV Gain	Social Perspective B/C Ratio	Individual Perspective NPV Gain	Individual Perspective B/C Ratio
Baseline	2%	5.5%	5,689	13.16	6,058	63.21
Scenario 1	2%	4.0%	8,601	19.38	8,972	93.06
Scenario 2	2%	7.0%	3,797	9.12	4,169	43.78
Scenario 3	1%	5.5%	4,340	10.27	4,711	49.34
Scenario 4	3%	5.5%	7,457	16.93	7,828	81.33

Notes: All values in 2021 USD per student, converted from 2021 CLP using the average 2021 exchange rate (1 USD = 759.06 CLP). Earnings are based on Mincer predictions from CASEN 2024, adjusted for population employment rates. Total costs per student: \$467 (intervention \$97 + tuition \$370). B/C Ratio = Earnings Gain / Cost.



(a) Enrolls in HE (b) Knowledge Index (c) Perceived Knowledge

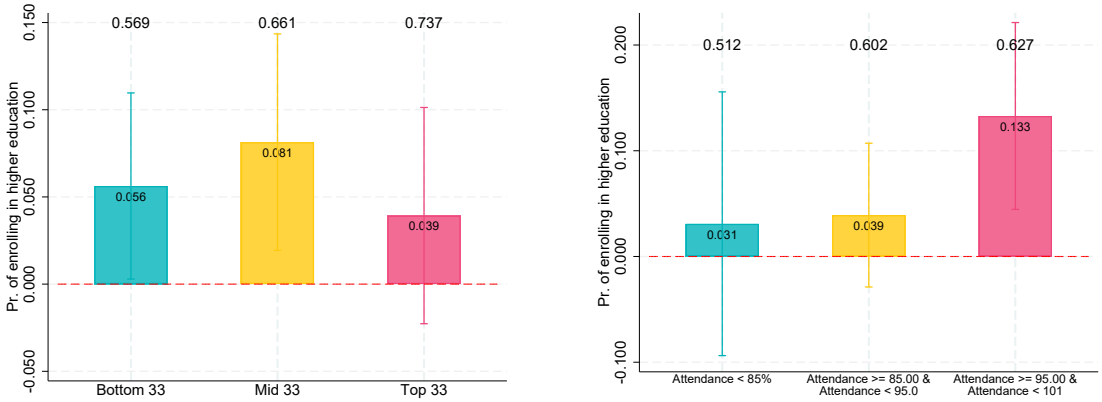
(d) Enrolls in HE (e) Knowledge Index (f) Perceived Knowledge

(g) Enrolls in HE (h) Knowledge Index (i) Perceived Knowledge

(j) Enrolls in HE (k) Knowledge Index (l) Perceived Knowledge

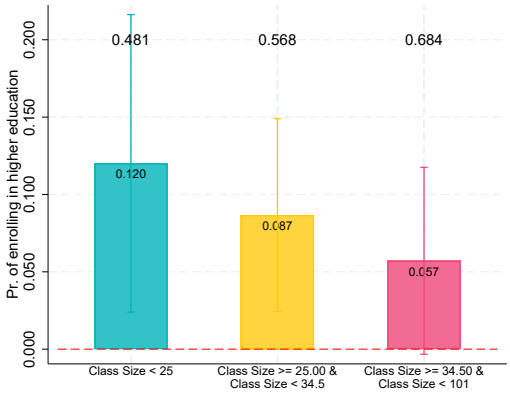
Figure 6: Heterogeneous Effects of Assignment to Information plus Counseling

Note: The figures present ITT estimates of being assigned to the full counseling program for students with low and high levels of parental education (incomplete vs. complete high school), parental expectations (expect student would complete high school vs. higher education), actual knowledge at baseline (bottom two vs top two quintiles), and perceived knowledge at baseline (reported knowing the system poorly or very poorly vs. well or very well). Information on parental education and expectations comes from surveys that parents answer when their kids take standardized exams in grade four—the only grade in which we observe the cohort of students we study taking the exam—while baseline knowledge and perceived knowledge are measured in the entry survey we applied at the beginning of the academic year. Each bar represents the treatment effect of being assigned to information plus counseling for each subgroup of students and the lines on top of the represent the corresponding 95% confidence intervals. Numbers at the top of each bar show control group means. The outcomes we study include enrollment in higher education by 2024, knowledge index at the end of the year—i.e., wether students score in the top two quintiles of the index—, and perceived understanding of financial aid at the end of the year—i.e., whether students report knowing the financial aid system well or very well.

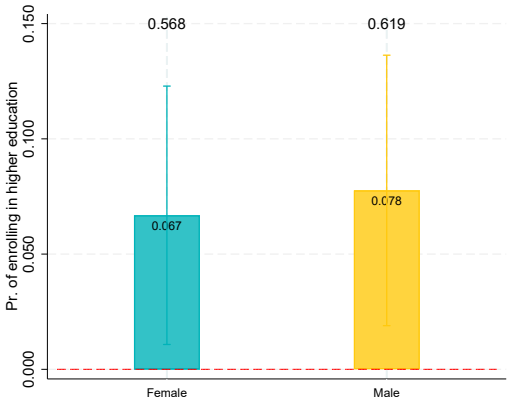


(a) Academic Distribution

(b) Attendance



(c) Class Size



(d) Gender

Figure 7: Heterogeneus effects of the counseling program

7 Conclusion

Persistent disparities in postsecondary education access across socioeconomic groups represent a critical challenge for equity and economic opportunity. Although differences in academic preparation explain part of these gaps, they persist even among talented students with access to financial aid who would benefit substantially from higher education. This widespread phenomenon has motivated numerous interventions aimed at overcoming the information and behavioral barriers that constrain college-going decisions. However, evidence on what works remains mixed: simple information provision has shown limited effectiveness in modifying students' trajectories, while more intensive counseling approaches can be successful but are costly to scale.

This paper evaluates a structured counseling intervention designed to be cost-effective and scalable. Using a randomized controlled trial with 26,853 students across 229 Chilean high schools, we compared three arms: a control group, students receiving an information-only package, and students receiving information combined with four group counseling sessions. We find that information alone increases students' understanding of the higher education system but fails to change their actual enrollment decisions—a finding consistent with prior work highlighting the limits of information-based interventions. In sharp contrast, the full counseling program generates substantial effects on multiple dimensions of students' postsecondary trajectories.

Main findings and benchmarking. Our counseling intervention increased college admission exam registration by 10 percentage points, financial aid applications by 9 percentage points, and higher education enrollment by 7 percentage points. These effects persist through re-enrollment and degree completion, with approximately half of the enrollment gains attributable to students who complete short technical degrees within two years. Notably, heterogeneous treatment effects reveal that counseling was most effective for students facing the greatest barriers to college access: those with lower parental education (11 pp enrollment effect), lower parental expectations (12 pp effect), and limited baseline knowledge. This pattern contrasts sharply with recent findings by **?**, which show that college counseling provided by teachers generates negative effects for lower-performing students while benefiting higher-performing students. Our intervention's ability to generate large positive effects across the ability distribution, particularly benefiting disadvan-

taged students in the middle and lower portions of the academic distribution, suggests that the design and content of counseling programs matter substantially for whose behavior changes. Relative to the enrollment effects documented by **?**, our 7 percentage point enrollment effect is comparable in magnitude, though achieved through a more structured and potentially scalable model that does not require intensive one-on-one advising.

Cost-effectiveness and cost-benefit analysis. The counseling program cost CLP 72,251 per student (approximately USD 85 at 2021 exchange rates), and our cost-benefit analysis accounting for both intervention costs and increased tuition expenditures yields a benefit-cost ratio of 2.19—indicating that every peso invested generates CLP 2.19 in net present value benefits. These returns compare favorably to other educational interventions in the literature. Importantly, when comparing our results to prior work, we note a critical methodological distinction: our cost-benefit calculation includes both the intervention costs and the tuition fees expected to be paid by or on behalf of students enrolling in higher education. Since disadvantaged students often rely on government financial aid programs, the effective private cost of tuition may differ substantially from gross tuition amounts. In contrast, **?** reports cost estimates focused only on intervention delivery, without accounting for differential tuition burdens across students. Our inclusion of tuition costs provides a more comprehensive accounting of total social costs but is not directly comparable to per-student intervention costs in other studies. Nevertheless, the 2.19 benefit-cost ratio reflects substantial returns to the counseling investment, driven primarily by increased lifetime earnings from higher educational attainment.

Toward scalable college counseling. A key innovation of our intervention is its design for potential scalability. Rather than relying on highly trained college counselors or one-on-one advising (the model employed by **?**), we delivered structured group counseling sessions during the school day using a manualized curriculum. This design reduces dependence on rare specialized expertise and creates opportunities for implementation by school-based personnel with appropriate training. The structured format also facilitates quality control and enables adaptation to different contexts. While our current results come from counselors with higher-education expertise, ongoing and future work aims to test whether similar curricula delivered by trained school staff or peer leaders can achieve comparable effects. If so, such an approach could address the widespread shortage of qualified college counselors that constrains access to high-quality advising in many low-resource

schools. The substantial positive effects we document suggest that the bottleneck to expanding college counseling services may not be conceptual—we know what to say about college options and financing—but rather logistical and resource-based. A manualized, group-based approach could help overcome these constraints, making high-quality college counseling accessible to disadvantaged students at scale.

Implications for policy and research. These findings carry important implications for education policy and the design of college-access interventions. First, they demonstrate that overcoming postsecondary access barriers for disadvantaged students requires more than information provision; students need sustained, personalized guidance translated into an interactive group setting. Second, the heterogeneous effects by baseline disadvantage suggest that targeted interventions for the most underserved students can generate the largest returns. Third, the cost-effectiveness of our approach opens a path toward expanding college counseling without proportionally increasing costs, providing a potential solution to widespread counselor shortages. Future research should investigate whether our manualized group-based model maintains effectiveness when delivered by school personnel rather than specialized counselors, and should examine which components of the curriculum drive behavior change.

Beyond expanding access to counseling, policy should also address institutional barriers that currently drain counselor time and capacity. Our results show that students struggle substantially with complex and uncertain financial aid systems—concerns that dominate counseling time in many schools. Simplifying financial aid application processes, reducing documentation requirements, and providing clearer information about aid eligibility and amounts could lower administrative burdens for both students and counselors. By removing these structural obstacles, schools could free counselors to focus on the relational, motivational, and strategic guidance aspects of college advising that may be most difficult to automate or scale. In other words, the most effective approach to addressing counseling scarcity may involve a two-pronged strategy: expand counseling capacity through scalable group-based models while simultaneously reducing the complexity of institutional processes that create unnecessary barriers to enrollment. This combination could substantially improve college access while making efficient use of counselor expertise.

This line of work could ultimately enable schools in low-resource settings to provide high-quality college guidance to all students while maintaining focus on the most value-

added aspects of advising, substantially narrowing gaps in postsecondary access and educational inequality.

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