Catholic schools and student performance: Evidence from Chile's school-admission lottery

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November, 2023

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Abstract

Catholic schools are the largest nongovernmental school network in the world, serving 62.2 million students globally. This paper uses Chilean data to assess the impact of Catholic versus secular voucher or public school attendance on student outcomes. I address admission selection bias by leveraging exogenous variation from school admission lotteries and controls for students' probability of securing a seat in each type of school. My causal estimates reveal that students attending Catholic schools have a 17 percent higher probability of taking the college entry exam (CEE) than those who attend secular public schools. Additionally, Catholic school attendance raises students' chances of scoring above the national mean by 33 percent in math and 45 percent in reading. Catholic school attendance also increases students' probability of applying and being accepted to college. Nevertheless, attending Catholic schools raises dropout rates for boys with low baseline ability. Notably, the positive CEE effects are driven by girl students; however, attending a Catholic school appears to dissuade girls from pursuing STEM majors. Survey evidence reveals that Catholic schools have stricter disciplinary measures and foster higher levels of parent involvement than other public and secular institutions—characteristics commonly associated with high-achieving charter schools.

JEL Codes: I21, I24, I25, I26, J16

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I express my heartfelt gratitude to my esteemed advisors, Sarah Cohodes, Cristian Pop-Eleches, Peter Bergman, Judith Scott-Clayton, and Alex Eble, whose unwavering guidance and support have been instrumental in shaping my paper. A special acknowledgment goes to the professors of the Department of Economics, namely Sandra Black, Miguel Urquiola, Suresh Naidu, Sebastian Otero, and Michael Best, for their generosity with their time and expert advice. Your contributions have played a pivotal role in the development and enhancement of my research. I extend my appreciation to the entire Teachers College community at Columbia University, including individuals such as Samuel Abrams, for generously sharing their profound knowledge in the field of education. My sincere thanks go to my peers, who patiently navigated through the various versions of my paper, offering invaluable insights and constructive comments that significantly contributed to its refinement, specially to Julio Rodriguez. I am also profoundly thankful to the wider community that actively engaged in the seminars where I presented my work. Lastly, I express my gratitude to Roman Andres Zarate and Fabio Sanchez for reading my work and providing me with invaluable feedback.Thank you all for being an integral part of this academic journey.

1 Introduction

Catholic schools are the largest nongovernmental school network in the world; they serve 62.2 million students globally, and their enrollments are surpassed in many countries only by those of state-run institutions[1]. Although Catholic schools are commonly viewed as privately administered and financed establishments, they can also access public funding through school choice programs in many countries. While Catholic schools are often recognized for consistently outperforming their public-school counterparts, the evidence regarding whether their education model truly excels in producing superior academic outcomes remains inconclusive. Furthermore, the distinctive factors that set Catholic schools apart from other educational institutions are not yet clearly defined. In this paper, I provide evidence on the effects of Catholic school attendance on student outcomes and pinpoint how the schools' similarities to high-performing charter schools may be the key mechanisms driving the results.

This study employs data from Chile to evaluate the impact of attendance of Catholic relative to both public and other voucher schools on student outcomes. To address concerns related to potential admission selection bias within Catholic schools, I use exogenous variation stemming from school admission lotteries and control for students' probability of securing a seat in schools of different types. This method enables me to control for factors that cannot be observed and that are linked to parental and student preferences for specific school models, effectively mitigating any potential bias arising from student selection during the admission process.

The paper estimates Catholic schools' academic value-added with experimental variation, enabling the disentanglement of Catholic-run institutions' value-added from that of secular voucher and public schools. I accomplish this by comprehensively identifying all publicly funded schools, comprising both privately administered religious and secular institutions—financed through vouchers—and public schools. This paper also seeks to

[1] Wodon, 2020

enhance our comprehension of the diverse educational models adopted by various types of schools. This analysis relies on comprehensive administrative data on school characteristics and integrates surveys conducted among students, parents, and teachers.

The Chilean context provides an ideal setting for studying the impact of attending a Catholic school. More than 90 percent of schools in Chile admit students through lotteries; both secular and religious institutions privately administer approximately 50% of these schools and receive financing through public school vouchers. This admissions model can be attributed to a 2016 governmental mandate that required all publicly funded schools to adopt a centralized admission system (CAS). The CAS employs a lottery-based mechanism to break ties in oversubscribed schools. The lottery system operates using a deferred acceptance algorithm and ensures that applicants with the same preferences and priorities for school assignments have equal probabilities of securing seats.

Within the collective pool of voucher schools, Catholic-run institutions account for over 14 percent of student enrollment, constituting 15 percent of national primary and secondary enrollment. Over the years, these schools have consistently exhibited superior standardized test performance relative to their public and privately administered counterparts.

The impact of attending Catholic schools has been extensively examined in the United States. Previous studies, includingEvans and Schwab, 1995, Neal, 1997, Jepsen, 2003, and Altonji et al., 2005, have reported mostly positive effects on various academic outcomes. However, these studies often rely on strong identifying assumptions because of the challenges posed by selection into those schools. Factors such as parental preferences or selective admissions processes complicate the estimation. To address these concerns, this paper leverages the CAS and exploits the exogenous variation resulting from the school admission lottery. This methodology is similar to those used to evaluate privately administered charter schools in the United States (Abdulkadiroglu et al., 2017; Dobbie and Fryer, 2011; Clark et al., 2015;J. D. Angrist et al., 2016 ; Dobbie and Fryer, 2015). In this

way, this study overcomes the validity issues associated with selection biases, providing more reliable estimates. Furthermore, I not only focus on Catholic schools as representatives of privately administered institutions but also explore the distinctions between Catholic schools, secular private institutions, and public schools.

This paper utilizes anonymized national-level public data sources. I primarily draw on microdata originating from the Chilean CAS ninth-grade lottery applications for 2018 and data on student outcomes. Additionally, I incorporate prior standardized test results and student sociodemographic characteristics. The outcome measures are obtained from the Department of Evaluation, Measurement, and Educational Registry (DEMRE) and encompass indicators such as school retention, college entry exam results, and college application and admission records for the year 2022.

To estimate the causal effect of attending a Catholic school in 2018, I instrument enrollment with the offer of a seat obtained through the lottery process, while also accounting for the student's likelihood of securing a seat at a voucher Catholic or voucher secular school. After I control for this probability, I find no significant baseline differences between students who are offered and not offered a seat in a Catholic school.

My estimations indicate positive causal impacts of attending a Catholic school on college-entry exam participation and academic performance, particularly in math and reading. Additionally, the results show a positive effect of attending these schools on college application and acceptance rates. Furthermore, attending Catholic schools appears to influence students' preferences, notably leading to a higher likelihood of their choosing health-related majors, potentially reflecting the influence of religiosity in promoting prosociality, a trait commonly associated with health workers.

A gender-based analysis reveals that the positive effect of attending a Catholic school on test results is driven entirely by girls. However, only male students appear to benefit from attending Catholic schools with regard to college acceptance rates. Female students attending Catholic schools appear to shy away from applying to STEM majors and are

instead inclined toward health-related disciplines. This pattern is notably absent among male students.

While neither female nor male students in Catholic schools exhibit significant effects on dropout rates compared to their respective public school peers, it is noteworthy that male students in Catholic schools demonstrate a substantive increase in dropout rates (this increase lacks statistical significance). Furthermore, I observe positive and significant dropout effects for boys with low baseline math ability when I stratify by baseline math ability and gender.

Survey evidence reveals that, before the CAS was mandated and student selection was banned, Catholic schools employed more selective admissions processes. Furthermore, Catholic institutions appear to maintain stricter disciplinary measures and foster higher levels of parent involvement. Students attending Catholic schools also demonstrate better overall behavior than voucher secular and public school students; these characteristics resemble those commonly associated with high-achieving charter schools that follow the Knowledge Is Power Program (KIPP) and no-excuses models in the United States. On the other hand, public school students perceive a stronger sense of support and appreciation from their teachers than do Catholic school students.

This paper makes significant contributions to the related literature across several dimensions. First, it adds to the literature discussing Catholic schools by presenting rigorous lottery-based evidence that sheds light on the impacts of attending Catholic schools. Previous papers, including Evans and Schwab, 1995, Neal, 1997, Jepsen, 2003, and Altonji et al., 2005, have relied on very strong assumptions for identification. Mine is the first investigation to study Catholic schools in a lottery context, which simulates random assignment to schools while I control for student preferences.

Second, this work expands our comprehension of how Catholic schools, in comparison to other private educational institutions, influence academic outcomes. In doing so, it contributes significantly to the broader literature investigating the causal effects asso-

ciated with enrollment in privately managed educational establishments. While charter schools in the United States have received extensive scrutiny (Abdulkadiroglu et al., 2017; Dobbie and Fryer, 2011; Clark et al., 2015; J. D. Angrist et al., 2016; Dobbie and Fryer, 2015; Cohodes and Feigenbaum, 2021), they primarily operate as secular institutions. Catholic schools, conversely, introduce a religious component into the educational landscape, offering potential insights into how distinct educational models shape student outcomes. Furthermore, it is noteworthy that Catholic schools represent a widely replicated model in the majority of countries worldwide Wodon, 2020.

Third, this study enriches our understanding of the variations in school models by harnessing comprehensive data that encapsulate the perspectives of students, teachers, and parents regarding their school experiences. It delves into essential elements such as parental engagement, academic rigor, and other school characteristics and highlights the parallels between Catholic schools and high-achieving charter schools in the US.

Fourth, this study conducts a comprehensive analysis of the disparate effects of attending Catholic schools on both male and female students; it extends the body of literature that suggests that high-performing schools tend to predominantly benefit girls (Deming et al., 2014, Cohodes and Feigenbaum, 2021, Hastings et al., 2006). This investigation further contributes to the broader literature on heterogeneous effects by gender of educational interventions, which consistently reveals advantages accruing primarily to girls rather than to boys (Anderson, 2008, Kling et al., 2007, J. Angrist and Lavy, 2009, J. Angrist et al., 2009).

Last, this study contributes to the field of gender economics by offering evidence suggesting that religious schools may play a role in the gender gap observed in STEM major choice. This finding offers fresh insight into the multifaceted factors influencing gender disparities in STEM fields, as exemplified by Speer, 2017; Mcnally, 2020; Jiang, 2021; Bordóna et al., 2020; Landaud et al., 2020; and Delaney and Devereux, 2021. It is worth noting that this study's findings do not conclusively disentangle whether the negative ef-

fects on female students' applications to STEM majors are driven primarily by their graduating from high-performing schools, as observed in the research by Landaud (2020), or if religious affiliation also plays a significant role.

The rest of this paper is organized as follows: Section 2 provides a concise overview of the Chilean education system and recent educational reforms, with specific attention to the Centralized Admission System. Section 3 describes the data sources and sample composition, while Section 4 expounds upon the chosen identification strategy. Section 5 presents the empirical results related to academic outcomes, and Section 6 further dissects these findings and considers gender and baseline academic aptitude. In Section 8, the paper delves into potential mechanisms and elucidates distinctions in school model characteristics among different types of schools. Finally, Section 9 concludes the study and discusses the findings and implications for policy.

2 Context and Setting

Chilean school system

The Chilean educational system is primarily organized into three distinct categories. The first comprises public schools managed by governmental authorities, the second includes privately managed schools that receive public funding through vouchers, and the third consists of entirely private schools. As of 2017, Chile was home to a total of 11,749 schools. Among these, 45% were classified as public institutions, 50% fell under the category of private institutions subsidized through vouchers, and the remaining 5% were fully private establishments.

Within the realm of publicly funded and privately managed schools, a notable subset is operated by religious organizations. Specifically, among the 5,866 voucher-receiving schools with available data on religious affiliation, 12.4% are administered by Catholic organizations, 2.2% by other religious groups (primarily Christian organizations), and

the remainder are overseen by private secular entities.

Publicly financed schools.

Table 1 provides an overview of the descriptive characteristics of publicly funded schools, categorized by their mode of administration. In Panel A, notable disparities emerge, where publicly managed schools demonstrate a higher prevalence of rural locations. At the same time, Catholic institutions exhibit a pronounced tendency towards single-sex education as a distinctive feature of their traditional pedagogical model. Nevertheless, it is worth noting that recent trends have seen a shift in several formerly single-sex schools toward coeducation. Regarding the student–teacher ratio, Catholic, and Christian schools manifest similar classroom sizes, of around 19 to 21 students per teacher. On the other hand, secular voucher institutions exhibit a significantly higher student–teacher ratio, averaging 26 students per teacher. In contrast, public schools demonstrate a notably lower student–teacher ratio of 14 students per teacher. This difference may be attributed to the greater prevalence of public schools in less populated rural areas.

Panel B presents teacher-related characteristics by school type, revealing that private educational establishments feature a more substantial representation of female and tenured educators, with the contrast being particularly conspicuous between secular and publicly managed schools. The mean years of teaching experience across all institution types range from 11 to 14 years, with Christian schools employing teachers with comparatively less experience.

Turning to the composition of the student body in 2017, as depicted in Panel C, discernible disparities emerge, particularly in Catholic and other privately administered schools. These institutions display a higher enrollment of economically advantaged students, characterized by a reduced percentage of students of low-income backgrounds and a more significant proportion of students with mothers possessing higher educational attainment. Additionally, the prevalence of immigrant students is notably lower in these

schools. These differences may be attributable to either selective admissions processes or, prior to the 2016 reform, privately managed schools' practice of soliciting or accepting parental contributions in exchange for admission, even while receiving public funding through vouchers.

Religious education

Religious education has constituted an integral element of Chile's national curriculum since 1983 and is mandated for all public schools nationwide. The curriculum prescribes a standard allocation of two hours per week for religious instruction. Nevertheless, parents retain the prerogative to request an exemption on behalf of their child, allowing the substitution of religious instruction with an alternative school activity. Notably, this opt-out option is more frequently exercised during the middle and high school years. In most public schools, the time allocated for these classes is utilized to impart humanitarian values and provide life orientation. Importantly, these thematic areas are typically presented from the perspective of Catholic or Christian values and beliefs, as affirmed by the United Nations Development Program in Chile (PNUD) and Ministry of Education (MINEDUC) in 2017.

Conversely, the inclusion of religious education in privately managed schools varies significantly and is contingent upon the specific religious orientation of each institution. Panel D of Table 1 presents administrative records detailing classes offered by grade and whether attendance of them is mandatory, making evident that a substantial proportion of Catholic schools incorporate some form of religious education. Notably, religious education is mandatory in 62% of primary schools and 57% of secondary schools affiliated with the Catholic tradition. In this regard, private Christian schools exhibit patterns similar to those in Catholic schools, albeit with somewhat less stringency regarding the compulsory nature of religious classes. As expected, most public and secular private schools either allow students to abstain from religious instruction or, in some cases (particularly

secondary-public institutions), do not offer such classes at all.

Student performance

Panel E in Table 1 examines student performance prior to the implementation of the Centralized Admission System. The academic performance of Catholic schools was consistently superior to that of publicly funded and privately managed educational institutions, with the former demonstrating a substantial advantage of at least one standard deviation or more. This performance differential is particularly conspicuous when Catholic schools are contrasted with public schools, with the disparity persisting at a relatively consistent level over time, at approximately 1.5 standard deviations (see Figures 1–4 in Annex for detailed graphical representations).

Another noteworthy aspect of the data is the disparity in student performance between primary (4th-grade standardized test results) and secondary (8th-grade standardized test results) education based on school type. It is notable how the performance gap between public schools and voucher schools widens, with public school students appearing to perform worse, while voucher school students perform better. Two possibilities could explain this trend: either public school students are experiencing a decline in performance compared to voucher school students, or low-performing students are leaving voucher schools and enrolling in public schools.

Reforms

Over the past decade, Chile's educational system has undergone substantial transformations aimed at addressing persistent challenges arising from the school choice framework, particularly educational disparities and segregation. In approximately 2010, the government introduced targeted subsidies for economically disadvantaged students across all publicly funded schools. This reform played a pivotal role in elevating students' test scores and reducing income-based disparities by approximately one-third within five years of its enactment, as documented by Murnane et al. (2017).

Table 1: Publicly financed schools in Chile

	Public	**Private-Catholic**	**Private-Christians**	**Private-Secular**
A. School Characteristics				
% Single sex	1.4%	12.4%	0.0%	0.4%
% Rural	24.3%	1.1%	0.2%	6.1%
Student-teacher ratio	20	21	19	44
B. Teachers Characteristics				
% Female	69.5%	71.8%	73.4%	79.4%
% Tenured	39.4%	63.7%	57.0%	64.1%
Years of experience	*13.0*	*13.7*	*11.2*	*13.9*
C. Student Characteristics				
% Female	46.4%	53.5%	48.1%	44.9%
% Low-income	71.2%	48.5%	53.1%	53.2%
% Have Wifii	82.3%	89.5%	89.4%	89.3%
% Mother high-school	47.2%	22.6%	27.9%	27.5%
% immigrant	3.2%	1.3%	2.9%	1.8%
D. Religious education				
Primary religious class	75.5%	90.8%	91.6%	73.5%
Mandatory for primary	11.6%	62.0%	52.9%	18.4%
Secondary religious class	14.8%	64.9%	49.6%	30.4%
Mandatory for secondary	4.6%	56.8%	42.9%	12.0%
E. Standardized tests				
4th grade math	-0.17	0.36	0.42	0.17
4th grade reading	-0.15	0.31	0.36	0.16
8th grade math	-0.35	0.68	0.42	0.30
8th grade reading	-0.25	0.58	0.48	0.18
N Schools	5266	726	131	5009
% of total schools	47%	7%	1%	45%
N Students	1,317,995	490,622	58,144	1,394,646
% of total students	40%	15%	2%	43%

Source: Author's calculations using 2017 public school census data from the Chilean Ministry of Education. Note: Table 1 depicts descriptive statistics of all publicly funded schools in Chile. Privately funded schools are excluded from these analyses.

Another significant transformation followed the student movement of 2011, leading to the most comprehensive overhaul of the school system since the restoration of democracy in 1991. Implemented progressively, this reform mandated that all educational institutions benefiting from public funds refrain from activities such as profit generation,

student selection based on academic or socioeconomic criteria, solicitation or acceptance of parental contributions, and the use of selective admissions criteria.

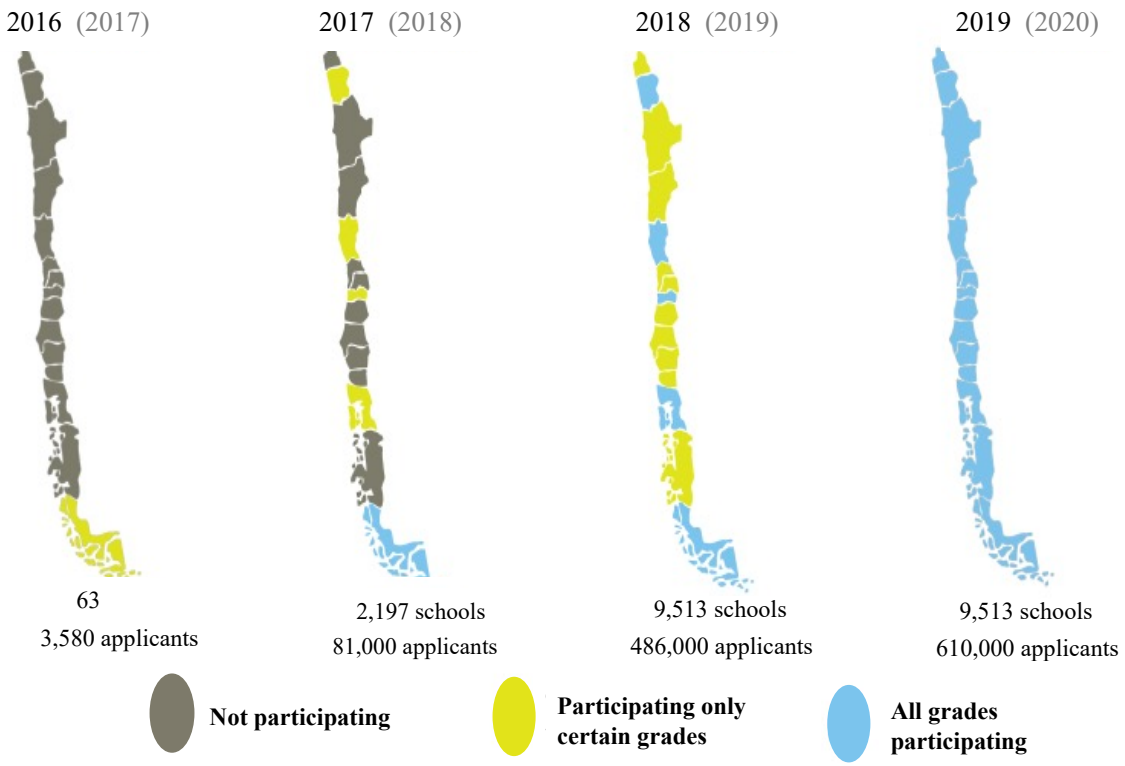
In addressing the issue of student selection, the Chilean government introduced the CAS, which was systematically implemented nationwide as depicted in Figure 1. In the CAS's inaugural year of implementation in 2017, one of the country's 15 regions participated, restricting participation to students seeking admission to pre-K, kindergarten, 1st grade, 7th grade, and 9th grade, with the allocation being determined through a lottery-based mechanism. In the following year (2018), four additional regions adopted the lottery-based system. Among these regions, the lottery was limited to applicants for the specified grades, while the original region that initiated the lottery in 2017 incorporated students from all grade levels. This standardized procedure was consistently applied across all regions that adopted the CAS. In the initial year, only students seeking admission to the designated key grades were included in the CAS. In the ensuing years, this scope expanded to encompass all remaining grade levels. By 2019, eleven additional regions had embraced the admission lottery system, with the final and largest region implementing it in 2020. Consequently, by 2021, publicly funded schools in all 15 Chilean regions employed the CAS for student admissions across all grade levels.

Centralized Admission System

Under the current system, parents seeking to enroll their children in a new school or transition between schools are required to participate in the CAS. The application process involves providing basic demographic information about the students and listing their preferred schools and grade levels in order of priority. Concurrently, schools indicate the number of available vacancies for each grade level.

Then, students are assigned a priority level for each selected school. The highest priority is given to students who were previously enrolled in the school during the preceding academic year. The second level of priority is reserved for students with siblings already attending the same school. The third level of priority is allocated to students from low-

Figure 1: CAS roll-out



Source: Chilean Ministry of Education. March 2018. Note: The year in parentheses indicates the year that students accepted through the CAS began classes. The year out of parentheses indicates the year prior to enrollment, when parents applied to the CAS.

income backgrounds, while the fourth pertains to students whose parents are employed by the school. Students who have previously attended the school are assigned the fifth priority. Next, a random lottery number is assigned to each student for every school she has applied to, which assists in breaking ties among students with equal priority status.

The entire process is managed through the deferred acceptance algorithm with multiple tie-breaking rules (DAMR algorithm) (Abdulkadiroğlu and Sönmez, 2003). The term "multiple tie-breaking rules" signifies that each student is assigned a distinct random number for each school she has applied to. Once the DAMR results are determined, a subsequent algorithm comes into play, specifically for students not assigned a school through the DAMR process. This supplementary algorithm allocates these students to

the nearest available school.

The steps comprising the DAMR algorithm are as follows:

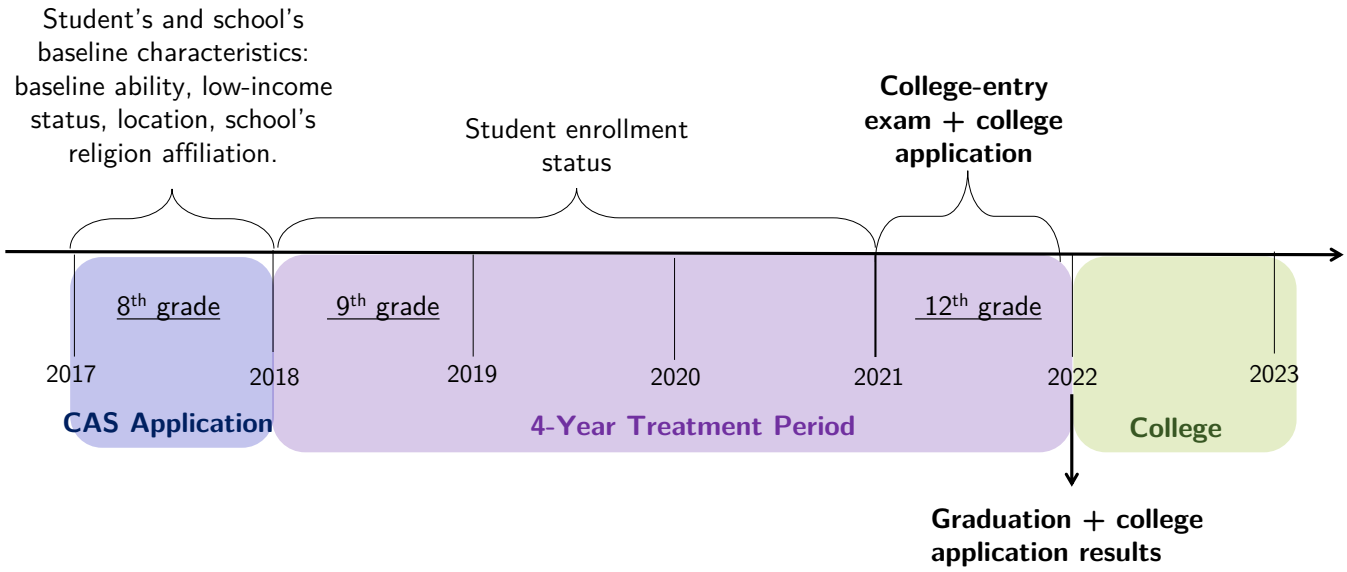
(i) A separate and uniformly distributed random lottery number is generated for each applicant–school pairing. (ii) Initially, only the most preferred school of each student is considered. Each school ranks the applicants based on priority and then by their random number within each priority group. The school provisionally admits applicants in descending order of their ranking until the school reaches its capacity. Other applicants are rejected. (iii) Subsequently, the second most preferred school for each student is considered. This school ranks the rejected applicants from the first round along with the applicants it has provisionally accepted. The school then provisionally admits the highest-ranked applicants in accordance with their ranking order and capacity. The rest are rejected. (iv) The algorithm concludes when no new applications remain. (v) Unassigned applicants are then allocated to the nearest available school.

3 Data

The primary data sources used for estimation purposes are publicly available and include data from the Chilean CAS, student socioeconomic characteristics gathered from the national education census, and school-level data extracted from the school census. These datasets, meticulously administered and published annually by the Ministry of Education, pertain to the pre-2018 period. For the outcome variables, I draw upon data from the year 2021, sourced from the DEMRE. Access to the DEMRE data for research purposes is granted upon request.

The study focuses its analysis on students who applied to the CAS in 2017 for a seat in 9th grade in 2018. The reason for selecting this specific cohort is that, for those set to graduate in 2021, I can observe standardized test results before their participation in the CAS (2017 8th-grade standardized test results) and four years after they were assigned a

Figure 2: Timeline and data



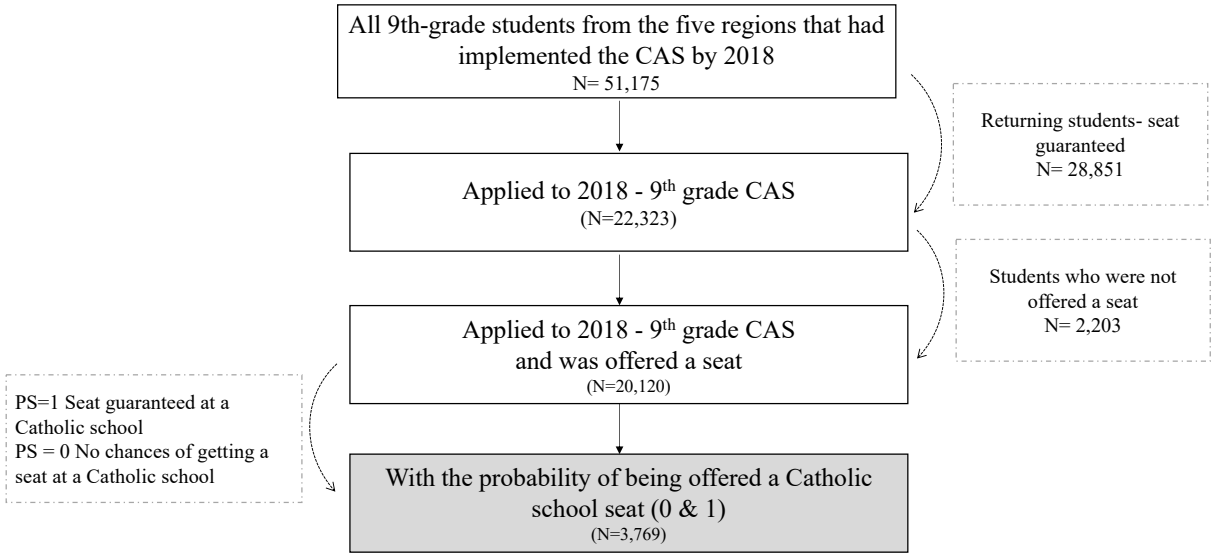
school through the CAS—this is when they graduate and present the college entry exam. It also allows me to track their college application and enrollment. Because the CAS only began in 2017, selecting a cohort for analytical purposes requires consideration of data availability given the COVID-19 pandemic in the middle, the limited years the CAS has been in place, and providing students with sufficient exposure to the school they were assigned.

Figure 2 illustrates the timeline of the period the study draws upon, showcasing when students apply, are "treated" (i.e., attend the school assigned through the CAS), their graduation date, and the data used from each period.

Figure 3 presents a data flow diagram illustrating the process of constructing the final dataset. The dataset comprises students who applied to the CAS in 2017 for a seat in 9th grade in 2018. Not all students participated in the CAS, either because they had a guaranteed seat in their current school as continuing students or because they planned to attend a privately financed school. This is depicted in Figure 2, moving from the top box to the one below. From the second box to the third, of the 22,323 students, only 20,120

were assigned a seat. The 2,203 students dropped from the sample were not assigned a school through the CAS and were instead given a seat at the nearest school with available seats. From the third to the fourth and last box, only 3,769 students remain. This will be explained in more detail below, but the main idea is that I only consider students who have variation in the probability of securing a seat at a Catholic school; students who are certain to be assigned or not assigned a seat at a Catholic school do not contribute to identifying the parameter of interest.

Figure 3: Estimation sample and outcomes



Note: The five regions that had implemented the CAS by 2018 were: Magallanes Tarapacá, Coquimbo, O'Higgins, and Los Lagos

Next, this section offers an overview of the data employed, categorizing it into two distinct groups: data collected before and data collected after 2018, with the latter serving as the outcome data. Subsequently, the section outlines the criteria used to define the treatment variable, specifically, how schools are classified as Catholic schools. Last, the study delves into the composition of the final estimation sample, highlighting any differences or similarities that it may have with the national sample of schools by school

type.

Data before 2018

To explore student performance following enrollment through the Chilean CAS across various school types, this study relies primarily on publicly available data published annually by the Chilean Ministry of Education. Specifically, the analysis draws from the CAS dataset for 9th-grade enrollment in the year 2018. Focusing on 9th-grade students is particularly valuable as it enables a comprehensive four-year examination tracking their progress through graduation and college application.

The CAS dataset comprises both student-level and school-level data. At the student level, it includes information such as the student's school ranking, the targeted grade level for enrollment, priority status, assigned lottery numbers for each ranked school, demographic characteristics, CAS outcomes related to seat offers, and the student's decisions regarding offer acceptance or refusal. The school-level data encompass fundamental details such as location, name, and grade-level vacancies. Lottery results can be reproduced based on the algorithmic rules outlined earlier.

Furthermore, data on additional sociodemographic characteristics of students and their prior education records (e.g., previous schools attended and standardized test scores from previous years) are obtained from census data provided by the Ministry of Education. To account for students with missing baseline ability information, I employ a regression model utilizing older standardized test scores (i.e., 4th- and 6th-grade reading and math) and sociodemographic characteristics to predict their 8th-grade performance.[2]

Last, school census data are utilized to gather information about the schools. Specifically, I identify single-sex schools and distinguish publicly and privately financed institutions, also determining whether they were publicly or privately administered. The process of acquiring information regarding religious affiliation is elaborated upon in the

[2]Further details on approximating baseline ability for students with missing information can be found in the Annex X.

subsection "Defining Catholic schools."

Data after 2018

All data for years after 2018 correspond to the outcome variables. These include dropout rates as of 2021, determined by whether a student is present in any grade in the 2021 student-census dataset. I conclude that students not appearing in the dataset were not formally enrolled in any school in Chile, whether public or private, by 2021. Subsequent outcomes include measures related to college applications: whether students took the college entry exam; their performance in math, reading, science, and history; their college application in the same year (2021, for enrollment in 2022); the type of major applied for (e.g., STEM, health, arts and humanities); and whether the students were accepted for any of their chosen university–major combinations.

Due to differential attrition across school types and stages, students who dropped out are imputed the minimum possible score for all remaining outcomes. For CEE scores, I introduce a binary variable indicating whether students scored above or below the national mean score in each subject, assuming that dropouts would have scored below the national average if tested.

Defining Catholic schools

Classifications of Catholic schools may vary. In this study, I rely primarily on the dataset constructed by Gregory Elacqua and Humberto Santos in 2010, which draws on a Catholic school census conducted by the Catholic Church. From the 2017 school census data, I successfully identify the religious affiliation of 81% of my sample (9,259 schools) using the Elacqua and Santos (2010) dataset. For the remaining 2,089 schools, I calculate their probability of being a Catholic school based on information provided in their school mission documents, which are accessible through a public school web-search tool from the Chilean Ministry of Education.

I use text analysis to identify religious keywords such as "Catholic," "religion," "church,"

"sacraments," "Bible," and "Jesus Christ" in the schools' mission documents. Subsequently, I regress a binary variable indicating religious affiliation against the frequency of these words in the mission documents and predict the probability of a school's being Catholic. The presence of Catholic-related words helps explain 33% of the variation in whether a school is classified as Catholic.

Table 2: Religious affiliation imputations

	Public	Private-Catholic	Private-Secular
Predicted probability of beeing Catholic			
5th percentile	0.019	0.019	0.019
25th percentile	0.019	0.055	0.019
50th percentile	0.019	0.249	0.019
75th percentile	0.021	0.830	0.021
95th percentile	0.031	0.999	0.051
Imputations			
N schools with religious affiliation	5,266	700	2,995
Imputations using 0.2 as threshold*	0	26	2,014
Christian schools regrouped	0	131	0
Total schools after imputations	5,266	857	5,009

Table 2 displays percentiles by school type of the predicted probability of a school being classified as Catholic. These probabilities were derived from a regression model, where a binary variable denoting Catholic religious affiliation was regressed against the frequency of religious-related words found in the schools' mission documents. Source: Author's calculations

I then examine the distribution of predicted probabilities across school types to determine the threshold for classifying a school with missing information as likely Catholic. As depicted in Table 2, 95 percent of private secular and public schools have probabilities below 0.05 and 0.031, respectively, of being Catholic. In contrast, half of Catholic schools have probabilities exceeding 0.24. I set the minimum probability threshold for imputing a Catholic school affiliation to 0.2 to minimize classification errors. Only 3% of private secular schools and 1% of public schools exceed this threshold. Importantly, my results remain robust to variations in this threshold (see more about this in the "Annex: robustness checks" section).

To the group of Catholic schools, I add schools marked as Christian evangelical in the Elacqua and Santos (2010) dataset. This is because both evangelical and Catholic denominations share similar beliefs and have Christian roots. However, Protestant schools make up a very small proportion of schools, as seen in Table 2. In the final estimation sample, only 6 (8 percent) of the 74 Protestant schools, which represent 6 percent of the student sample, are classified as Catholic.

Estimation sample

The estimation sample in this study is not an exhaustive representation of all students who applied to the Chilean CAS in 2017 for 9th-grade enrollment in 2018. Instead, it comprises students whose chances of securing a seat at a Catholic school were contingent upon the outcomes of a lottery drawing. Furthermore, the sample is restricted to students who received offers from one of three types of schools: public, voucher Catholic, or voucher secular. Students who did not receive offers are excluded from the analyses, as their subsequent school choices are nonrandom.

The subset of schools used for the estimations somewhat reflects the average characteristics of the national sample of schools categorized by type, as presented in Table 1. Characteristics specific to secondary education are assessed for the schools utilized in the estimation sample and detailed in Table 3, based on data from 2017, which predate the implementation of the CAS. Given that the estimation sample pertains to 9th-grade students and beyond, Table 3 primarily presents characteristics relevant to secondary education. Notably, the schools in this subsample exhibit lower average 8th-grade standardized test scores than the national average scores for their respective school types. This suggests that they are, on average, lower-performing schools relative to the national average for their school type. Additionally, Catholic schools within the subsample tend to place a greater emphasis on religious instruction, with all of them offering religious classes at the secondary level, and in 84% of the schools, such classes are mandatory. In terms of class sizes, public schools in the subsample tend to have smaller class sizes than private

Catholic and private secular schools, a contrast that is not as pronounced in the national sample.

For a deeper understanding of the disparities within the estimation subsample, Table 4 (columns 1 to 4) compares the characteristics of the 2018 9th-grade students across different categories: those enrolled in publicly financed schools in Chile (column 1), lottery participants (column 2), and those eligible for Catholic school offers who did not receive one and those who did.

Table 3: Estimation sample: School characteristics

	Public	**Private-Catholic**	**Private-Secular**
A. School Characteristics			
% Single sex	1%	7%	0%
% Rural	5%	8%	5%
Student-teacher ratio	15	20	19
B. Teachers Characteristics			
% Female	57%	70%	70%
% Tenured	43%	63%	50%
Years of experience	*14*	*13*	*11*
C. Student Characteristics			
% Female	49%	55%	50%
% Low-income	61%	41%	40%
D. Religious education			
Secondary religious class	83%	100%	79%
Mandatory for secondary	27%	84%	33%
E. Standarized tests			
8th grade math	-0.61	0.22	0.15
8th grade reading	-0.57	0.31	0.09
N Schools	133	74	149

Author's calculations using 2017 public school census data from the Chilean Ministry of Education. Note: Table 3 presents descriptive statistics for schools analyzed in the study to assess the impact of Catholic school attendance on student academic outcomes. Included are all lottery-participating schools with at least one available seat, where students seeking admission had a nonzero but less than one probability of being assigned to a Catholic school.

4 Identification Strategy

To determine the causal effect of attending a private Catholic school, I estimate a two-stage least squares (2SLS) regression in which a private Catholic school seat offer serves as an instrument for enrollment at that school. For the estimation, I compare two groups of students: those potentially eligible to attend a private Catholic school through the Chilean CAS process who did not receive an offer and those equally eligible for an offer who did receive one. To control for selection into these schools driven by the student's and family's preferences and priorities, I control for each student's probability of receiving an admission offer from a private Catholic school. This probability is known as the student's propensity score (Abdulkadiroglu et al., 2017).

I calculate the propensity score utilizing the CAS assignment algorithm provided by the Chilean Ministry of Education. The algorithm is simulated 1,000 times, and in each round, a random lottery number is introduced for each applicant and the seat allocation of all participants recorded. After the 1,000 simulations, I add the number of times each student is assigned to each of her ranked schools and divide it by the number of simulations (i.e., 1,000). The ratio of times a student receives a seat offer at a specific school to the total number of simulations (1,000) equals the propensity score for that student–school combination. I calculate a student's propensity score for attending a private Catholic school by dividing the frequency of receiving a seat offer from such a school by the total count of random lottery draws.

In essence, the propensity score reflects the probability of a student's being assigned to a private Catholic school based on the rules of the DAMR algorithm. The primary identifying assumption is that the enrollment mechanism seats applicants with the same preferences and priorities for assignment to a school with equal probability. What is essential about the DAMR process is that available seats, student preferences, and priority status are fixed once they are provided to the system. Conditional on those fixed values, whether a student is assigned to one or another school depends entirely on the distribu-

tion of random lottery numbers.

After calculating the propensity scores, I estimate a 2SLS model:

First stage

$$PS_i^t = \alpha_0 + \alpha_1 A_i^t + \alpha_2 \hat{p}_i^c + \alpha_3 \hat{p}_i^s + \alpha_4 \hat{p}_i^x + \alpha_5 X_i + \alpha_6 SXs + \epsilon_i \quad (1)$$

Second stage

$$Y_i = \beta_0 + \beta_1 \hat{PS}_i^c + \beta_2 \hat{PS}_i^s + \beta_3 \hat{p}_i^c + \beta_4 \hat{p}_i^s + \beta_5 \hat{p}_i^x + \beta_6 X_i + \beta_7 SXs + \varepsilon_i \quad (2)$$

Equation 1 predicts whether student i enrolled in a private Catholic school or private secular school in 2018 following participation in the CAS. On the left-hand side of equation 1, PS_i^t indicates whether student i enrolled in a private Catholic (PS_i^c) or private secular school (PS_i^s). On the right-hand side, A_i^t indicates whether the algorithm assigned the student a seat in a participating private Catholic (A_i^c) or secular (A_i^s) school, X_i is a vector of student i's baseline demographics and baseline test scores, SXs is a dummy indicating whether the school to which the student was assigned was single-sex in 2017, and P_i^c represents student i's simulated propensity score for a private Catholic school assignment, P_i^s the propensity score for a secular school assignment, and P_i^x the propensity score for a single-sex school assignment. The second-stage model then uses the vector of baseline characteristics, the propensity scores, a control for assignment to a single-sex school and the first stage's prediction of private Catholic or secular school enrollment $\hat{PS}_i^t$ to predict the student's academic outcomes.

The coefficient β_1 represents the local average treatment effect of enrolling in a participating private Catholic school relative to a traditional public school and β_2 the effect of enrolling in a participating secular school relative to a traditional public school. The central assumption that must hold for β_1 and β_2 to have a causal interpretation is that the

DAMR mechanism seats applicants with the same preferences and priorities for assignment to a school with equal probability. All students with a probability of private Catholic school assignment between 0 and 1 contribute to the identification of β_1 and with a probability of private secular school assignment between 0 and 1 to the identification of β_2.

As mentioned above, Table 4 presents descriptive statistics for the estimation sample in comparison to the national and lottery samples. It also assesses balance within the estimation sample, distinguishing between students who received offers from Catholic schools and those who did not, while controlling for the student's probability of securing a seat in a Catholic school. Details on the calculation of this probability are further elucidated in Abdulkadiroglu et al., 2017.

As anticipated based on the study's design, when I control for the student's probability of receiving an offer from a Catholic school, there are no significant differences observed between the students offered and those not offered a seat in terms of their baseline characteristics. The only exception is the baseline math ability variable. However, since this discrepancy appears in just one out of 17 variables, it is more likely attributable to random chance than to any systematic bias. Additionally, it is worth noting that students not offered a seat tend to have higher baseline math test scores, which suggests that if there is any imbalance, the estimated results would provide a lower bound.

5 Lottery Results

The first-stage results, as presented in Table 7, reveal, that approximately 70 percent of students who receive a seat offer for a Catholic school through the CAS accept and subsequently enroll. The enrollment rate for private secular institutions stands at around 63 percent.

Moving on to the second-stage estimates, the study explores the effects of attending different types of schools on school retention and learning outcomes. Attending either a

Table 4: Balance

			P-score between 0-1		
	(1) Chile	(2) Lottery participant	(3) Not-offered	(4) Offered	(6) P-value
Baseline math 8th grade	0.130	-0.051	0.026	-0.005	0.02
Baseline Spanish 8th grade	0.122	0.057	0.114	0.128	0.22
8th-grade GPA	0.000	0.022	0.123	0.206	0.12
Years in a Catholic school	0.605	0.253	0.355	0.467	0.74
Years in a private-secular school	1.375	0.989	1.343	1.130	0.69
Years in a public school	1.920	2.729	2.250	2.356	0.82
Female	0.477	0.476	0.491	0.639	0.68
Low-income	0.592	0.853	0.776	0.804	0.86
Age	15.0	14.4	14.4	14.345	0.18
Years in top-1 schools	0.533	0.591	0.534	0.561	0.24
Years in top-2 schools	0.726	1.032	0.888	0.928	0.86
Years in top-3 schools	0.903	1.358	1.266	1.226	0.36
Years in top-4 schools	1.395	0.965	1.231	1.205	0.08
Single-sex	0.165	0.080	0.101	0.116	0.82
Catholic-first choice		0.150	0.467	0.694	0.12
Secular-first choice		0.207	0.241	0.131	0.31
Public-first choice		0.643	0.293	0.174	0.38
N	273,176	20,120	2,534	1,235	3,769

Note: Column (1) Includes all Chilean students that were enrolled in any publicly funded school in 2018 in grade 9th. Column (2) Includes students who participated in the 2018 Chilean CAS for a seat in 9th grade. Columns (3) and (4) Includes students who participated in the 2018 lottery for a 9th grade spot and had a Catholic-school propensity scores between 0 and 1. Column (3) depict the mean of students who were not offered a seat at a Catholic school and column (4) for those who were offered one. Column (5) reports the the p-value of the Catholic assignment coefficient in a regression of Catholic assignment, Catholic-school, other private school, and public-school propensity scores on the relevant co-founder.Top-1 to top-4 school variables, refer to how many years since 2015 until 2018 the students was enrolled in a Top quarter (Top-1) to bottom quarter(top-4) school measured by a ranking made by the Ministry of Education based on the school's standardized test results.
Source: Author's calculations.

Catholic or private secular school does not significantly influence the likelihood of students dropping out of the school system.

However, in Column 2 of Table 6, a positive impact is observed for attending a Catholic school on the likelihood of students taking the college-entry exam (CEE), with an increase of around 9 percentage points. This represents a 17 percent increase compared to students in public schools. Similarly, attending a secular institution shows a positive effect of 8 per-

Table 5: First Stage

	Enrolled at:		
Seat offered at:	Private-Catholic	Private-Other	Public
Private-Catholic	0.705***	-0.014	-0.690***
	(0.016)	(0.016)	(0.017)
Private-Secular	0.005	0.632***	-0.636***
	(0.019)	(0.018)	(0.020)
Observations	3,769	3,769	3,769
F-statitic	752.86	667.26	681.01
R-squared	0.855	0.855	0.855

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Table 2.2 shows the estimated coefficients of an OLS estimation that regresses enrollment on a private-Catholic school - Column (1)-, private-secular school - Column (2)-, or a public school - Column (3)- on being offered a seat at a Catholic school - first row - or private-secular school – second row - through the CAS. All estimation includes student location (commune) fixed effect effects, controls for the estimated probability of being offered a seat at a private-Catholic, private-secular school, or single-sex school, female indicator, and a dummy to indicate if the student was offered a seat at a single-sex school. Source: Author's calculations.

centage points, roughly a 15 percent increase compared to public school students.

Columns 3 to 6 in Table 6 indicate positive effects of attending a Catholic school on students' performance, particularly in math and reading, above the national mean in the CEE. Notably, only the reading and math estimates achieve statistical significance. Conversely, attending a private secular institution only yields positive and significant results for reading and history.

Table 7 presents findings related to college application, acceptance and major preference. It is noted that Catholic school students who are accepted through the lottery exhibit higher college application and acceptance rates. However, only the effect of being accepted is statistically significant. Students attending a Catholic school have a 6 percentage point higher probability of being accepted to college, representing a 40 percent increase compared to students attending a public school. On the other hand, there are

Table 6: Academic performance

	High-School		CEE: Scored above national mean			
	Dropout	Took CEE	Math	Spanish	Science	History
Private-Catholic	0.007	0.093**	0.079**	0.091***	0.056	0.050
	(0.017)	(0.038)	(0.035)	(0.034)	(0.036)	(0.036)
Private-Secular	0.003	0.080*	0.019	0.093**	0.024	0.086*
	(0.022)	(0.048)	(0.044)	(0.043)	(0.046)	(0.045)
Observations	3,769	3,769	3,769	3,769	3,769	3,769
R-squared	0.005	0.037	0.006	0.009	0.024	0.010
Mean Pub	0.0540	0.540	0.238	0.203	0.286	0.267

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Table 3.1 portrays IV estimated coefficients of enrolling on a Catholic or private-secular school (instrumented by having been offered a seat at such school type) on various outcomes: (1) If the student dropped out from the school system by 2021, if the student presented the college-entry exam (CEE) in 2021 (2), CEE standardized test results on math (3), reading (4), science (5) and, history (6). All estimation includes location of the student in 2017 (commune) fixed effects, controls for the estimated probability of being offered a seat at a private-Catholic, private-secular, or single-sex school, dummy for female, and another that indicates if the student received an offer in a single-sex school. School drop out variable takes the value of one if the student is not observed in the school enrollment census of 2021. Also, if the student did not take the PSU, they are imputed a value of zero for all their results. Source: Author's calculations.

significant effects for attending a private secular school on college application and acceptance.

Regarding the influence of attending Catholic schools on students' major preferences (Table 7, Column 2-5), the analysis reveals that the coefficient associated with the inclination to opt for a health major is positive and statistically significant. This translates to a four-percentage-point increase in the likelihood of selecting a health-related major, constituting a 50 percent increase relative to students from public schools.

In conclusion, the analysis in this section sheds light on the nuanced effects of enrolling in Catholic and private secular schools on various educational outcomes. First-stage findings show high acceptance rates for Catholic schools and private secular institutions, which reveal the instrument is strong. The second-stage estimates reveal positive impacts of attending a Catholic school on college exam participation and academic per-

Table 7: College application

	Applied College				Accepted
	Any	STEM	Health	Arts & Humanities	
Private-Catholic	0.050	-0.001	0.042*	-0.001	0.059**
	(0.034)	(0.022)	(0.023)	(0.013)	(0.030)
Private-Secular	0.054	0.002	0.043	0.003	0.038
	(0.043)	(0.028)	(0.030)	(0.016)	(0.038)
Observations	3,769	3,769	3,769	3,769	3,769
R-squared	0.025	0.005	0.020	0.001	0.009
Mean Pub	0.225	0.0820	0.0810	0.0250	0.148

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Table 7 presents IV estimated coefficients for enrolling in either a Catholic or private-secular school (instrumented by having received an offer from such a school) on various college outcomes:(1) College application: Whether the student submitted an application to the centralized college application system.(2) STEM-major application: Whether the student indicated a STEM major in their college-major application.(3) Health-major application.(4) Arts and humanities-major application.(5) Acceptance to any major applied for. All estimations include fixed effects for the student's 2017 location (commune), controls for the estimated probability of receiving an offer from a private-Catholic, private-secular, or single-sex school, a dummy variable for female students, and another indicating if the student received an offer from a single-sex school. Source: Author's calculations.

formance, particularly in math and reading. Additionally, the results underscores the significance of attending these schools in enhancing college application and acceptance rates. Furthermore, attending Catholic schools appears to influence students' preferences, notably leading to a higher likelihood of choosing health-related majors, potentially reflecting the influence of religiosity on promoting pro-social behaviors, traits commonly associated with health workers.

6 Heterogeneity by Gender and Baseline Ability

Results by gender

This section delves deeper into how attending different types of schools affects stu-

dents with distinct characteristics. I replicate the equations from Section 5 but break down the results by gender and baseline math ability.

Table 8 presents the results by gender, with the top panel focusing on female students and the bottom panel on male students. Notably, although the coefficient for school dropout rates remains statistically insignificant for both genders, it becomes negative for female students and positive, and notably larger, for male students. The effect on participation in the College Entrance Exam (CEE) remains positive for both genders but is not statistically significant.

Table 8: Results by gender: Dropout and academic performance

	High-School		CEE: Scored above national mean			
	Dropout	Took CEE	Math	Spanish	Science	History
A. Female students						
Private-Catholic	-0.013	0.065	0.124**	0.134***	0.012	0.052
	(0.021)	(0.053)	(0.052)	(0.050)	(0.056)	(0.054)
Private-Secular	-0.023	0.028	0.021	0.117**	-0.030	0.109*
	(0.025)	(0.062)	(0.060)	(0.058)	(0.065)	(0.062)
Observations	2,015	2,015	2,015	2,015	2,015	2,015
R-squared	0.003	0.011	0.007	0.010	0.004	0.008
Mean Pub	0.0390	0.627	0.262	0.212	0.365	0.284
B. Male students						
Private-Catholic	0.028	0.087	0.016	0.018	0.065	0.029
	(0.029)	(0.056)	(0.048)	(0.047)	(0.049)	(0.049)
Private-Secular	0.042	0.123	-0.006	0.027	0.057	0.048
	(0.039)	(0.077)	(0.066)	(0.064)	(0.067)	(0.067)
Observations	1,708	1,708	1,708	1,708	1,708	1,708
R-squared	-0.001	0.013	0.018	0.023	0.011	0.006
Mean Pub	0.0660	0.469	0.218	0.195	0.221	0.254

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Table 8 displays IV estimated coefficients for enrollment in Catholic or private-secular schools, stratified by gender. The results for female students are presented in Panel A, while those for male students can be found in Panel B.Source: Author's calculations

The most salient observation is that only female students seem to benefit from improved CEE performance. Female students attending Catholic schools exhibit a 47 per-

cent higher chance of surpassing the national average in reading and approximately a 63 percent higher chance in mathematics compared to their peers in public schools. However, these advantages do not extend to male students. Additionally, attending secular schools does not appear to significantly influence math performance for either gender. Still, it results in an approximate 12 percentage point increase in reading performance and a 10 percentage point increase in history for female students.

Table 9: Results by gender: College application

	Applied College				Accepted
	Any	STEM	Health	A&H	
A. Female students					
Private-Catholic	0.029	-0.056*	0.065	-0.014	0.043
	(0.054)	(0.029)	(0.040)	(0.019)	(0.046)
Private-Secular	0.034	-0.038	0.060	-0.019	0.028
	(0.062)	(0.034)	(0.046)	(0.023)	(0.054)
Observations	2,015	2,015	2,015	2,015	2,015
R-squared	0.005	-0.004	0.001	0.000	0.004
Mean Pub	0.298	0.0690	0.126	0.0290	0.182
B. Male students					
Private-Catholic	0.055	0.039	0.011	0.014	0.075*
	(0.045)	(0.034)	(0.026)	(0.018)	(0.040)
Private-Secular	0.056	0.038	0.006	0.034	0.043
	(0.061)	(0.047)	(0.036)	(0.024)	(0.055)
Observations	1,708	1,708	1,708	1,708	1,708
R-squared	0.012	0.003	0.005	-0.005	0.010
Mean Pub	0.165	0.0930	0.0440	0.0220	0.120

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Table 8 displays IV estimated coefficients for enrollment in Catholic or private-secular schools, stratified by gender. The results for female students are presented in Panel A, while those for male students can be found in Panel B.Source: Author's calculations

Table 9 delves into college application outcomes by gender. Both male and female students attending Catholic schools display a greater inclination for college applications, although the coefficients are not statistically significant. Female students attending Catholic

Table 10: Results by gender: College application

	Applied College				Accepted
	Any	STEM	Health	A&H	
A. Female students					
Private-Catholic	0.029	-0.056*	0.065	-0.014	0.043
	(0.054)	(0.029)	(0.040)	(0.019)	(0.046)
Private-Secular	0.034	-0.038	0.060	-0.019	0.028
	(0.062)	(0.034)	(0.046)	(0.023)	(0.054)
Observations	2,015	2,015	2,015	2,015	2,015
R-squared	0.005	-0.004	0.001	0.000	0.004
Mean Pub	0.298	0.0690	0.126	0.0290	0.182
B. Male students					
Private-Catholic	0.055	0.039	0.011	0.014	0.075*
	(0.045)	(0.034)	(0.026)	(0.018)	(0.040)
Private-Secular	0.056	0.038	0.006	0.034	0.043
	(0.061)	(0.047)	(0.036)	(0.024)	(0.055)
Observations	1,708	1,708	1,708	1,708	1,708
R-squared	0.012	0.003	0.005	-0.005	0.010
Mean Pub	0.165	0.0930	0.0440	0.0220	0.120

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Table 8 displays IV estimated coefficients for enrollment in Catholic or private-secular schools, stratified by gender. The results for female students are presented in Panel A, while those for male students can be found in Panel B.Source: Author's calculations

schools tend to apply more to health-related majors and are less inclined towards STEM majors; however, only the negative effect on STEM-major preference is statistically significant. Male students attending Catholic schools, on the other hand, exhibit a positive effect on choosing STEM-related majors, though the coefficient does not reach statistical significance. They also demonstrate a somewhat higher likelihood of applying to college and getting accepted, with only the coefficient for college acceptance being significant.

In summary, the findings suggest that female students attending Catholic schools experience improved CEE results but seem less inclined to pursue STEM majors. Furthermore, only male students appear to benefit from attending Catholic schools in terms of

college acceptance rates. Higher-performing schools in the United States tend to yield positive educational outcomes, primarily driven by female students. Deming et al., 2014 suggests that this may be because girls adapt better to stricter learning environments, a trend that may also explain the results found for Catholic schools.

Female students attending Catholic schools appear to shy away from applying to STEM majors and are instead inclined toward health-related disciplines. This pattern, notably absent among male students, may be linked to the impartation of values through religious education. Literature in sociology has established links between religiosity and gender stereotypes, which could explain these observed effects Siordia, 2016. Another explanation could be linked to literature showing that women attending high-quality schools are less likely to apply to STEM majors Landaud et al., 2020.

To test the hypothesis that religious teachings influence female students' major preferences, we explored results based on the probability of a school adhering to Catholic values, as inferred from schools' mission documents. While this does not definitively confirm a school's Catholic affiliation, it strongly suggests the influence of religious values. Given its high correlation with affiliation to the Catholic Church, most schools in the treatment group are likely affiliated with the church, while others may impart Catholic values without formal religious affiliation (Planning on doing this but haven't had the time- I have to calculate another PS based on schools with higher and lower scores of religiosity)

Results by baseline ability

Tables 10 and 11 report second-stage results for students with baseline math scores below and above their class averages. Despite lacking statistical significance, one notable finding is the increased dropout probability for low-performing students in Catholic schools and the negative probability for high-performing students. Students attending Catholic schools with baseline math scores below their class mean experience a 3.2 percentage point rise in the probability of dropout, representing a 50 percent increase com-

Table 11: Results by baseline math: Dropout and academic performance

	High-School		CEE: Scored above national mean			
	Dropout	Took CEE	Math	Spanish	Science	History
A. Below math-baseline class mean						
Private-Catholic	0.032	0.093*	0.045	0.075**	0.062	0.023
	(0.027)	(0.053)	(0.039)	(0.035)	(0.046)	(0.046)
Private-Secular	0.019	0.124*	-0.007	0.074*	0.033	0.137**
	(0.032)	(0.064)	(0.046)	(0.043)	(0.056)	(0.056)
Observations	1,937	1,937	1,937	1,937	1,937	1,937
R-squared	0.003	0.042	0.009	0.014	0.032	0.019
Mean Pub	0.0650	0.433	0.112	0.0790	0.206	0.199
B. Above math-baseline class mean						
Private-Catholic	-0.032	0.155***	0.187***	0.191***	0.081	0.123**
	(0.021)	(0.052)	(0.057)	(0.056)	(0.056)	(0.055)
Private-Secular	-0.022	0.069	0.107	0.174**	0.043	0.043
	(0.029)	(0.071)	(0.078)	(0.077)	(0.077)	(0.076)
Observations	1,784	1,784	1,784	1,784	1,784	1,784
R-squared	0.014	0.045	0.003	0.011	0.029	0.007
Mean Pub	0.0440	0.642	0.358	0.321	0.361	0.332

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Table 8 presents IV estimated coefficients for enrollment in Catholic or private-secular schools, stratified by baseline math ability. Panel A shows results for students who enrolled in schools where their 8th-grade math test scores were below the class mean, while Panel B presents results for students whose math test scores were above the class mean.Source: Author's calculations

pared to the average public school.

Regarding CEE performance, it seems more advantageous to attend a Catholic school for high-performing students relative to their peers than for low-performing students. Students with higher baseline math scores appear to have positive and significant effects on all subjects except science, which appears positive but not significant. They also exhibit a higher probability of taking the CEE than their public school counterparts. For lower-performing students, attending a Catholic school does not seem detrimental but only appears to have an effect on their probability of scoring above the national mean on the reading part of the exam. They also appear to have a higher probability of taking the CEE exam than their public school counterparts.

Table 12: Results by baseline math: College application

	Applied College				Accepted
	Any	STEM	Health	Arts&-Humanities	
A. Below math-baseline class mean					
Private-Catholic	0.065	0.003	0.072***	0.012	0.052*
	(0.041)	(0.021)	(0.028)	(0.014)	(0.031)
Private-Secular	0.065	-0.013	0.032	0.022	0.038
	(0.050)	(0.026)	(0.033)	(0.016)	(0.038)
Observations	1,937	1,937	1,937	1,937	1,937
R-squared	0.023	0.005	0.014	0.002	0.008
Mean Pub	0.138	0.0320	0.0570	0.0100	0.0590
B. Above math-baseline class mean					
Private-Catholic	0.091*	0.011	0.023	-0.011	0.129**
	(0.055)	(0.039)	(0.039)	(0.023)	(0.051)
Private-Secular	0.085	0.049	0.066	-0.003	0.099
	(0.075)	(0.054)	(0.054)	(0.031)	(0.071)
Observations	1,784	1,784	1,784	1,784	1,784
R-squared	0.034	0.002	0.031	0.004	0.016
Mean Pub	0.307	0.131	0.104	0.0400	0.232

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Table 8 presents IV estimated coefficients for enrollment in Catholic or private-secular schools, stratified by baseline math ability. Panel A shows results for students who enrolled in schools where their 8th-grade math test scores were below the class mean, while Panel B presents results for students whose math test scores were above the class mean.Source: Author's calculations

Regarding college applications, both high and low-performing students, as measured at baseline, attending Catholic schools seem to benefit in terms of applying and being accepted to college. Students with higher baseline math scores have a 13 percentage point higher chance of getting accepted to college, representing a 55 percent increase compared to their public school counterparts. Lower-performing students also exhibit a positive and significant effect, representing an 88 percent increase in acceptance compared to their public school counterparts.

In terms of major preference, only low-performing students appear to be affected by

attending a Catholic school, increasing their propensity to choose health-related majors by 7 percentage points, more than doubling the average application rate to health majors compared to their public school counterparts.

Results by baseline ability interacted with gender

The results for low and high-performing girls and low and high-performing boys are presented in tables 12-15 in the annex. These findings yield a central takeaway: Attending Catholic schools appears to be particularly advantageous for high-performing girls, while it may have adverse effects on low-performing boys, who emerge as the primary contributors to the positive impact observed in school dropout rates.

Another significant finding emerges when examining results stratified by gender and ability. High-performing male students appear to benefit from attending a Catholic school in terms of their science performance on the CEE. On the other hand, female students benefit in terms of improving their math and reading CEE test scores.

Based on the findings related to baseline ability and gender, it appears that Catholic schools tend to experience a reduction in the presence of low-performing male students. This phenomenon might be linked to a process wherein these students discontinue their education, potentially contributing to the observed positive effects on girls' math and reading performance. One possible explanation is that Catholic schools encourage or inadvertently lead low-performing students to leave, enabling teachers to provide higher-level instruction to the remaining students. This concentration of resources may enhance classroom efficiency and effectiveness.

Additionally, the absence of low-performing students in Catholic schools could contribute to an improved overall learning environment. This conducive atmosphere may be leveraged by female students, leading to increased learning outcomes compared to their counterparts in public schools. Ultimately, these enhanced learning outcomes may manifest in their College Entrance Examination (CEE) performance.

7 What Makes Catholic Schools Different?

To understand what sets Catholic schools apart from private secular and public schools, the study analyzed surveys from 2017 involving parents, teachers, and students. These surveys covered various aspects of their experiences in their respective educational settings. For analytical simplicity, responses were grouped thematically, and principal components analysis was used to create summarized indices. The findings are presented in the following order: school selection criteria, parental involvement, adherence to school policies, student behavior, and students' perceptions of their schools and teachers.

Selection before CAS was implemented

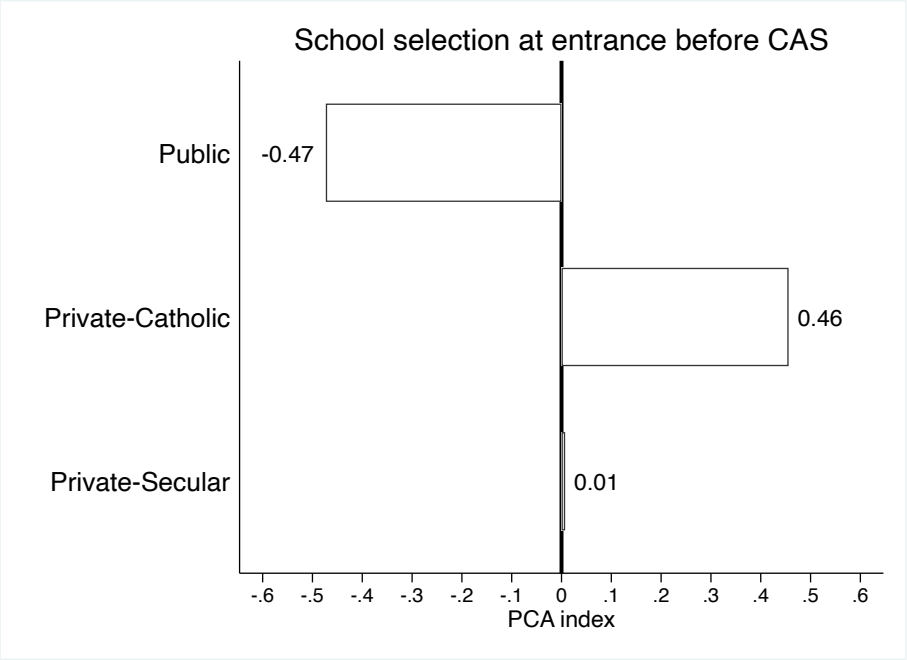
In the realm of student selection, Catholic schools exhibit a discernible pattern, as evidenced by the descriptive statistics in Table 1, which portray a student body composition characterized by higher income levels. This observation gains further support from Figure 3, which presents parental responses concerning the prerequisites or background information sought during the student application process. These prerequisites encompassed various elements, including transcripts from prior educational institutions, income documentation, and parental interviews, among others.

Evidently, the data underscores that Catholic schools occupied the position of being the most selective educational establishments prior to the universal implementation of the CAS (Centralized Admission System) across all publicly funded schools. This selectivity trend is followed by other private secular schools. As anticipated, public schools emerge as the least selective in this context.

Parent's involvement

Another common trait shared by high-performing schools is the degree of parental involvement in school activities, student behavior, and academic performance. Similar to the KIPP or No Excuses approach found in charter schools, Catholic schools also place a

Figure 4: Schools selection at entrance



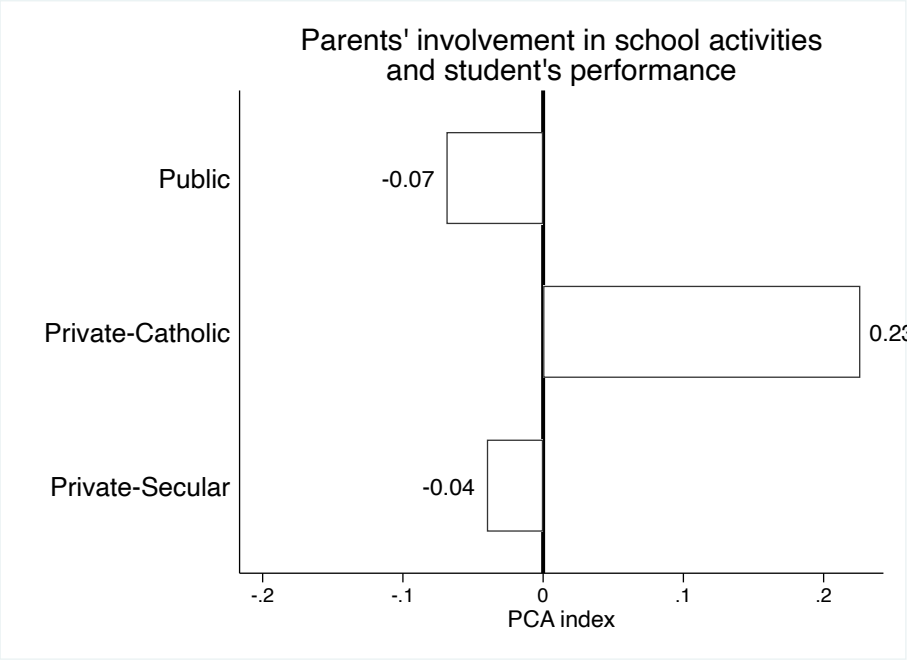
Note: Figure 3 illustrates the mean of the "admission selection" principal component indicator for the three types of schools. The "admission selection" indicator was generated using principal components analysis and calculated based on responses provided by parents who participated in a school survey regarding their experiences with their children's school. These responses were categorized and encompass data from all parents of 8th and 10th-grade students in the year 2017 who completed the school climate questionnaire. It's worth noting that these questionnaires were administered prior to the implementation of the CAS. For a detailed breakdown of the questions used to compute this indicator, please consult Table 12 in the annex. Source: Author's calculations.

premium on parental involvement in their child's educational journey compared to other types of schools. As depicted in Figure 4, parental involvement appears to be more of a priority in Catholic schools than in private secular or public schools. The principal component index for selection incorporates parental responses to questions related to the frequency of communication with parents and guardians about students' academic and personal progress, as well as the frequency with which headteachers schedule meetings with parents and guardians to discuss students, among other factors.

Rigor in school policies

Figure 5 delves into another aspect of high-performing schools, namely the rigor in enforcing rules and regulations outlined in the school's code of conduct. To construct this

Figure 5: parental involvement in the school



Note: Figure 4 illustrates the mean of the ”parents' involvement” principal component indicator for the three types of schools. The ”parents' involvement” indicator was generated using principal components analysis and calculated based on responses provided by parents who participated in a school survey regarding their experiences with their children's school. These responses were categorized and encompass data from all parents of 8th and 10th-grade students in the year 2017 who completed the school climate questionnaire. It's worth noting that these questionnaires were administered prior to the implementation of the CAS. For a detailed breakdown of the questions used to compute this indicator, please consult Table 12 in the annex. Source: Author's calculations.

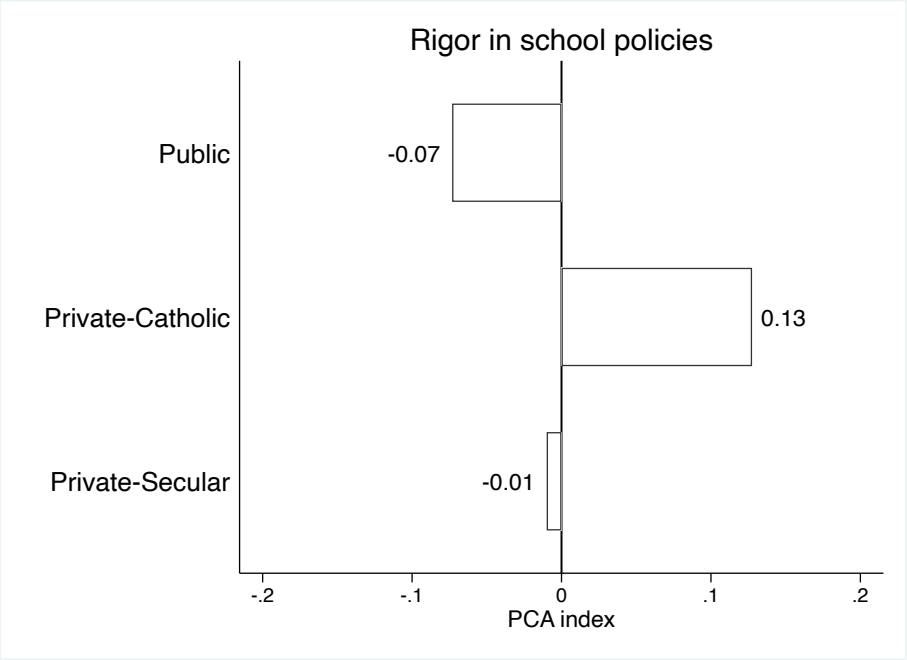
index, survey responses from both students and parents were utilized. Students were queried about their perceptions of school code adherence, the seriousness of actions such as class or school truancy, and insulting classmates. Parents were solicited for their opinions on the institution's adherence to the code of conduct and its handling of students with behavioral issues.

Consistent with other categories, Catholic schools emerge as exhibiting the strongest inclination toward strict adherence to their school code of conduct.

Student's behaviour

Figure 6 illustrates the results pertaining to the index evaluating student behavior. This category incorporates questions directed at teachers, mainly focused on student con-

Figure 6: Rigorous schools



Note: Figure 4 illustrates the mean of the "School's rigour" principal component indicator for the three types of schools. The "School's rigour" indicator was generated using principal components analysis and calculated based on responses provided by students and parents who participated in a school survey regarding their experiences with their school. These responses were categorized and encompass data from all 8th and 10th-grade students and their parents in the year 2017 who completed the school climate questionnaire. It's worth noting that these questionnaires were administered prior to the implementation of the CAS. For a detailed breakdown of the questions used to compute this indicator, please consult Table 12 in the annex. Source: Author's calculations.

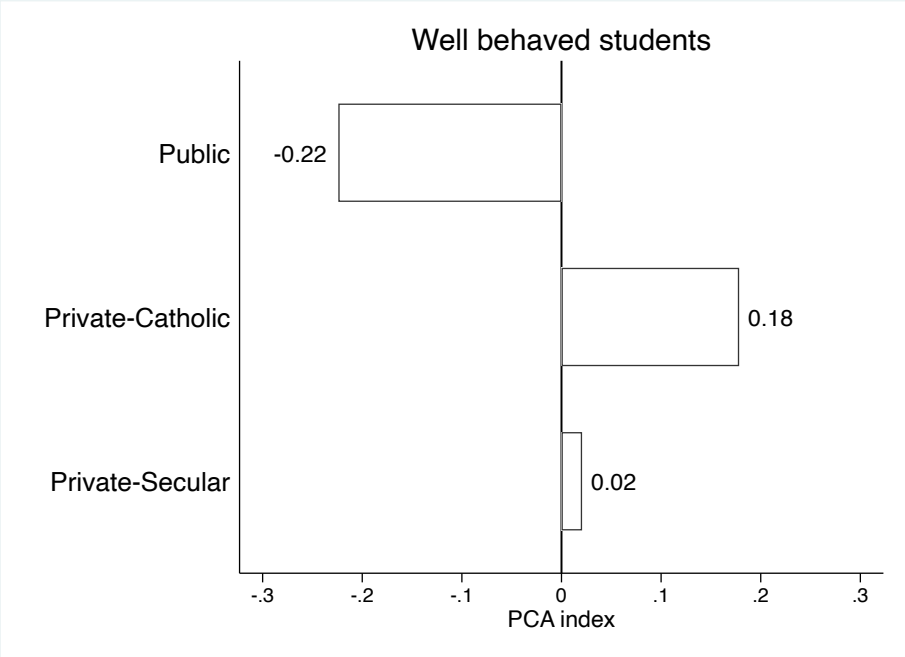
duct in class and adherence to norms established by teachers. Catholic schools once again lead in this indicator, consistent with their rigor in adhering to school norms.

Students like school and feel supported by teachers

When examining student sentiments toward their schools, Catholic school students tend to express higher levels of satisfaction compared to their public school counterparts (Figure 9). However, public school students report a greater sense of support from their teachers (Figure 8).

The index measuring students' affinity for their schools was constructed from questions posed to students, addressing their enjoyment of attending school, pride in their institution, and willingness to recommend it to others.

Figure 7: Good student behaviour



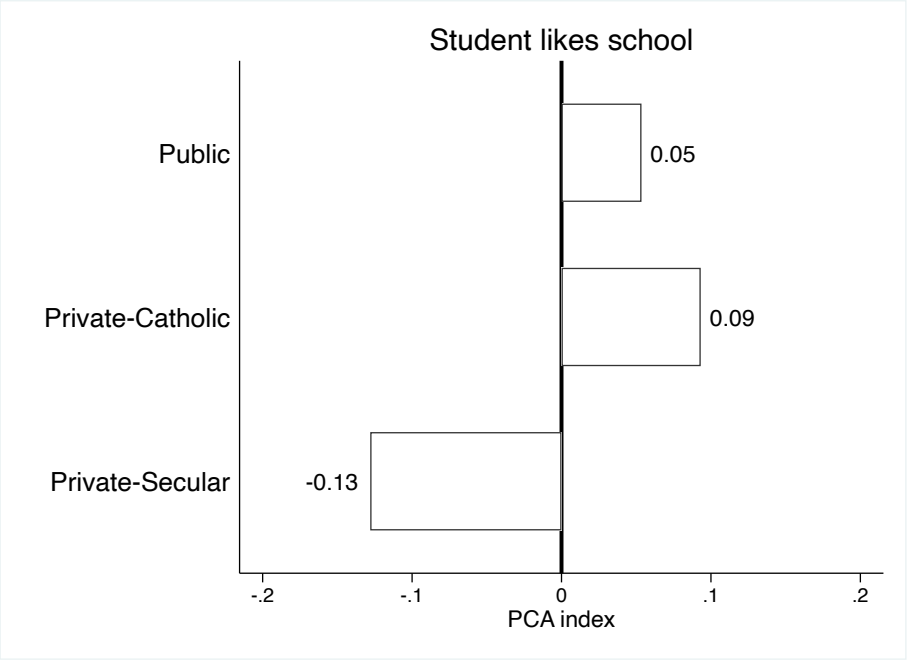
Note: Figure 4 illustrates the mean of the ”Well behaved students” principal component indicator for the three types of schools. The ”Well behaved students” indicator was generated using principal components analysis and calculated based on responses provided by teachers who participated in a school survey regarding their experiences in their school. These responses were categorized and encompass data from all 8th and 10th-grade teachers in the year 2017 who completed the school climate questionnaire. It's worth noting that these questionnaires were administered prior to the implementation of the CAS. For a detailed breakdown of the questions used to compute this indicator, please consult Table 12 in the annex. Source: Author's calculations.

Regarding the index gauging whether students feel supported by their teachers, the questions posed to students encompassed various affirmations such as, ”My teachers tell me that I am capable of learning,” ”My teachers motivate me to study and make an effort,” or ”My teachers make me feel that I am an important part of my institution.”

8 Conclusion

In conclusion, this study has conducted an extensive examination of the educational landscape in Chile, with a specific focus on the impact of Catholic schools on student outcomes. By leveraging school admission-lotteries exogenous variation, this research advances our understanding of the educational effectiveness of Catholic schools.

Figure 8: Students like their school

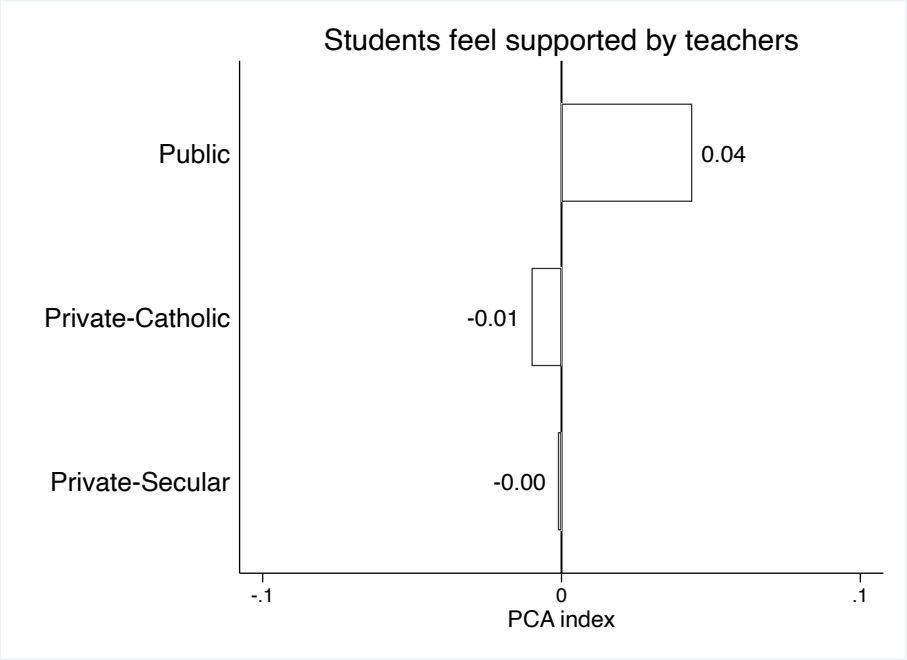


Note: Figure 4 illustrates the mean of the "Students like their school" principal component indicator for the three types of schools. The "Students like their school" indicator was generated using principal components analysis and calculated based on responses provided by students who participated in a school survey regarding their experiences in their school. These responses were categorized and encompass data from all 8th and 10th-grade students in the year 2017 who completed the school climate questionnaire. It's worth noting that these questionnaires were administered prior to the implementation of the CAS. For a detailed breakdown of the questions used to compute this indicator, please consult Table 12 in the annex. Source: Author's calculations.

Leveraging the unique Chilean context characterized by lottery-based school admissions and a centralized admission system, this study successfully mitigated concerns related to selection biases. The findings have illuminated a nuanced array of outcomes associated with attending Catholic schools. Notably, such attendance has been linked to positive effects on academic performance, particularly in math and reading, as well as heightened rates of college application and acceptance. However, these benefits exhibit intriguing gender-specific variations, with female students emerging as the primary beneficiaries in terms of math and reading performance on college-entry exams, while male students primarily benefit in terms of college acceptance rates.

Furthermore, the survey data have unveiled intriguing parallels between Catholic

Figure 9: Students feel supported by teachers



Note: Figure 4 illustrates the mean of the "Students feel supported by teachers" principal component indicator for the three types of schools. The "Students feel supported by teachers" indicator was generated using principal components analysis and calculated based on responses provided by students who participated in a school survey regarding their experiences in their school. These responses were categorized and encompass data from all 8th and 10th-grade students in the year 2017 who completed the school climate questionnaire. It's worth noting that these questionnaires were administered prior to the implementation of the CAS. For a detailed breakdown of the questions used to compute this indicator, please consult Table 12 in the annex. Source: Author's calculations.

schools and the No-Excuses and KIPP charter school models, marked by stringent disciplinary measures and heightened parental engagement. These resemblances expand our comprehension of school models and their potential influence on student achievement.

This investigation also underscores gender-specific educational disparities, challenging conventional assumptions about the uniformity of educational interventions. The dearth of low-performing male students in Catholic schools, potentially attributable to attrition, fosters an enriched learning environment, conducive to enhanced teaching efficiency and improved academic outcomes. Particularly noteworthy is the substantial benefit accruing to female students.

The findings of this study carry several implications for both education policy and

future research. Firstly, policymakers should consider the nuanced impacts of Catholic schools on student outcomes when formulating education policies. Understanding the differential effects on male and female students can inform strategies aimed at improving educational equity.

Secondly, this research opens avenues for future investigations. One possible extension is exploring the long-term effects of Catholic school attendance, including post-secondary education trajectories and career attainment. Additionally, comparative analyses across different countries and educational contexts could offer insights into how variations in educational policies influence the outcomes of Catholic schools.

Future research in this domain could delve into the mechanisms driving the varying impacts of Catholic schools on male and female students, shedding light on the complex interplay between school environment, gender, and academic outcomes. Additionally, examining the role of religious teachings in influencing students' major preferences could provide further insights into the factors shaping gender disparities in STEM fields, extending the current body of literature in this area.

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Appendix

Table 13: Female students results by baseline math: Dropout and academic performance

	High-School		CEE: Scored above national mean			
	Dropout	Took CEE	Math	Spanish	Science	History
A. Females below math-baseline class mean						
Private-Catholic	-0.021	0.112	0.053	0.114**	0.041	0.028
	(0.035)	(0.076)	(0.057)	(0.052)	(0.072)	(0.069)
Private-Secular	-0.033	0.109	-0.035	0.112*	0.021	0.114
	(0.043)	(0.093)	(0.070)	(0.064)	(0.089)	(0.085)
Observations	1,063	1,063	1,063	1,063	1,063	1,063
R-squared	0.002	0.019	0.001	0.022	0.006	0.018
Mean Pub	0.0590	0.497	0.121	0.0620	0.266	0.210
B. Females above math-baseline class mean						
Private-Catholic	-0.005	0.079	0.288***	0.225**	-0.005	0.133
	(0.022)	(0.072)	(0.088)	(0.087)	(0.089)	(0.086)
Private-Secular	-0.025	-0.033	0.153	0.202**	-0.063	0.153
	(0.023)	(0.078)	(0.095)	(0.095)	(0.096)	(0.094)
Observations	920	920	920	920	920	920
R-squared	0.000	0.022	0.000	0.009	0.018	0.007
Mean Pub	0.0180	0.761	0.407	0.367	0.468	0.361

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Table X presents IV estimated coefficients for enrollment in Catholic or private-secular schools, stratified by baseline math ability and gender. Panel A shows results for female students who enrolled in schools where their 8th-grade math test scores were below the class mean, while Panel B presents results for female students whose math test scores were above the class mean.Source: Author's calculations

Table 14: Female students results by baseline math: College application

	Applied College				
	Any	STEM	Health	Arts&-Humanities	Accepted
A. Below math-baseline class mean					
Private-Catholic	0.075	-0.024	0.062	-0.010	0.064
	(0.065)	(0.026)	(0.045)	(0.019)	(0.046)
Private-Secular	0.041	-0.037	0.009	-0.002	0.050
	(0.080)	(0.032)	(0.056)	(0.023)	(0.057)
Observations	1,063	1,063	1,063	1,063	1,063
R-squared	0.006	0.000	0.005	0.001	0.013
Mean Pub	0.175	0.0180	0.0770	0.0120	0.0560
B. Above math-baseline class mean					
Private-Catholic	0.055	-0.079	0.091	-0.012	0.125
	(0.088)	(0.056)	(0.070)	(0.038)	(0.083)
Private-Secular	0.088	0.004	0.118	-0.023	0.089
	(0.095)	(0.060)	(0.076)	(0.041)	(0.089)
Observations	920	920	920	920	920
R-squared	0.010	-0.003	-0.000	0.006	0.007
Mean Pub	0.425	0.122	0.177	0.0460	0.312

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Table X presents IV estimated coefficients for enrollment in Catholic or private-secular schools, stratified by baseline math ability and gender. Panel A shows results for female students who enrolled in schools where their 8th-grade math test scores were below the class mean, while Panel B presents results for female students whose math test scores were above the class mean.Source: Author's calculations

Table 15: Male students results by baseline math: Dropout and academic performance

	High-School		CEE: Scored above national mean			
	Dropout	Took CEE	Math	Spanish	Science	History
A. Below math-baseline class mean						
Private-Catholic	0.101**	0.087	0.038	0.036	0.058	0.048
	(0.044)	(0.077)	(0.054)	(0.050)	(0.061)	(0.063)
Private-Secular	0.103**	0.143	-0.010	0.008	0.025	0.177**
	(0.051)	(0.089)	(0.063)	(0.058)	(0.071)	(0.074)
Observations	838	838	838	838	838	838
R-squared	-0.003	0.027	0.028	0.036	0.014	0.017
Mean Pub	0.0700	0.377	0.104	0.0940	0.153	0.190
B. Above math-baseline class mean						
Private-Catholic	-0.071*	0.212**	0.105	0.124	0.136*	0.082
	(0.040)	(0.085)	(0.082)	(0.081)	(0.080)	(0.080)
Private-Secular	-0.029	0.189	0.101	0.117	0.218*	-0.137
	(0.065)	(0.138)	(0.134)	(0.131)	(0.130)	(0.131)
Observations	831	831	831	831	831	831
R-squared	0.008	-0.006	0.019	0.022	0.008	0.004
Mean Pub	0.0630	0.552	0.320	0.285	0.281	0.311

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Table X presents IV estimated coefficients for enrollment in Catholic or private-secular schools, stratified by baseline math ability and gender. Panel A shows results for male students who enrolled in schools where their 8th-grade math test scores were below the class mean, while Panel B presents results for male students whose math test scores were above the class mean.Source: Author's calculations

Table 16: Male students results by baseline math: College application

	Applied College				
	Any	STEM	Health	Arts&-Humanities	Accepted
A. Below math-baseline class mean					
Private-Catholic	0.051	0.038	0.042	0.037*	0.049
	(0.052)	(0.037)	(0.032)	(0.021)	(0.044)
Private-Secular	0.043	0.009	-0.004	0.049**	-0.011
	(0.061)	(0.043)	(0.037)	(0.025)	(0.051)
Observations	838	838	838	838	838
R-squared	0.014	0.003	0.002	-0.002	0.006
Mean Pub	0.106	0.0440	0.0390	0.00800	0.0620
B. Above math-baseline class mean					
Private-Catholic	0.100	0.052	-0.032	-0.003	0.152**
	(0.076)	(0.062)	(0.045)	(0.031)	(0.071)
Private-Secular	0.075	0.112	0.026	0.032	0.150
	(0.124)	(0.101)	(0.073)	(0.050)	(0.116)
Observations	831	831	831	831	831
R-squared	0.011	-0.003	0.009	-0.006	0.006
Mean Pub	0.218	0.137	0.0490	0.0350	0.172

Note: Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
Table 8 presents IV estimated coefficients for enrollment in Catholic or private-secular schools, stratified by baseline math ability and gender. Panel A shows results for male students who enrolled in schools where their 8th-grade math test scores were below the class mean, while Panel B presents results for male students whose math test scores were above the class mean.Source: Author's calculations

Table 17: Add caption

Component	Questions	Who answers? Student	Parent	Teachers
Selection at entrance before CAS	Which of the following requirements or background information were requested when the student applied to this institution?		x	
	1. Transcript from the previous school		x	
	2. Parent Interview		x	
	3. The student had to take a written exam or an entrance test.		x	
	4. Psychological or behavioral report.		x	
	5. Income resport		x	
Parental involvement	On a scale from 1 to 7, what grade would you give to the following aspects of the institution?		x	
	1. The frequency with which parents and guardians are informed about the academic and personal progress of the students.		x	
	2. How parents and guardians are informed about any issues that the student may have.		x	
	3. The frequency with which the headteacher schedules meetings with parents and guardians to discuss the student.		x	
	4. The willingness of the headteacher to address my concerns regarding the student (e.g., inquiries about their behavior, academic performance, interactions with peers, etc.).		x	
	5. The willingness of the school authorities to receive and listen to concerns and suggestions (e.g., they attend to me when I have a concern about my child's behavior or a suggestion regarding the functioning of the institution, etc.).		x	
	How much do you agree or disagree with the following statements related to the institution?		x	
	1. The institution values parental involvement in the development of students.		x	
	2. The opinions of parents and guardians are considered in the decisions made by the institution.		x	

Table 18: Add caption

Rigour in school policies	How much do you agree or disagree with each of the following statements?		
	1.Students respect the rules of the chool's code of conduct.	x	
	2. The institution makes us comply with the sanctions established in the school coexistence manual	x	
	"What do you think of the following actions?"	x	
	1. Not attending classes	x	
	2. Escaping from school	x	
	3. Copying during exams	x	
	4. Copying assignments or tasks	x	
	5. Insulting a classmate	x	
	The teachers prohibit us from using our phones in class without their permission	x	
	On a scale from 1 to 7, what grade would you give to the following aspects of the institution?		
	1. The adherence to rules of the school's code of conduct		x
	2. The institution's work with students who have behavioral problems.		x
Well behaved students	How often do the following situations occur with students in your classes?		
	1. Students adhere to the rules inside the classroom		x
	2. Disruptions occur during classes that affect the learning atmosphere		x
	3. Students pay attention during classes		x
	4. I have to interrupt classes due to students' disorderly behavior.		x
Students like school	How much do you agree or disagree with each of the following statements related to your school?		
	1. I enjoy coming to school	x	
	2. I feel proud of my school	x	
	3. I speak highly of my school to others	x	
	4. I would recommend to a friend that they switch to this school.	x	
Students feel supported by their teachers	How much do you agree or disagree with each of the following statements?		
	1. My teachers tell me that I am capable of learning	x	
	2. My teachers tell me that I am a good student	x	
	3. My teachers motivate me to study and make an effort.	x	
	4. My teachers motivate me to become better every day.	x	
	5. My teachers make me feel that I am an important part of my institution	x	

Table 19: Add caption

Rigour in school policies	How much do you agree or disagree with each of the following statements?		
	1.Students respect the rules of the chool's code of conduct.	x	
	2. The institution makes us comply with the sanctions established in the school coexistence manual	x	
	"What do you think of the following actions?"	x	
	1. Not attending classes	x	
	2. Escaping from school	x	
	3. Copying during exams	x	
	4. Copying assignments or tasks	x	
	5. Insulting a classmate	x	
	The teachers prohibit us from using our phones in class without their permission	x	
	On a scale from 1 to 7, what grade would you give to the following aspects of the institution?		
	1. The adherence to rules of the school's code of conduct		x
	2. The institution's work with students who have behavioral problems.		x
Well behaved students	How often do the following situations occur with students in your classes?		
	1. Students adhere to the rules inside the classroom		x
	2. Disruptions occur during classes that affect the learning atmosphere		x
	3. Students pay attention during classes		x
	4. I have to interrupt classes due to students' disorderly behavior.		x
Students like school	How much do you agree or disagree with each of the following statements related to your school?		
	1. I enjoy coming to school	x	
	2. I feel proud of my school	x	
	3. I speak highly of my school to others	x	
	4. I would recommend to a friend that they switch to this school.	x	
Students feel supported by their teachers	How much do you agree or disagree with each of the following statements?		
	1. My teachers tell me that I am capable of learning	x	
	2. My teachers tell me that I am a good student	x	
	3. My teachers motivate me to study and make an effort.	x	
	4. My teachers motivate me to become better every day.	x	
	5. My teachers make me feel that I am an important part of my institution	x	