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The Effect of Taxpayer-Funded Education Savings Accounts on Private School Tuition: Evidence from Iowa

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ABSTRACT

Does state implementation of Education Savings Accounts (ESAs), which are voucher-like taxpayer-funded subsidies for children to attend private schools, increase tuition prices? We analyze a novel longitudinal dataset for all private schools in Iowa and Nebraska, neighboring states that adopted ESAs in the same legislative session, with Iowa's implementation beginning first. By leveraging state and grade-level variation in eligibility, we provide new causal evidence that ESAs led Iowa private schools to increase tuition. Increases varied by the percentage of the grade eligible for ESAs. When eligibility was universal (kindergarten), private schools increased prices 21-25%, compared with 10-16% in grades with partial eligibility. In contrast, private schools did not increase tuition in pre-K, which was ineligible for ESAs. If a goal of ESAs is to extend private school access to new families, the substantial tuition increases they produce may limit access.

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INTRODUCTION

Do Education Savings Accounts (ESAs), which are voucher-like taxpayer-funded subsidies for children to attend private schools, lead private schools to increase tuition prices? This is a central question confronting policymakers in 12 states that have recently adopted statewide ESAs.[2]

Microeconomic theory predicts that, absent any limitations on tuition increases, the introduction of publicly funded school vouchers will lead private schools to increase tuition. Most work on this question has addressed higher education, responding to former Secretary of Education William Bennet's hypothesis that "increases in financial aid in recent years have enabled colleges and universities blithely to raise their tuitions, confident that Federal loan subsidies would help cushion the increase" (Bennett 1987, 31). Researchers have found support for the Bennett hypothesis, with important caveats. While increases in Pell grants lead to one-to-one increases in tuition for private universities and out-of-state tuition rates for public institutions, they do not increase in-state tuition for public universities (Singel and Stone 2007). The assumed mechanism underlying these institutional differences is private schools' agency in setting tuition prices, in contrast to legislatures setting public tuition prices.

Given their recent implementation, little research exists that examines the tuition impacts of statewide ESA policies. Using longitudinal data collected by the Internal Revenue Service on private school revenue, Hungerman and Rinz (2016) investigated the impact of eight large private school subsidy programs on the service revenue generated by participating schools. They found that school subsidies increased revenue for private schools in their sample. Targeted programs

[2] ESAs directly provide families with public funds to use on private educational options, and vary in their permitted expenditures. In some cases, ESAs only support private school tuition and fees. In others, families homeschooling their children can also use the funds for education-related goods and services such as learning materials, private tutoring, or recreational lessons.

(e.g., those for low-income students) increased private school revenue through enlarged enrollments, while unrestricted programs captured subsidy funds by increasing tuition and fees. More recent research produced by the Heritage Foundation (Bedrick, Greene, and Burke 2023) challenged Hungerman and Rinz's findings, concluding that voucher and tax credit laws have no effect on the price of school tuition and, in some cases, produced smaller tuition rate increases. Hungerman, in turn, noted that Bedrick et al.'s estimates were difficult to evaluate because standard errors were not reported (Morton 2023).

The present study estimates the causal effect of Iowa's ESA program on private school tuition costs by comparing tuition change across grades with a meaningfully selected comparison state. Neighboring states Iowa and Nebraska passed universal ESA bills in the same 2023 legislative session. Iowa, which passed its bill in January, implemented ESAs for the 2023-24 school year, while Nebraska, which passed its bill in May, will be implemented in the 2024-25 school year. Importantly, while all kindergarteners were eligible for ESAs, only some students in grades 1-12 were, and no students were eligible in pre-K. We make use of state and grade variation in ESA eligibility to estimate the effect of ESAs on tuition.

DATA AND METHODS

DATA

We built an original data set using data collected from Iowa and Nebraska private school websites, the Iowa Department of Education, the Nebraska Department of Education and the National Center for Education Statistics. Doing so is necessary because national, state, and commercial private school databases include no or limited information regarding tuition costs.

We first retrieved the census of Iowa and Nebraska private schools operating in 2023-24 from the Iowa and Nebraska Departments of Education, and collected Iowa 2023-24 academic

year tuition information by grade for non-parishioners for the directly from school websites in June and July 2023. In July and August 2023, we then emailed Iowa schools with missing tuition to recover these data. For those schools for which we still had missing data for the 2023-24 academic year, we visited websites again in November 2023 to determine whether tuition information was posted after school began. We then collected Nebraska private school tuition information for the same school years. We retrieved historical tuition information from archived versions of school websites using the Wayback Machine digital archive. We supplemented these data with information on current and historical school enrollment, grade levels served, religious affiliation, and geographic information from the Iowa and Nebraska Departments of Education and Common Core of Data Private School Universe from the National Center of Education Statistics.

The data used in this study improve on the data quality in prior work on K-12 private schools' responses to new subsidies. Previous studies have relied on two sources for tuition data – nonprofit tax records (Form 990) and the Private School Review website. While Hungerman and Rinz (2016) study reflects an ambitious and important data gathering effort, nonprofit tax record data largely excludes many religious institutions, which make up 69% of private schools nationally (Broughman and Pugh 2004). Ultimately, Hungerman and Rinz's (2016) matched sample included about one out of every nine private schools.

Our data collection also makes multiple improvements over the Private School Review website data, which are limited in coverage as private schools are required to make an account and upload and update tuition information. Private School Review reports non-missing academic year 2023/24 tuition information for 30% of Iowa private schools, while collecting data directly from school websites yielded valid tuition data for 70% of Iowa private schools.[3]

[3] A comparison of tuition values for the same population of schools with non-missing data published by Private School Review and those collected directly from school websites demonstrates substantial underreporting of tuition prices.

In 2023, 70% of Iowa's 166 private schools[4] published 2023-24 tuition information on their school website or responded to a request for tuition information. Of these 166 schools, we recovered tuition information for 2023/24 and at least one prior year for 63%. As our analyses are weighted by grade-level enrollment, our analytic sample is further reduced by availability of grade-level enrollment information. Our final analytic sample include 51% of Iowa private schools educating 62% of Iowa private school students, and 44% of Nebraska private schools educating 51% of Nebraska private school students.[5]

ANALYTIC STRATEGY

We examine variation in rates of change across grade levels due to the unique features of the Iowa ESA program, which in its first year was available to all rising kindergarten students. In grades 1-12, a subset of students was eligible, including students in families making up to 300% of poverty (~90,000), which includes 47% of Iowa families with school-aged children (Authors' estimates using IPUMS Census data), and those transferring from public schools. Students in pre-K, however, were not able to access ESAs. Therefore, we investigate how the distribution of

Appendix Table A1 compares summary statistics for 2023-24 tuition, and Figure A1 compares the distribution of tuition data for schools. Finally, beyond the underreporting issue, the tuition data in this study offers additional improvements over Private School Review data. While tuition often varies by grade level and parish membership, Private School Review did not consistently report tuition for the highest-grade levels, as it claimed to, nor did it consistently report in-versus-out of parish pricing.

[4] Iowa's Department of Education lists 178 schools as operating in the 2023-24 school year. Because different grade-level divisions are reported as separate schools in a small number of cases, we collapse these data into one school observation, yielding a total of 166 schools.

[5] In Appendix B, we model the predictors of inclusion in our analytic sample: Iowa and Nebraska private schools with valid tuition data for the 2023-24 school year and at least one prior year. Because we weight our analysis by grade-level school enrollment, schools in our analytic sample must also have non-missing grade-level enrollment data from NCES or the respective Department of Education. We examine the extent to which private schools included and excluded from our sample vary by school characteristics. Table B1 displays the percent of Iowa private schools in our analytic sample by school characteristics and Table B2 presents this information for Nebraska. Table B3 presents results of linear probability models of analytic sample inclusion by school characteristics for both Iowa and Nebraska.

changes in tuition prices varies between pre-K (no eligibility), Kindergarten (universal eligibility), and grades 1-12 (partial eligibility) in the first year of implementation in Iowa compared to in Nebraska, our comparison state.

We estimate separate difference-in-differences models for each of these three eligibility types, and provide two sets of estimates: one with and without school fixed effects. This model takes the following form:

$$(1)\ \log(Y_{ijks}) = \beta_0 + \beta_1 ESA\ Treatment_{ijks} + \gamma Year_{ijks} + \delta ESA\ Treatment * Year_{ijks} + \alpha_j + \epsilon_j$$

where Y_{ijks} is the tuition price for the grade-school cell *ij* in year *k* in state *s*. The term *ESA* $Treatment_{ijks}$ is a binary measure indicating that the state is Iowa, the state that implemented an ESA program in 2023/24. $Year_{ijks}$ is a series of dummy variables indicating the academic year, where 2023/24 indicates post Iowa ESA implementation. The coefficient of interest δ is on the interaction term *ESA Treatment*Year*$_{ijks}$. School fixed effects are indicated by α_j. For the models including partially eligible grades (grades 1-12), we use a set of school/grade-level fixed effects to compare prices for the same grade within the same school over time. Models are weighted by enrollment in grade level *i* in school *j* at time *k*, so our estimates represent tuition changes for the average student at a given grade level. Standard errors are clustered at the school level for pre-K and kindergarten models; for models including partially eligible grades, standard errors are clustered at the grade-school level.

Whether the reader prefers estimates with or without school effects may depend on their position in the system. Our estimates without school fixed effects represent the population-level impact across the pool of private schools, and may be of greatest interest to a state policymaker.

In contrast, our estimates including school fixed effects better represent the experience of a family concerned with tuition changes within the same school.

RESULTS

Table 1 presents enrollment weighted mean tuition prices from 2021/22 to 2023/24 by Iowa ESA grade-level eligibility, year, and state. In Iowa schools, we observe significant grade-level variation in the change in tuition price by period. Eligible grades experience significant increases in tuition following Iowa's ESA implementation. We observe no such patterns for Nebraska schools. Tuition increases by state, which are most apparent in the grade of universal eligibility (kindergarten), are plotted in Figure 1.

[FIGURE 1 ABOUT HERE]

[TABLE 1 ABOUT HERE]

Table 2 reports the results of our difference-in-differences model (equation 1) stratified by Iowa ESA grade-level eligibility. Model 1 estimates the association between log tuition price and year by our ESA state indicator for pre-K, and Model 2 introduces school fixed effects. Across both models and as expected, we observe that ESA implementation had no effect on tuition prices for non-eligible grades. Models 3-4 present these results for partial eligibility grades (1-12). Before accounting for school-grade fixed effects, we find that ESA implementation caused an additional increase in tuition price of 16%, which drops to 10% (about $830) when fixed effects are added. This 38% reduction once school-grade fixed effects are introduced means that schools' behavior in responses to ESAs varies significantly.

We estimate that ESA implementation had the largest effect on universally eligible grades, for which we observe an increase in kindergarten tuition of 25%, which drops to 21% (about

$1,280) when we add school fixed effects. In contrast to the 38% reduction we observed when school fixed effects were introduced for partial eligibility grades, we observe only a 16% reduction in universal eligibility grades.

Importantly, in each of these sets of models, we observe no difference in the Iowa vs. Nebraska trend (represented by 2022-23*ESA) in the pre-treatment years, suggesting Nebraska is an appropriate comparison group for Iowa.

[TABLE 2 ABOUT HERE]

DISCUSSION

In this study, we demonstrated that the implementation of Iowa's ESAs led private schools to increases in tuition prices, and that such increases were largest when students were universally eligible (21-25%) versus partially eligible (10-16%). It is worth noting that we observed more variation in school behavior for partially eligible (grades 1-12) than universally eligible grades (kindergarten). One interpretation of this finding is that in universal eligibility grades, the impact of tuition increases on students who did not qualify for an ESA was not a consideration in setting tuition prices.

Iowa's ESA program's expressed purpose was to increase access to "the school best suited" for a child, "regardless of zip code or income" (Office of Governor Reynolds 2023). To the extent tuition levels outpace the ESA payment, families unable to further contribute to tuition may be priced out of schools, thus defeating the program's stated goal. If this is the case, ESAs act as tuition subsidies for families who can already afford private school. Future work should consider to what extent tuition increases limit families' options.

In addition to the issue of access, tuition increases raise the question of whether the quality of the education provided in these institutions has also increased or remained constant. In the absence of improvement, the ESA subsidy is acting as revenue enhancement for the organizations operating schools, 96% of which are religious organizations. Absent quality improvement, policymakers may see subsidizing tuition increases as inconsistent with the goal of the ESA policy.

The primary limitation of this paper is its focus on a single state's ESA program. Whether these findings generalize across ESA-adopting states is an open question. Future research should investigate ESA effects on tuition using multi-state comparisons and identify the contextual and organizational factors associated with private schools' responses to new subsidies.

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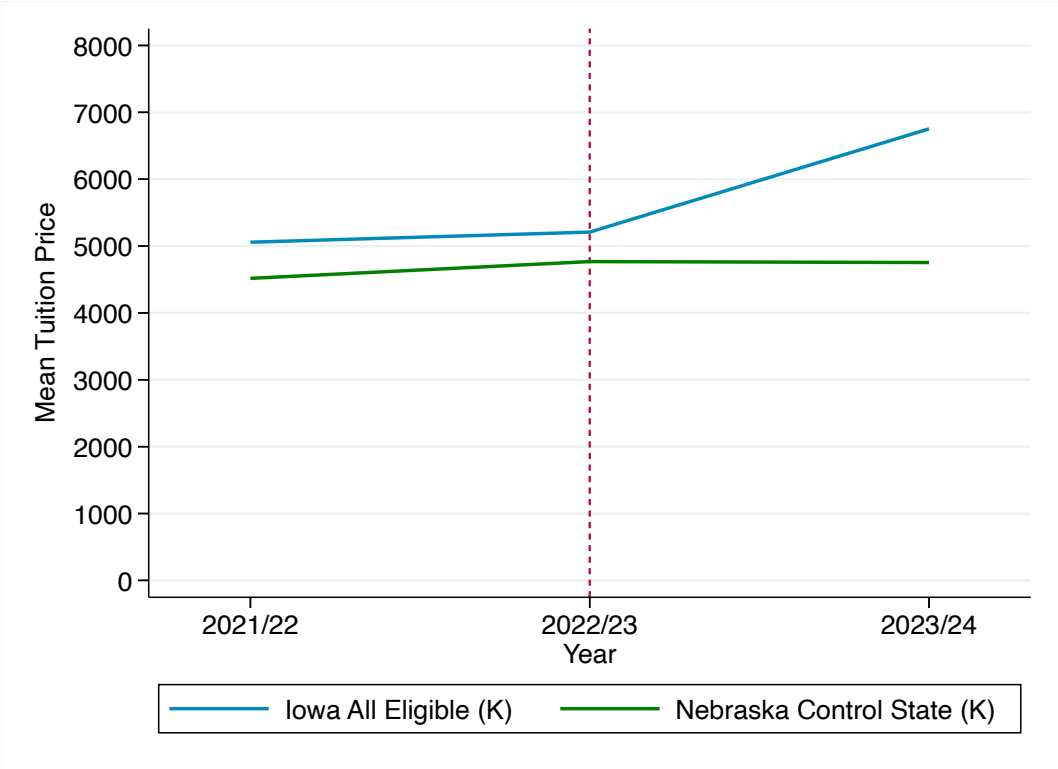

Figure 1. Mean Kindergarten Tuition Price by Year and State.

Note: Both Iowa and Nebraska passed ESA legislation in the 2023 legislative session, but Iowa adopted the program in the 2023-24 school year, while Nebraska's program will begin in the 2024-25 school year. Tuition data are weighted by kindergarten enrollment, and thus represent the tuition price for the school attended by the average kindergartener.

Table 1. Mean Tuition Price by Iowa ESA Grade-Level Eligibility, Year, and State

	Iowa				Nebraska			
	21/22	22/23	23/24	23/24 - 21/22	21/22	22/23	23/24	23/24 - 21/22
Not Eligible (Pre-K)	3,688	3,384	3,836	148 (4%)	4,043	4,041	4,377	334 (8%)
All Eligible (Kindergarten)	5,058	5,209	6,753	1,695 (34%)	4,517	4,768	4,754	237 (5%)
Some Eligible (Grades 1-12)	7,534	7,703	8,724	1,190 (16%)	6,863	6,468	7,285	422 (6%)

Table 2. Effect of Iowa ESA Implementation on Log Tuition Price by ESA State and Iowa ESA Grade-Level Eligibility

	Log Tuition Price					
	Non-Eligible (Pre-K)		Some Eligible (Grade 1-12)		All Eligible (Kindergarten)	
ESA State (Treatment)	-0.01	-	0.14	-	0.12	-
	(0.21)	-	(0.12)	-	(0.10)	-
Year						
2022/23	-0.02	0.09	-0.05	0.03 ***	0.03	0.03 **
	(0.08)	(0.09)	(0.04)	(0.01)	(0.04)	(0.01)
2023/24 (Post)	0.13	0.17	0.01	0.09 ***	0.06	0.08 ***
	(0.13)	(0.14)	(0.03)	(0.01)	(0.04)	(0.02)
ESA State*Year						
Iowa*2022/23	-0.10	-0.05	0.07	0.004	-0.001	0.02
	(0.15)	(0.09)	(0.04)	(0.01)	(0.05)	(0.03)
Iowa*2023/24 (Post)	-0.17	-0.05	0.16 **	0.10 **	0.25 **	0.21 *
	(0.17)	(0.14)	(0.04)	(0.04)	(0.08)	(0.09)
Constant	8.04 ***	7.95 ***	8.71 ***	8.76 ***	8.37 ***	8.44 ***
	(0.16)	(0.04)	(0.09)	(0.01)	(0.08)	(0.02)
Adj. R2	0.01	0.96	0.06	0.96	0.13	0.90
School Fixed Effects	No	Yes	No	Yes	No	Yes
Observations	224	224	738	738	319	319

Note: Robust standard errors reported in parentheses. Standard errors are clustered at the school level for pre-K and kindergarten models and at the school-grade level for modes of grades 1-12. Models weighted by school enrollment.
*p < .05; **p < .01; ***p < .001

APPENDIX A

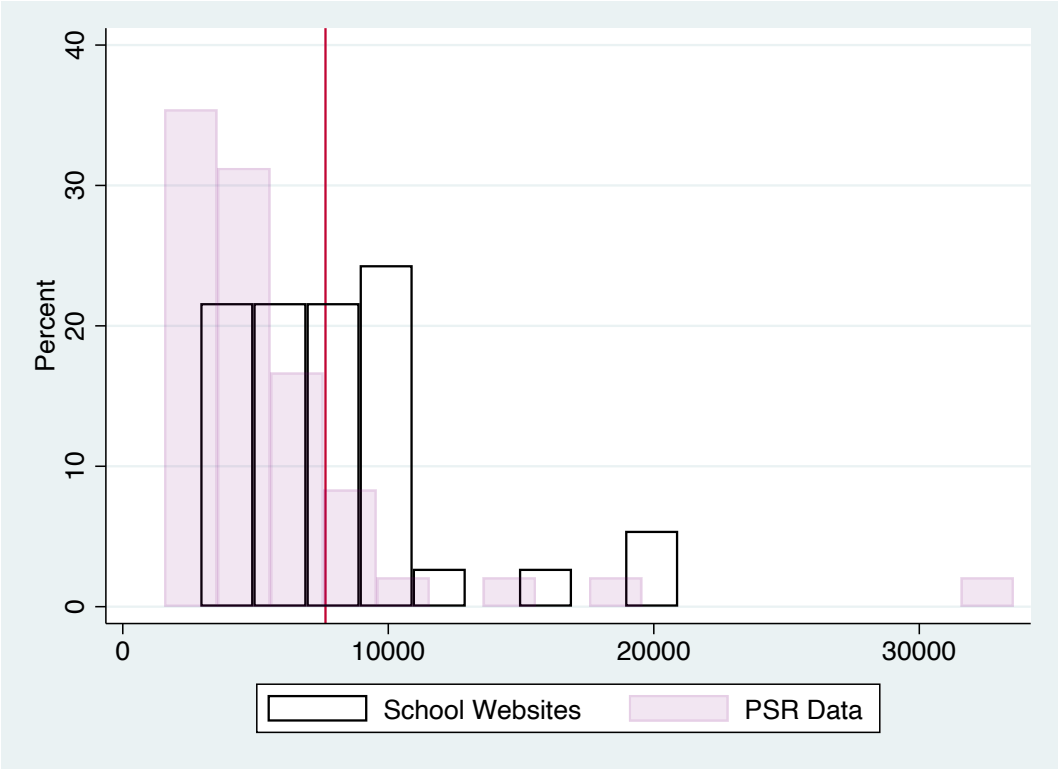

Figure A1. Distribution of Reported Tuition for Iowa Private Schools by Data Source

Note: Sample is limited to schools with tuition data from both sources (N=37). Private School Review (PSR) states that reported tuition is for the highest grade offered by the school. For this comparison, we use highest-grade tuition reported on school websites.

Table A1. Summary Statistics of Tuition by Data Source for Schools with Data from Both Sources.

	Median	Mean	SD	N
School Websites	7,950	8,066	3,807	37
Private School Review	5,000	6,256	5,682	37

Note: Private School Review states that reported tuition is for the highest grade offered by the school. For this comparison, we use highest-grade tuition reported on school websites.

APPENDIX B

Table B1. Iowa Private Schools Analytic Sample by School Characteristics

	Included	Excluded	P Value	Sig	N
Schools	0.51	0.49			166
Students	0.62	0.38			32,161
Orientation					
Nonsectarian	0.57	0.43	0.724		7
Catholic	0.58	0.42	0.020	*	96
Protestant	0.38	0.62	0.012	*	63
Grade Level					
Elementary	0.44	0.56	0.019	*	109
Secondary	0.57	0.43	0.521		21
Comprehensive	0.67	0.33	0.029	*	36
Locale					
City	0.63	0.37	0.014	*	62
Suburb	0.63	0.37	0.490		8
Town	0.42	0.58	0.085		62
Rural	0.41	0.59	0.218		34
Other Schools in County					
Yes	0.54	0.46	0.124		81
School Enrollment					
Mean	237	157	0.003	**	162
Q1	0.36	0.64	0.015	*	42
Q2	0.50	0.50	0.787		40
Q3	0.58	0.42	0.410		40
Q4	0.65	0.35	0.055		40
Published Documents					
Handbook	0.54	0.46	0.056		137
Application	0.53	0.47	0.442		88
Published ESA Information					
ESA	0.58	0.42	0.029	*	97

Table B2. Percent of Nebraska Private Schools in Analytic Sample by School Characteristics

	Included	Excluded	P Value	Sig	N
Schools	0.44	0.56			213
Students	0.51	0.49			36,504
Orientation					
Nonsectarian	0.35	0.65	0.525		17
Catholic	0.44	0.56	0.000	***	117
Protestant	0.45	0.55	0.056		76
Grade Level					
Elementary	0.39	0.61	0.017	*	155
Secondary	0.57	0.43	0.017	*	58
Comprehensive	NA	NA			0
Locale					
City	0.53	0.47	0.024	*	87
Suburb	0.09	0.91	0.018	*	11
Town	0.45	0.55	0.853		65
Rural	0.34	0.66	0.115		50
Other Schools in County					
Yes	0.45	0.55	0.548		182
School Enrollment					
Mean	199	150	0.051		213
Q1	0.28	0.72	0.006	**	54
Q2	0.47	0.53	0.552		53
Q3	0.47	0.53	0.552		53
Q4	0.53	0.47	0.120		53

Table B3. Linear Probability Models Predicting Inclusion in Iowa Analytic Sample

	Analytic Sample			
	Iowa		Nebraska	
Affiliation (Omitted = Protestant)				
Nonsectarian	0.08		0.04	
	(0.26)		(0.18)	
Catholic (Local)	0.17		-0.01	
	(0.09)		(0.01)	
Multiple Schools in County	0.06		-0.08	
	(0.11)		(0.14)	
School Enrollment	0.0005	**	0.0001	
	(0.0001)		(0.0002)	
Locale (Omitted = City)				
Suburb	0.13		-0.47	**
	(0.18)		(0.14)	
Town	-0.02		-0.08	
	(0.10)		(0.10)	
Rural	0.02		-0.12	
	(0.12)		(0.14)	
Published Handbook	0.02		-	
	(0.12)		-	
Published ESA Information	0.12		-	
	(0.08)		-	
Constant	0.19		0.60	**
	(0.17)		(0.17)	
Adj. R2	0.09		0.03	
Observations	162		210	

Note: For each state, we model predictors of inclusion in our analytic sample using linear probability models that take the form: $P(Y_i = 1) = \beta_0 + \gamma X'_i + \epsilon_i$. Where P(Yi=1) is the probability of inclusion in the analytic sample for school *i*, X′ is a vector of school characteristics: religious affiliation, presence of other schools serving the same grade level within the same county, school enrollment, school locale, public posting of other school materials, and posting of information regarding about the ESA program on the school website. Standard errors reported in parentheses. Models are weighted by school enrollment. Model sample varies from total sample due to missing data.

*p < .05; **p < .01; ***p < .001