Research in Educational Administration & Leadership

Volume: 8, Issue: 1 / March 2023

The Effects of Regulations on Private School Choice Program Participation: Experimental Evidence from the United States

Corey A. DeAngelis*

American Federation for Children, Cato Institute, Reason Foundation & Educational Freedom Institute, United States of America

Lindsey M. Burke

Heritage Foundation, United States of America

Patrick J. Wolf

University of Arkansas, Arkansas, University of America

Angela K. Dills

Western Carolina University, North Carolina, United States of America

Abstract

Private school leaders weigh costs and benefits when deciding whether to participate in school voucher programs. Regulatory costs associated with accepting voucher funding could reduce private school leaders' willingness to participate. We test this hypothesis through the first random assignment analysis of the effects of various regulations on the expressed willingness of private school leaders to participate in hypothetical voucher programs that draws upon national data. We randomly assign different regulations to U.S. private school leaders and ask them whether they would participate in a hypothetical school voucher program during the following school year. Relative to no regulations, we find that open-enrollment mandates reduce the likelihood that private school leaders report being certain to participate in a hypothetical choice program by about 14 percentage points, or 67%. The requirement that private schools

Article Info

Article History:
Received:
June 30, 2022
Accepted:
February 6, 2023

Keywords:
Private school, school choice, school vouchers, schooling supply, regulations, survey experiment

*Corresponding author
E-mail: cdeangelis@federationforchildren.org

accept the voucher funding amount as payment-in-full reduces the likelihood that private school leaders report being certain to participate by 16 percentage points, or 77%. Some regulations are more likely to deter private schools with higher reported tuitions, higher enrollment trends, more specialization, and more climate problems.

Cite as:
DeAngelis, C. A., Burke, L. M., Wolf, P. J., & Dills, A. K. (2023). The effects of regulations on private school choice program participation: Experimental evidence from the United States. *Research in Educational Administration & Leadership*, *8*(1), 142-186. https://doi.org/10.30828/real.1138598

Introduction

Private school voucher programs allow families to take a portion of their children's taxpayer-funded K-12 education dollars to the private school of their choosing. Legislators supporting these programs argue that voucher programs "[empower] parents to choose the educational opportunity that best suits their children's needs" and provide a "lifeline [for] students to succeed."[1] However, in an attempt to provide top-down accountability and equitable allocation of those taxpayer dollars, these programs often come with various forms of regulations on private schools. These regulations include requirements to administer standardized tests, provide financial reporting, admit all students who apply, and accept the voucher funding amount as payment-in-full (DeAngelis, 2020).

[1] Texas State Senator Mayes Middleton, November 15, 2022 in reference to Texas Senate Bill 176 and Virginia Lieutenant Governor Winsome Earle-Sears on January 12, 2023 in reference to Virginia HB 1508.

Testing mandates, proponents argue, generate information for parents and policy makers to know how children are progressing academically (Barnum, 2017). Open enrollment mandates and copay prohibitions intend to keep private schools available and affordable for parents. Further, these regulations could pressure participating private schools to improve outcomes and to provide more options to a wider set of students. However, in states where such programs operate, all private schools decide whether to participate in voucher programs each year. When making these decisions, private school leaders weigh the costs and benefits of participating in the voucher program. For private schools, the main benefits associated with participating in these programs are the additional voucher revenues and the expanded ability to meet their broader social goals of educating more children in a way that aligns with their mission. Although this is not a comprehensive list, the main costs associated with participating in a voucher program for private schools are adapting to new student populations and adjusting to additional government regulations (Austin, 2019; Sude, DeAngelis, & Wolf, 2018; DeAngelis, 2020).

All else equal, increasing burdensome regulations could reduce the likelihood that private school leaders decide to participate in a voucher program if the marginal regulatory costs outweigh the marginal benefits of participation. In other words, an increased regulatory burden associated with participating in a voucher program could decrease private school participation in a voucher program. A reduction in the number of private schools available to families participating in a voucher program could limit the program's effectiveness by reducing the chance that families find a school that is the right fit for their students' educational needs.

These regulations may also affect the quality of private schools that participate in a voucher program. Some schools may choose not to participate because they lack confidence in their ability to meet regulatory requirements or they may fail to meet regulatory requirements (Harris 2015). This is likely one motivation for the regulations: to exclude low-performing schools from participating in the voucher program.[2]

On the other hand, regulations may lower the average quality of participating private schools. Although we do not have direct measures of quality, we consider two proxies: tuition and enrollment growth. Price typically correlates with service quality, even in the non-profit realm. For example, in higher education, tuition and fees correlate well with college quality (Smart 1988; Zhang 2005). The maximum price of the voucher is more likely to cover the full cost of the student in low-tuition private schools than in high-tuition private schools, potentially leading high-tuition private schools to be more sensitive to regulations since they may need to subsidize the cost of students on vouchers. Private schools struggling to attract students – presumably those of lower quality – may be more willing to participate, regardless of the regulatory structure, because they are more likely to be financially struggling and would benefit the most from additional revenues (Bedrick, 2016; Hess, 2010; McShane, 2018; Sude, DeAngelis, & Wolf, 2018). Private schools with strong enrollment can afford to decline the voucher offer if regulations are too burdensome. Private schools also may have concerns about losing their existing customer base if the additional regulations fundamentally change the services they provide; some private schools

[2] See, for example, Prothero (2017).

may prefer to remain exclusive in their admissions. If regulations require changes in the educational model already working for their established clientele, these private schools may face greater costs to participating. We might also expect differential deterrent effects of regulations on private schools that have more specialized missions, if those schools believed the regulations associated with participation would require them to generalize their school's mission and purpose.

We perform an experiment in the form of a survey of actual leaders of private schools in the United States. We send nearly identical surveys to private school leaders from over 10,000 private schools, almost a third of the universe of private schools. Surveys differ in one way: we randomly assign a note capturing the control condition or one of four regulations to the last question of the survey. This last question asks whether the private school leader would participate in a hypothetical voucher program. The four randomly assigned regulations include the requirement to admit all students who apply, administer state standardized tests, administer nationally norm-referenced standardized tests, and accept the voucher amount of $6,000 as full payment for educating each voucher student.

We chose these regulations because they are the more common regulations found in the 63 voucher and voucher-like programs such as education savings accounts (ESAs) and tax credit scholarships (EdChoice 2023). Testing mandates –both state and national – are the most common of the four regulations we consider. Of the 10 ESAs, 3 (30%) required state criterion referenced or national normed testing, one (10%) required a state criterion referenced test, and a fifth state had a national normed test mandate; half had some testing mandate. Among the 27 voucher programs, 11 (41%) had state criterion-

referenced test mandates, 7 (26%) national normed test mandates, and 2 (7%) had other testing mandates. Of the 7 voucher programs not requiring testing, five of them only serve students with special needs. Of the 26 tax credit scholarships, 5 (19%) require either state or national tests; 5 (19%) require a national test; 2 (7%) require a state test.

Among voucher and voucher-like programs, whether parents are prevented from supplementing the voucher amount had been the next most common regulation of the four we consider. Note that as recently as 2021, 12 of 58 (21%) voucher and voucher-like programs prohibited parents supplementing scholarships with another 16 (28%) placing conditions on which families can supplement. For the most recent year, 2023, however, only 10 programs of 63 (16%) place conditions on whether parents can supplement scholarships, frequently income-based conditions (EdChoice 2023). For 53 programs, parents are permitted to supplement scholarships.

Requiring participating schools to admit all students who apply is less common. Seven programs require a lottery if a school is oversubscribed, including programs in Indiana, Louisiana (2), Cleveland OH, and Wisconsin (3) (EdChoice 2023). Most programs allow participating schools autonomy in their enrollment; yet the requirement that private schools take all comers remains prominent in debates surrounding the desirability and regulation of school choice programs (e.g., American Federation of Teachers, n.d.; Parents' Campaign Research & Education Fund 2017)

Although our sample size is modest and the response rate is low, we find evidence to suggest that some regulations dissuade private school leaders from participating in hypothetical voucher programs in the U.S. – and that certain regulations are more likely to deter private

schools with higher reported tuitions, higher enrollment trends, more specialization, and more climate problems.

Literature Review

Three descriptive surveys have indicated that private school leaders are concerned about participating in voucher programs because of possible regulatory costs. Austin (2015) found that private schools that chose to participate in the Indiana Choice Scholarship Program were most concerned about how regulations would affect their academic and religious identities; non-participating private schools were most concerned about the program's procedural requirements. Egalite et al. (2018) reported that the main concern for private schools participating in the North Carolina Opportunity Scholarship Program was regulations, as 82% of the participating schools listed future regulations as a concern. Government regulations also were the top reason private school leaders listed for declining to participate in the North Carolina program, as 57% of the non-participating schools listed future regulations as a concern. Kisida, Wolf, and Rhinesmith (2015) found that 64% of leaders of non-participating private schools in Louisiana, 62% in Indiana, and 26% in Florida listed "future regulation that might come with participation" as a major reason for non-participation in voucher programs.

Three studies have found that private schools are generally less likely to participate in more heavily regulated voucher programs in the U.S., controlling for observable differences in schools. Using school-level data from the 2009-10 round of the Private School Universe Survey, Stuit and Doan (2013) reported that an increase in regulatory burden score from 10 to 75 was associated with a 9 percentage point decrease in the likelihood of private school participation in voucher programs

after controlling for differences in school size, urbanicity, religiosity, and enrollment trends. Using data from the 2015-16 round of the Private School Universe Survey, DeAngelis (2020) found that random admissions mandates and state testing requirements were negatively associated with private school participation in voucher programs. Sude, DeAngelis, and Wolf (2018) reported that only a third of the private schools in Louisiana participated in the state's heavily regulated voucher program, whereas over twice that proportion of private schools participated in less regulated programs in the District of Columbia and Indiana.

Descriptive studies have also found that higher-quality private schools – as measured by enrollment trends, tuition levels, and test scores – generally have been less likely to participate in voucher programs in the U.S. (DeAngelis & Hoarty, 2018; Sude, DeAngelis, & Wolf, 2018) and other countries (Bettinger et al., 2019; Sánchez, 2018). Additionally, two random assignment evaluations of the Louisiana Scholarship Program found that private schools with higher tuition levels had higher test-score value-added – and that those types of private schools were less likely to participate in the program (Abdulkadiroglu, Pathak, & Walters, 2018; Lee, Mills, & Wolf, 2020). DeAngelis (2020) reported that more specialized private schools are less likely to participate in voucher programs than are regular private schools. Other evaluations suggest that private schools switching into voucher program environments are less likely to identify as specialized (DeAngelis & Burke, 2017; 2019) – and less likely to report focusing on supporting homeschooling services (DeAngelis & Dills, 2019) – suggesting regulations could lead to homogenization in voucher-participating private schools (Burke, 2016).

Two survey experiments have found that certain regulations decrease the likelihood that private school leaders report a willingness to participate in hypothetical voucher programs in Florida, California, and New York (DeAngelis, Burke, & Wolf, 2019; 2020). DeAngelis, Burke, and Wolf (2019) found that state standardized testing requirements and random admissions mandates reduced the likelihood that private school leaders reported that they were certain to participate in a hypothetical voucher program in Florida by 46 and 70 percent, respectively. Both of those regulations were more likely to deter private schools with higher tuition levels and stronger enrollment trends, those likely of higher quality. DeAngelis, Burke, and Wolf (2020) similarly found that state standardized testing requirements and random admissions mandates reduced the likelihood that private school leaders reported that they were certain to participate in hypothetical voucher programs in California and New York by 29 and 60 percent, respectively.

Although two survey experiments exist on the topic of regulations and private school leaders' willingness to participate in hypothetical voucher programs in the U.S., the studies are geographically limited to just a few states. We add to the literature in two main ways. First, this is the first random assignment analysis of the effects of various regulations on the expressed willingness of private school leaders to participate in hypothetical voucher programs that draws on national data. Specifically, our survey experiment received responses from leaders representing private schools in 30 states. Second, this study is the first to examine heterogeneous effects of various regulations on program participation decisions based on measures of school climate.

Data and Research Design

We conducted a survey experiment by randomly assigning a different note on the final question of an otherwise identical survey to five groups of private school leaders across the United States. The final question, capturing whether the respondent would likely participate in a hypothetical private school voucher program in the following year, asked each private school leader "If your state launched a new school choice program next academic year, with a value of $6,000 per student, per year, how likely is it that your school would participate in the program?" The private school leaders were able to provide a response on a five-point Likert scale from "certain not to participate" to "certain to participate." Most state voucher programs provide the state per-pupil revenue; some provide a set figure such as Ohio's $6,000 for high school and $4,650 for elementary (ECS 2021). We chose $6,000 as a mid-range value for a voucher; average state revenue per pupil was somewhat higher, at $7,000 (NCES 2021).

The control group, representing no changes in regulations, was randomly assigned a note on this final question stating that "This program would not require any changes in school operations or additional government regulations." The first treatment group, representing the open-enrollment mandate, was randomly assigned a note on the final question stating that "The only requirement would be that your school would have to accept all students who applied (and you would be required to use a random lottery for admissions in the case of oversubscription)." The second treatment group, representing the state testing mandate, was randomly assigned a note on the final question stating that "The only requirement would be that every student would have to take the state standardized tests each year." The

third treatment group, representing the nationally norm-referenced testing mandate, was randomly assigned a note on the final question stating that "The only requirement would be that every student would have to take nationally norm-referenced standardized tests each year." The fourth and final treatment group, representing the requirement that private schools accept the voucher amount as full payment, was randomly assigned a note on the final question stating that "The only requirement would be that your school would have to accept the voucher amount ($6,000) as full payment for voucher students."[3] The full survey instrument can be found in Appendix B.

We partnered with an independent third party, Hanover Research, to collect a sample of private school leaders from the U.S. Hanover Research randomly assigned each of the private school leaders from the complete list to one of the five experimental groups and sent the surveys to 10,406 private school leaders via email on November 12th, 2019. By February 6, 2020, we have received 156 responses. The Hanover Research team continued to send reminders through the fall of 2020. Hanover Research initially offered a $20 gift card for respondents' time and subsequently increased the incentive to $50 before finally increasing the amount to $100 to increase response rates. The team ultimately received 164 responses which produced an overall

[3] Note that only the wording for treatment group 4 contains the term 'voucher'. Using the 2018 EdNext survey of 4,601 adults, Cheng et al. (2022) compare support for voucher programs when described as a voucher versus when described as "wider choice". They find similar support for means-tested vouchers with the two different language choices. However, for universal vouchers, using the word "voucher" lowers approval by 10 percentage points compared to "wider choice".

response rate of 1.68%. Hanover Research then sent the de-identified set of responses to our research team to conduct the main analyses.[4]

Despite providing monetary incentives and sending several reminder emails, the current study's response rate was substantially lower than the response rates reported in similar private school survey experiments in Florida (11.05%) (DeAngelis, Burke, & Wolf, 2019) and California and New York (8.24%) (DeAngelis, Burke, & Wolf, 2020). However, the response rates for each of the five experimental groups were not statistically different from one another (Table 1), suggesting random assignment likely was effective. The smaller sample reduces the chances of detecting statistically significant effects of regulatory burdens on the likelihood of participating in a program that provides economic security in the form of voucher revenues.

We further evaluate our results' internal validity by testing for equivalence on observable characteristics between our experimental groups. Table 2 reports the means of 28 observable characteristics for each of the five experimental groups. Out of the 112 different comparisons of observable characteristics between treatment groups and the control group, we found 15 differences at the $p < 0.10$ level. Because Type I errors occur about 10% of the time at this threshold, by definition, we would expect about this many significant differences to

[4] As of February 6, 2020, we had received 156 responses. We paused our reminder emails with the onset of COVID-19. In Summer 2020, we implemented nonrespondent conversion subsampling by randomly selecting half of the nonrespondents and only sending that group the additional reminder emails. We received 11 responses from the targeted group and double-weighted them in our analyses. We received 164 total responses with 11 of those observations double-weighted, which brought our analytic sample to a total of 175 private school leaders. Only 135 of the responses included answers to all the questions generating control variables, including 10 that are double-weighted.

be detected by chance with effective random assignment. In other words, we can be relatively confident that results from subsequent analyses provide unbiased estimates of the relationships between expected regulations and private school leaders' reported participation in hypothetical voucher programs, in spite of the relatively low response rate in our study. Further, we estimate specifications including the full set of observable characteristics to allay concerns about covariate imbalance.

The distribution of survey respondents included in our analyses can be found in Figure 1. Private school leaders from 30 states responded to the survey, but over two-fifths of the respondents were from three states: Florida (19.4%), California (14.9%), and Texas (9.7%). 56% of our sample is located in states with private school choice programs.[5],[6]

Descriptive statistics can be found in Table 3. Most responding schools experience physical conflicts among students only on occasion (55%) or never (41%); robbery or theft is similarly uncommon with all schools reporting never (73%) or on occasion (27%). Similarly, student verbal abuse of teachers, student racial tensions, and student bullying occur at most on occasion for almost all participating schools.[7]

[5] In the analysis below we control for whether the school is in a state with a private school choice program. States *without* private school choice programs include Texas (15), California (26), Michigan (12), New York (9), New Jersey (2), Massachusetts (2), Alaska (1), New Mexico (2), Colorado (1), and Oregon (1).

[6] In results available upon request, we separately estimate Table 4 below using only respondents in non-voucher states. In the fully specified model, we continue to observe reduced reported participation under open-enrollment and also observe statistically smaller reported participation under co-pay participation. Thank you to a referee for highlighting current state policy as a particular concern.

[7] Ideally, we would have per pupil incidence rates for these behaviors. Although we have data on enrollment, we do not have data on counts of behavior.

Schools tend to be majority white with 45% reporting the percent of students who are racial or ethnic minorities as 0 to 25%, 30% of schools as 26-50%, 11% as 51-75%, and 14% as 76-100%. Most participating schools report a Great School Review score of 4 (54%) or 5 (40%). The average school has experienced an enrollment decline of -2.27% between 2018-2019 and 2019-2020.[8] Tuition averages a little over $9,000. About half of the participating schools offer a non-specialized curriculum with 11% Montessori, 8% early childhood, 8% special education, and 20% offering an educational program that doesn't fit in these categories. The typical private school leader is female (67%), white (77%), and likely the principal (44%) (although other administrators (24%) and directors (20%) are common).

Although we do not possess data on any specific characteristics for our non-responding schools, it is worthwhile to consider how the respondents compare to the universe of private schools in the United States. We use data from the 2019-2020 Private School Universe Survey for comparison. Table 9 reports that 66% of private school students are white, non-Hispanic; in other words, 34% are racial or ethnic minorities. In this regard, our sample appears similar although direct comparison is challenging given the categorical nature of the data we collected. Table 3 reports that 8.4% of private schools are Montessori, 3% with special program emphasis, 9.9 early childhood, and 6.6 special education. Our respondents are somewhat more likely to be Montessori schools (11%) and special education (8%) and less likely to be early childhood (8%).

[8] Note that the vast majority of the sample responded by early February 2020, prior to shutdowns due to the pandemic.

About 21% of the private school leaders who responded to the survey indicated that they would be "certain to participate" in the hypothetical voucher program (Table 3). For comparison, in a study of Florida private school leaders, 25% reported being certain to participate (DeAngelis, Burke, and Wolf, 2019). The average private school in the sample reported a tuition level of about $9,180 and an enrollment reduction of 2.27% related to the previous school year.

Table 1.

Response Rates by Experimental Group

Distribution	Control	Open-Enrollment	State Testing	National Testing	Copay Prohibition
Contacted	2078	2079	2079	2080	2090
Responded	30	34	33	41	37
Response Rate (%)	1.44	1.64	1.59	1.97	1.77

Notes: Statistical significance was calculated using a chi-squared test for each treatment column. "Contacted" excludes observations with duplicate emails and observations with emails that bounced. "Response Rate" equals "Responded" divided by "Contacted." The control group received no regulation. The regulations for the treated groups are as follows.
Open-enrollment group: "accept all students who applied" or use random lottery if oversubscribed.
State testing group: "every student would have to take the state standardized tests each year."
National testing group: "every student would have to take the nationally norm-referenced standardized tests each year."
Copay prohibition group: "School would have to accept the voucher amount ($6,000) as full payment for voucher students."

Table 2.

Equivalence on Observables

Observable	Control	Open-Enrollment	State Testing	National Testing	Copay Prohibited
Regular School	0.48	0.50	0.55	0.48	0.54
Alternative School	0.22	0.21	0.21	0.23	0.14
Montessori School	0.07	0.09	0.03	0.13	0.19
Early Childhood School	0.11	0.06	0.12	0.10	0.03
Special Education School	0.07	0.12	0.06	0.08	0.08
Tuition ($1,000s)	8.67	10.38	10.21	7.32	9.51
Enrollment Change (%)	2.07	-4.38	0.17	-4.31	-3.79
Climate Problems	-0.02	0.09	-0.20	0.13	-0.03
Fights	1.70	1.59	1.58	1.71	1.69
Bullying	1.70	1.72	1.79	1.71	1.89
Racial Tensions	1.22	1.22	1.36	1.26	1.22
Verbal Abuse	1.44	1.06***	1.33	1.26	1.42
Robbery or Theft	1.15	1.28	1.36*	1.24	1.28
Minority Students	1.88	1.97	2.16	1.86	1.82
School Choice State	0.67	0.56	0.52	0.56	0.51
Florida	0.30	0.21	0.21	0.17	0.11**
California	0.10	0.15	0.24	0.07	0.19
Texas	0.07	0.18	0.03	0.15	0.05
White	0.82	0.74	0.76	0.78	0.78
Black or African American	0.11	0.03	0.09	0.10	0.03
Hispanic or Latino	0.07	0.12	0.09	0.03	0.05
Prefer Not to Share Race	0.00	0.06	0.06	0.08	0.14**
Principal	0.43	0.26	0.45	0.54	0.49
Administrator	0.14	0.26	0.24	0.15	0.38**
Director	0.32	0.32	0.09**	0.22	0.08**
Other Leader	0.11	0.15	0.21	0.07	0.05
Female	0.86	0.65*	0.52***	0.68*	0.68*
Male	0.14	0.35*	0.48***	0.33*	0.32*
N	30	34	33	41	37

Notes: * p<0.10, **p<0.05, *** p<0.01. Statistical significance was calculated using a t-test for each treatment column.

Figure 1

States Represented in the Analysis

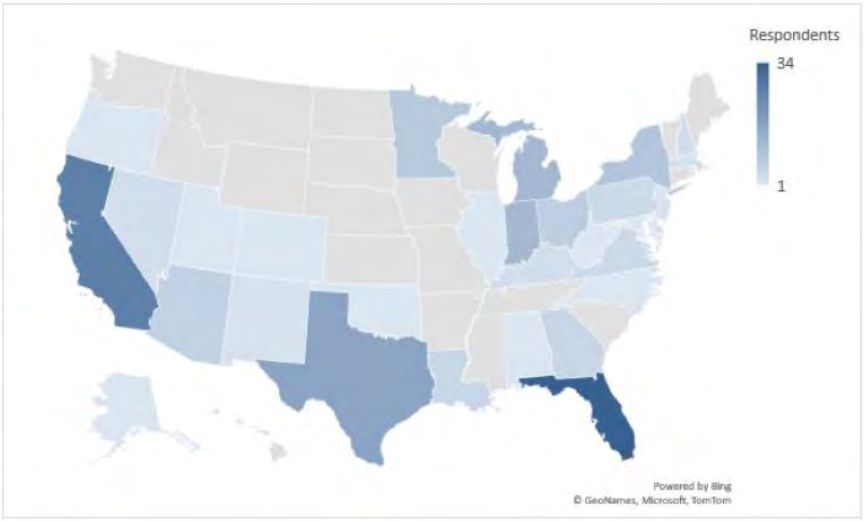

Table 3.

Descriptive Statistics

Variable	Mean	Standard Deviation	Min	Max	N
Certain to Participate	0.21	0.41	0	1	163
Control Group	0.17	0.38	0	1	175
Open Enrollment	0.19	0.40	0	1	175
State Testing	0.19	0.39	0	1	175
National Testing	0.23	0.42	0	1	175
Copay Prohibition	0.21	0.42	0	1	175

Table 3 (continued)

School Characteristics					
Climate Problems Index	0.00	1	-1.19	4.102	166
Physical Conflicts	1.66	0.66	1	5	166
Robbery or Theft	1.27	0.44	1	2	165
Verbal Abuse of Teachers	1.30	0.61	1	4	166
Racial Tensions	1.26	0.45	1	3	166
Bullying	1.77	0.58	1	5	166
Minority Student Population	1.94	1.06	1	4	160
Great School Review Score	4.31	0.66	2	5	48
Enrollment Change (%)	-2.27	20.69	-100	86.67	165
Tuition ($1,000s)	9.18	9.99	0	64.50	160
Regular	0.51	0.50	0	1	171
Alternative	0.20	0.40	0	1	171
Montessori	0.11	0.31	0	1	171
Early Childhood	0.08	0.27	0	1	171
Special Education	0.08	0.27	0	1	171
School Choice State	0.56	0.50	0	1	175
Respondent Characteristics					
Female	0.67	0.47	0	1	172
Male	0.33	0.47	0	1	172
White	0.77	0.42	0	1	172
Black	0.07	0.26	0	1	172
Hispanic	0.07	0.26	0	1	172
Principal	0.44	0.50	0	1	173
Administrator	0.24	0.43	0	1	173
Director	0.20	0.40	0	1	173
Other Leader	0.12	0.32	0	1	173

Method

We employ an ordered probit regression approach of the form:

$$Prob\ (Participation_i) = \beta_0 + \beta_1 Open\_Enroll_i + \beta_2 State\_Test_i + \beta_3 National\_Test_i + \beta_4 No\_Copay_i + \beta_5 X_i + \varepsilon_i$$

where the categorical dependent variable of interest, *Participation*, captures private school leader *i*'s expectation of participation in a hypothetical private school choice program in 2020. The dependent variable is the private school leader's response on the final survey question, a Likert Scale ordered from one to five, with one indicating that the leader is "certain not to participate" and five indicating that the leader is "certain to participate." We use ordered probit regression (and ordered logit regression as a robustness check) because the dependent variable of interest is ordered and categorical. When interpreting marginal effects, we focus on the relative likelihood of private school leaders to choose the fifth outcome category ("certain to participate").

Because effective random assignment eliminates the need for controls, the base model only includes the four treatment indicators as independent variables. The first binary independent variable of interest, *Open_Enroll*, takes on the value of one if the private school, *i*, was randomly assigned a random-admissions mandate, and zero otherwise. The second binary independent variable of interest, *State_Test*, takes on the value of one if the private school was randomly assigned a state standardized testing mandate, and zero otherwise. The third binary independent variable of interest, *National_Test*, takes on the value of one if the private school was randomly assigned a nationally norm-referenced standardized testing mandate, and zero

otherwise. The fourth binary independent variable of interest, *No_Copay*, takes on the value of one if the private school was randomly assigned a mandate stating that the school had to take the voucher funding as full-payment, and zero otherwise. We expect the coefficients on all four of these independent variables to be negative, indicating that these regulations reduce the likelihood of participation in private school choice programs.

Because we observe some differences in observables across randomly assigned treatments, we also include models with vector X of observable control variables as robustness checks. These models control for the gender, race, and leadership positions of all respondents, school type, highest tuition paid, enrollment change from the previous year, the proportion of the student population identified as racial or ethnic minorities, whether the school is located in a state with a private school choice program, and reports of school climate problems (physical conflicts, bullying, racial tensions, robbery or theft, and verbal abuse of teachers). We also include overall results based on ordered logistic regression as a robustness check in Appendix A.

Results

The coefficients from the more parsimonious and the most complete specification are negative for each treatment, suggesting regulations reduce the likelihood of participation in a hypothetical voucher program (Table 4). Statistically significant results are detected for two of the four regulations. Similar to the results from the previous survey experiments on the topic (DeAngelis, Burke, & Wolf, 2019; 2020), the fully specified model indicates that the random admissions mandate reduces the likelihood that private school leaders report being certain

to participate in a hypothetical voucher program by about 14 percentage points, a 67% reduction relative to the sample mean. Unlike the two previous studies, the fully specified model suggests that mandating private schools to accept the voucher amount ($6,000) as full payment reduces the likelihood that private school leaders report being certain to participate in a hypothetical program by 16 percentage points, a 77% reduction relative to the sample mean. This difference in findings across studies could be explained by rising private school tuitions or demographic changes increasing school leaders concern about the school's financial situation.[9]

The overall results are consistent across response categories (Appendix Table A1) and are robust to ordered logistic regression (Appendix Table A2). We also consider combining categories, creating an indicator for 'likely to participate' that combines those saying they are either "certain to participate" or have a "very good chance to participate". In results available upon request, we continue to observe, in the fully specified probit model, that copay prohibition reduces likely participation. We also consider the reverse, generating an indicator for "unlikely to participate" by combining those who say they are "Certain not to participate" or "Very good chance not to

[9] As pointed out by a referee, we may be concerned that larger schools are more likely to have more behavior incidents. Our measure of frequency of bullying, for example, is never, once a month, and the like. We address this concern in two ways. We include the additional control variable of current year enrollment. In these results, the open enrollment coefficient becomes smaller and not statistically significant; the coefficient on copay prohibition remains statistically significantly negative. In addition, instead of including the frequency of behavior incidents, we include indicators for whether each behavior type never occurs. Because zeros are zeros in both levels and rates, these are comparable across school sizes. These results are similar to those report in column 2 of Table 4.

participate". In the fully specified probit model, we continue to observe that the copay prohibition increases the prohibition that school leaders report being unlikely to participate. We also observe that national test increases the likelihood that school leaders are unlikely to participate.

Table 4. *Effects of Regulations on Reported Participation (Ordered Probit)*

	(1) Participation	(2) Participation
Open-Enrollment	-0.144*	-0.139*
	(0.086)	(0.094)
State Testing	-0.073	-0.080
	(0.379)	(0.316)
National Testing	-0.068	-0.115
	(0.378)	(0.167)
Copay Prohibition	-0.116	-0.160*
	(0.151)	(0.059)
Pseudo R-Squared	0.0073	0.0929
Controls?	No	Yes
N	152	135

Notes: P-values in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Average marginal effects are reported for the last outcome category of "certain to participate." The last column includes controls for the gender, race, and position of respondents, school type, tuition, enrollment change, whether they are in a voucher state, percent enrolled who are minority students, and frequency of fights, bullying, verbal abuse of teachers, racial tensions, and robbery.

Heterogeneous Effects

It is possible that certain regulations are more likely to deter certain types of private schools from participating in voucher programs. In

theory, regulations might be more likely to deter more specialized schools if the regulations make it more costly for schools to remain specialized (DeAngelis & Burke, 2017). The survey asks school leaders whether their school is a regular school, Montessori school, special program emphasis school, special education school, Career/Technical/Vocational school, early childhood program or day care center, or alternative/other school.[10] We define specialized schools as those not reported as being "regular".

Once we include control variables, results in column 2 of Table 5 suggest no statistically significant differences in responses from leaders of specialized and non-specialized schools. Point estimates on the regulation variables tend to be more negative and statistically significant for specialized schools. The fully specified model indicates that the random admissions mandate reduces the likelihood that leaders of specialized private schools report being certain to participate in a hypothetical voucher program by 23 percentage points. The fully specified model also indicates that the mandate for private schools to require the voucher as full payment reduces the likelihood that leaders of specialized private schools report being certain to participate in a hypothetical voucher program by 24 percentage points. These two results are statistically significant with and without the control variables.

In theory, regulations might be more likely to deter financially successful private schools, on average, if private schools that are financially struggling are more willing to accept the regulations regardless of the regulatory structure. The financial success of these

[10] The full text of the question appears in Appendix B.

schools likely reflects a higher quality service. Regulations could also theoretically disproportionately deter lower-quality private schools from participating, on average, if struggling schools are concerned about the public transparency and results-based accountability elements of many regulatory regimes.

We have access to two proxies for school quality: tuition and enrollment change from the previous school year. The first metric represents the amount families are willing and able to pay for the services provided by the private school. The second metric represents the change in demand for the services provided by the private school relative to the previous school year. Both metrics are imperfect measures of school quality, but they likely serve as valid proxy variables. Two experimental evaluations have found that private school tuition and enrollment changes are positively correlated with the effect of a private school voucher program on students' math and reading achievement (Abdulkadiroglu, Pathak, & Walters, 2018; Lee, Mills, & Wolf, 2020).

The coefficients of the interaction terms between tuition and each of the four regulations are negative in both specifications, suggesting that leaders from higher-tuition private schools are more likely to be deterred from participating in a hypothetical voucher program (Table 6). The relationships are statistically significant at the $p < 0.05$ level in the fully specified model for the random admissions mandate and the requirement that private schools administer the state standardized test each year. The fully specified model indicates that a $1,000 increase in tuition is associated with a 1.3 and 1.5 percentage point larger reduction in the likelihood that private school leaders report being certain to participate in a hypothetical voucher program for the state

testing requirement and the random admissions mandate, respectively.[11] Leaders of private schools with higher tuitions may be deterred by the requirement that private schools accept the $6,000 voucher amount as payment-in-full, as expected, but the relationship becomes statistically insignificant in the fully specified model.[12]

The coefficients of the interaction terms between enrollment change and each of the four regulations are negative with and without control variables, suggesting that leaders from growing private schools are more likely to be deterred from participating in a hypothetical voucher program (Table 7). However, only one of the four regulations reaches marginal significance. Specifically, for the mandate that private schools administer a nationally norm-referenced standardized test each year, the fully specified model finds that a one percentage point increase in enrollment change from the previous year is associated with a 1.1 percentage point larger reduction in the likelihood that private school leaders report being certain to participate in a hypothetical voucher program. This result appears to be driven by smaller schools who, by the nature of their size, may experience larger percentage changes in their enrollment from year-to-year. When we focus on above median enrollment schools, we again observe that leaders are statistically significantly less likely to report being certain to participate under a copay prohibition.[13]

[11] In results available upon request, we allow the effect of each regulation to differ by whether the school charges a tuition more than $6,000 (the amount of the voucher). The results are qualitatively similar to those in Table 6.

[12] We also explore whether reported participation differs in states with higher per pupil current expenditures in public schools. We find no statistically significant differences for any of the policies by public school per pupil expenditures.

[13] Results available upon request.

We additionally provide exploratory analyses of heterogeneous effects based on school climate and racial/ethnic demographics. We create an index capturing school climate problems using the average of the reported incidents of five climate problems: fighting, bullying, verbal abuse, racial tensions, and robbery. The survey asked private school leaders to report how often each of these five climate problems occurred on a five-point Likert Scale from "never" to "daily" (Never, On occasion, At least once a month, At least once a week, Daily). Schools in the sample report few climate problems on average, implying responses of "never" and "on occasion" for most questions. We then standardize the index to be mean zero and standard deviation of one. The coefficients of the interaction terms between the climate problems index and each of the four regulations are negative in both specifications, suggesting that leaders from private schools with more climate problems are more likely to be deterred from participating in a hypothetical regulated voucher program (Table 8). These results are statistically significant at the $p < 0.05$ level for each of the four regulations in the fully specified model. We do not find any evidence of heterogeneous effects of regulations based on the racial/ethnic composition of students in the school (Table 9).

Table 5. *Effects of Regulations on Reported Participation (Specialized Schools)*

	(1)	(2)
Open-Enrollment (Specialized)	-0.288***	-0.230**
	(0.006)	(0.014)
Open-Enrollment (Regular)	0.002	-0.012
	(0.989)	(0.939)
Difference	-0.290*	-0.218
	(0.085)	(0.228)
State Testing (Specialized)	-0.034	-0.088
	(0.741)	(0.352)
State Testing (Regular)	-0.101	-0.052
	(0.438)	(0.711)
Difference	0.067	-0.037
	(0.685)	(0.831)
National Testing (Specialized)	-0.103	-0.099
	(0.246)	(0.283)
National Testing (Regular)	-0.028	-0.118
	(0.831)	(0.401)
Difference	-0.076	0.019
	(0.632)	(0.909)
Copay Prohibition (Specialized)	-0.192*	-0.241**
	(0.075)	(0.040)
Copay Prohibition (Regular)	-0.043	-0.078
	(0.723)	(0.556)
Difference	-0.148	-0.163
	(0.360)	(0.363)
Pseudo R-Squared	0.0264	0.1013
N	152	135

Notes: P-values in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Average marginal effects are reported for the last outcome category of "certain to participate" after ordered probit regression. Column (2) includes all controls. See Table 1 notes for treatment conditions. "Specialized" refers to schools who report being in a category other than "normal school". The last column includes controls for the gender, race, and position

of respondents, tuition, enrollment change, school type, whether they are in a voucher state, percent enrolled who are minority students, and frequency of fights, bullying, verbal abuse of teachers, racial tensions, and robbery.

Table 6

Effects of Regulations on Reported Participation (by Tuition)

	(1)	(2)
Tuition interacted with		
Open-Enrollment	-0.010	-0.015**
	(0.171)	(0.034)
State Testing	-0.015**	-0.013**
	(0.029)	(0.044)
National Testing	-0.008	-0.007
	(0.278)	(0.356)
Copay Prohibition	-0.013*	-0.008
	(0.061)	(0.207)
Tuition ($1,000's)	0.007	0.005
	(0.235)	(0.328)
Controls?	No	Yes
Pseudo R-Squared	0.0229	0.1017
N	146	135

Notes: P-values in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Average marginal effects are reported for the last outcome category of "certain to participate" after ordered probit regression. See Table 1 notes for treatment conditions. The last column includes controls for the gender, race, and position of respondents, enrollment change, school type, whether they are in a voucher state, percent enrolled who are minority students, and frequency of fights, bullying, verbal abuse of teachers, racial tensions, and robbery.

Table 7

Effects of Regulations on Reported Participation (by Enrollment Change)

	(1)	(2)
Enrollment change interacted with		
Open-Enrollment	-0.004	-0.007
	(0.448)	(0.268)
State Testing	-0.002	-0.007
	(0.731)	(0.258)
National Testing	-0.008*	-0.011*
	(0.087)	(0.087)
Copay Prohibition	-0.007	-0.003
	(0.188)	(0.623)
Enrollment Change	0.006	0.010
	(0.129)	(0.123)
Controls?	No	Yes
Pseudo R-Squared	0.0193	0.1070
N	152	135

Notes: P-values in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Average marginal effects are reported for the last outcome category of "certain to participate" after ordered probit regression. See Table 1 notes for treatment conditions. Enrollment change is the difference between the self-reported current year and last year enrollment. The last column includes controls for the gender, race, and position of respondents, tuition, school type, whether they are in a voucher state, percent enrolled who are minority students, and frequency of fights, bullying, verbal abuse of teachers, racial tensions, and robbery.

Table 8

Effects of Regulations on Reported Participation (by Climate Problems Index)

	(1)	(2)
Climate Problems Index interacted with		
Open-Enrollment	-0.056	-0.221**
	(0.588)	(0.019)
State Testing	-0.143	-0.320***
	(0.165)	(0.001)
National Testing	-0.155*	-0.328***
	(0.082)	(0.000)
Copay Prohibition	-0.215**	-0.447***
	(0.014)	(0.000)
Climate Problems Index	0.136*	0.241*
	(0.093)	(0.052)
Controls?	No	Yes
Pseudo R-Squared	0.0289	0.1580
N	152	135

Notes: P-values in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Average marginal effects are reported for the last outcome category of "certain to participate" after ordered probit regression. See Table 1 notes for treatment conditions. Climate Problems is an index of self-reported frequency of physical conflicts among students, robbery or theft, student verbal abuse of teachers, student racial tensions, and student bullying. The last column includes controls for the gender, race, and position of respondents, tuition, enrollment change, school type, whether they are in a voucher state, percent enrolled who are minority students, and frequency of fights, bullying, verbal abuse of teachers, racial tensions, and robbery.

Table 9

Effects of Regulations on Reported Participation (by Minority Student Population)

	(1)	(2)
Percent Minority Students interacted with		
Open-Enrollment	0.097	0.008
	(0.244)	(0.925)
State Testing	0.001	0.049
	(0.988)	(0.550)
National Testing	0.079	0.019
	(0.278)	(0.785)
Copay Prohibition	0.088	0.090
	(0.308)	(0.214)
Percent Minority Students	-0.069	-0.054
	(0.254)	(0.368)
Controls?	No	Yes
Pseudo R-Squared	0.0130	0.0976
N	145	135

Notes: P-values in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Average marginal effects are reported for the last outcome category of "certain to participate" after ordered probit regression. The last column includes controls for the gender, race, and position of respondents, tuition, enrollment change, school type, whether they are in a voucher state, and frequency

Discussion

The expansion of school choice programs across the U.S. has attracted debate around which regulations, if any, states should attach to private school participation. Our research indicates that additional regulations often reduce private school leaders' willingness to participate in a

hypothetical voucher program; these effects are stronger among schools with growing enrollments and higher tuition, those likely of higher quality. Regulations are likely to reduce private school participation in a way that lowers the average quality of participating schools that are available to participating students.

We survey private school leaders nationwide, asking how certain they would be to participate in a hypothetical voucher program, conditional on a randomly assigned government regulation or no regulations being part of the program. We find that random admissions mandates and copay prohibitions reduce private school leaders' expressed willingness to participate in a private school choice program. Specialized private schools and higher-quality private schools – those with higher tuition or positive enrollment growth – more negatively respond to regulations, as theory predicts. Regulations also have larger effects on private schools reporting greater climate problems.

Our results confirm that the findings in DeAngelis, Burke, and Wolf (2019; 2020) hold for a nationwide sample. In contrast to these studies, we find the novel result that school leaders are also sensitive to copay prohibitions. An exploratory analysis of heterogeneous effects based on school climate measures suggests that leaders from private schools with more climate problems are more likely to be deterred from participating in a hypothetical voucher program than are leaders of schools with more benign climates. This finding might be because these private schools would like to focus on getting their climates in order before dealing with the costs and changes associated with adapting to new regulations.

Future research might expand on this research with a larger sample size and more direct measures of school quality. As states continue to

expand school choice options, exploring the composition of participating private schools will provide additional insight as to the role of regulations in the supply of private school choice. The charter school sector may also learn from this research. Charter schools operate under open-enrollment rules and copay prohibitions. Our results suggest that more charter schools may open if allowed more control over their admissions process. Private school leaders may benefit from planning ahead to how they might accommodate voucher-receiving students under various regulatory regimes.

As more states provide financial support to parents, allowing them to select a private school for their child, more research should examine the factors that affect the quality and diversity of those private schooling options. Our experimental research suggests that policy makers be cautious in the regulations that they incorporate into school choice legislation, as those government requirements will likely reduce the quantity, diversity, and quality of the schools participating in voucher programs. It would be a pyrrhic victory for parents to receive the opportunity to choose private schooling for their child, but then have precious few high-quality and distinctive schooling options available to them.

Acknowledgements

Survey administration for this project was funded by a grant from the Charles Koch Foundation. All errors are our own.

References

Abdulkadiroğlu, A., Pathak, P. A., & Walters, C. R. (2018). Free to choose: can school choice reduce student achievement? *American Economic Journal: Applied Economics*, *10*(1), 175-206.

American Federation of Teachers (n.d.). Private school vouchers don't help kids. https://www.aft.org/private-school-vouchers-dont-help-kids

Austin, M. J. (2015). Schools' responses to voucher policy: Participation decisions and early implementation experiences in the Indiana Choice Scholarship Program. *Journal of School Choice*, *9*(3), 354-379.

Austin, M. (2019). Organizational and social costs of schools' participation in a voucher program. In M. Berends, R. J. Waddington, & J. Schoenig (Eds.), *School choice at the crossroads research perspectives* (pp. 30-51). New York City, NY: Routledge.

Barnum, M. 2017. To Test or Not to Test: As Tax Credit Scholarships Expand, Questions About Accountability and Outcomes. The 74 Million. https://www.the74million.org/article/to-test-or-not-to-test-as-tax-credit-scholarships-expand-questions-about-accountability-and-outcomes/

Bedrick, J. (2016). The folly of overregulating school choice. Education Next. Retrieved from https://www.educationnext.org/the-folly-of-overregulating-school-choice/

Bettinger, E., Kremer, M., Kugler, M., Medina, C., Posso, C., & Saavedra, J. E. (2019). *School Vouchers, Labor Markets and Vocational Education*. Borradores de Economía. Retrieved from http://banrep.gov.co/en/school-vouchers-labor-markets-and-vocational-education

Burke, L. M. (2016). Avoiding the "inexorable push toward homogenization" in school choice: Education savings accounts as hedges against institutional isomorphism. *The Journal of School Choice, 10*(4), 560-578.

Cheng, A., Henderson, M., Peterson, P.E., and M.R. West (2019). Public Support Climbs for Teacher Pay, School Expenditures,

Charter Schools, and Universal Vouchers: Results from the 2018 EdNext Poll. *Education Next*, Winter, 8-26.

DeAngelis, C. A. (2020). Regulatory compliance costs and private school participation in voucher programs. *Journal of School Choice*, 14(1), 95-121.

DeAngelis, C. A., & Burke, L. M. (2017). Does regulation induce homogenisation? An analysis of three voucher programmes in the United States. *Educational Research and Evaluation*, *23*(7-8), 311-327.

DeAngelis, C. A., & Burke, L. M. (2019). *Does regulation reduce specialization? Examining the impact of regulations on private schools of choice in five locations*. EdChoice Working Paper No. 2019-1. Retrieved from https://www.edchoice.org/research/does-regulation-reduce-specialization/

DeAngelis, C. A., Burke, L. M., & Wolf, P. J. (2019). The effects of regulations on private school choice program participation: Experimental evidence from Florida. *Social Science Quarterly*, 100(6), 2316-36. DOI: 10.1111/ssqu.12689

DeAngelis, C. A., Burke, L. M., & Wolf, P. J. (2020). When Being Regulated is a Choice: The Impact of Government Policies on Private School Participation in Voucher Programs. *Journal of School Choice*.

DeAngelis, C. A., & Dills, A. K. (2019). Is School Choice a "Trojan Horse?" The Effects of School Choice Laws on Homeschool Prevalence. *Peabody Journal of Education*, *94*(3), 342-354.

DeAngelis, C. A., & Hoarty, B. (2018). Who participates? An analysis of school participation decisions in two voucher programs in the United States. *Cato Institute Policy Analysis No. 848*.

EdChoice (2023) The ABCs of School Choice: The Comprehensive Guide to Every Private School Choice Program in America.

Available: https://www.edchoice.org/research-library/?report=the-abcs-of-school-choice#report

Education Commission of the States (ECS). (2021) 50-State Comparison: Voucher Amounts. March. Accessed 9/14/2022 from: https://reports.ecs.org/comparisons/vouchers-06

Egalite, A.J., Stallings, D.T., Dinehart, T., Meneses, F., Singh, L., & Whalen, V. (2018). *School leaders' voices: Private school leaders' perspectives on the North Carolina Opportunity Scholarship Program, 2018 Update*. OS Evaluation Report #6. Retrieved from https://ced.ncsu.edu/elphd/wp-content/uploads/sites/2/2018/10/School-Leaders-Voices.pdf

Harris, D. (2015). The reform debate, part II: The difference between charter and voucher schools. Education Week. Retrieved from https://blogs.edweek.org/edweek/urban_education_lessons_from_new_orleans/2015/11/the_reform_family_debate_part_ii_regulation_affects_charter_schools_and_voucher_schools_differently.html

Hess, F. M. (2010). Does school choice "work". *National Affairs*, *5*(1), 35–53.

Lee, M. H., Mills, J. N., & Wolf, P. J. (2020). Heterogeneous Achievement Impacts across Schools in the Louisiana Scholarship Program. *Journal of School Choice*, *14*(2), 228-253.

McShane, M. Q. (2018). *Rethinking regulation: Overseeing performance in a diversifying educational ecosystem*. EdChoice.

National Center of Education Statistics (NCES) (2021) *Digest of Education Statistics* Table 235.10. https://nces.ed.gov/programs/digest/d21/tables/dt21_235.10.asp?current=yes

Parents' Campaign Research & Education Fund (2017, November 30). Vouchers do not guarantee admission to private schools.

https://tpcref.org/vouchers-do-not-guarantee-admission-to-private-schools/

Prothero, Arianna. (2017). 'There is no oversight': Private school vouchers can leave parents on their own. *Education Week,* November 14. https://www.edweek.org/policy-politics/there-is-no-oversight-private-school-vouchers-can-leave-parents-on-their-own/2017/11

Sánchez, C. (2018). *Understanding school competition under voucher regimes*. Retrieved from http://econweb.umd.edu/~sanchez/files/csanchez_jmp.pdf

Smart, J. C. (1988). College Influences on Graduates' Income Levels. Research in Higher Education, 29(1), 41–59. http://www.jstor.org/stable/40195878

Stuit, D., & Doan, S. (2013). *School choice regulations: Red tape or red herring?* Washington, D.C.: Thomas B. Fordham Institute.

Sude, Y., DeAngelis, C. A., & Wolf, P. J. (2018). Supplying choice: An analysis of school participation decisions in voucher programs in Washington, DC, Indiana, and Louisiana. *Journal of School Choice*, *12*(1), 8-33.

Zhang, L. (2005). Do Measures of College Quality Matter? The Effect of College Quality on Graduates' Earnings. *The Review of Higher Education*, 28(4), 571-596.

About the authors:

Corey DeAngelis is the national director of research at the American Federation for Children, the executive director at Educational Freedom Institute, an adjunct scholar at the Cato Institute, and a senior fellow at Reason Foundation.

E-mail: cdeangelis@federationforchildren.org

Authorship credit details: Conceptualization, formal analysis, writing- original draft.

Lindsey Burke is the director of the Center for Education Policy at The Heritage Foundation, a fellow at EdChoice, on the national advisory board of Learn4Life, on the boards of the Educational Freedom Institute and the Independent Women's Forum's Education Freedom Center, and a Trustee of Choice Media.

E-mail: lindsey.burke@heritage.org

Authorship credit details: Resources, writing- review & editing.

Patrick J. Wolf is a Distinguished Professor of Education Policy and 21st Century Endowed Chair in School Choice in the Department of Education Reform at the University of Arkansas College of Education and Health Professions.

E-mail: pwolf@uark.edu

Authorship credit details: Writing- review & editing.

Angela K. Dills is the Gimelstob-Landry Distinguished Professor of Regional Economic Development at Western Carolina University.

E-mail: akdills@email.wcu.edu

Authorship credit details: Funding acquisition, writing- review & editing.

Appendix A

Table A1

Effects of Regulations on Reported Participation by Response Category

	Certain Not to Participate	Very Little Chance	Some Chance	Very Good Chance	Certain to Participate
Open-Enrollment	0.124*	0.051	0.023	-0.058*	-0.139*
	(0.092)	(0.111)	(0.164)	(0.100)	(0.094)
State Testing	0.071	0.029	0.013	-0.033	-0.080
	(0.321)	(0.328)	(0.348)	(0.334)	(0.316)
National Testing	0.102	0.042	0.019	-0.048	-0.115
	(0.169)	(0.187)	(0.220)	(0.183)	(0.167)
Copay Prohibition	0.143*	0.058*	0.026	-0.067*	-0.160*
	(0.060)	(0.098)	(0.127)	(0.089)	(0.059)
Pseudo R-Squared	0.0929	0.0929	0.0929	0.0929	0.0929

Notes: P-values in parentheses. * p<0.10, ** p<0.05, *** p<0.01. There are 135 observations. Average marginal effects are reported for each outcome category. All models employ ordered probit regression with all controls included. Those controls are: controls for the gender, race, and position of respondents, tuition, enrollment change, school type, whether they are in a voucher state, percent enrolled who are minority students, and frequency of fights, bullying, verbal abuse of teachers, racial tensions, and robbery.

Table 2A

Effects of Regulations on Reported Participation (Ordered Logit)

	(1) Participation	(2) Participation
Open-Enrollment	-0.136	-0.136*
	(0.101)	(0.092)
State Testing	-0.065	-0.086
	(0.412)	(0.256)
National Testing	-0.067	-0.115
	(0.371)	(0.154)
Copay Prohibition	-0.120	-0.164*
	(0.125)	(0.071)
Controls?	No	Yes
Pseudo R-Squared	0.0074	0.1020
N	152	135

Notes: P-values in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Average marginal effects are reported for the last outcome category of "certain to participate." In column (2) we include controls for the gender, race, and position of respondents, tuition, enrollment change, school type, whether they are in a voucher state, percent enrolled who are minority students, and frequency of fights, bullying, verbal abuse of teachers, racial tensions, and robbery.

Appendix B

Survey Instrument

Control Group

Q1: What is your position at the school?

Principal

Director

Administrator

Other Leader

Q2: Please describe your race/ethnicity

White or Caucasian

Black or African American

Hispanic or Latino

Asian or Asian American

American Indian or Alaska Native

Native Hawaiian or other Pacific Islander

Another race/ethnicity

Q3: What is your gender?

Male

Female

Other

Q4: Which of the following best describes this school or program?

Regular school

Montessori school

Special program emphasis school (such as science or math school, performing arts schools, talented or gifted school, etc.)

Special education school (primarily serves students with disabilities)

Career/Technical/Vocational school (primarily serves students being trained for occupations)

Early childhood program or day care center (such as kindergarten only, prekindergarten and kindergarten only, day care and transitional kindergarten only, etc.)

Alternative / other school (offers a curriculum designed to provide alternative or nontraditional education; does not specifically fall into the other categories listed)

Q5: What is your school's total enrollment?

Q6: What was your school's total enrollment last year?

Q7: What percentage of your students are racial/ethnic minorities?

0-25%

26-50%

51-75%

76-100%

Prefer not to respond

Q8: What is your school's average rating on *GreatSchools* (rounded to the nearest whole number)?

0

1

2

3

4

5

Not Available

Q9: What is the highest level of tuition charged at your school (In U.S. dollars)?

Q10: To the best of your knowledge, how often do the following types of problems occur at

this school? (*Daily, At least once a week, At least once a month, On occasion, Never*) Physical conflicts among students

Robbery or theft

Student verbal abuse of teachers

Student racial tensions

Student bullying

Q11: If your state launched a new school choice program next academic year, with a value of $6,000 per student, per year, how likely is it that your school would participate in the program?

Note: This program would not require any changes in school operations or additional government regulations

Certain not to participate

Very little chance

Some chance

Very good chance

Certain to participate

Treatment Group One

Exactly the same as Control Group, but the note on Q11 says "The only requirement would be that your school would have to accept all students who applied (and you would be required to use random lottery for admissions in the case of oversubscription)."

Treatment Group Two

Exactly the same as Control Group, but the note on Q11 says "The only requirement would be that every student would have to take the state standardized tests each year."

Treatment Group Three

Exactly the same as Control Group, but the note on Q11 says "The only requirement would be that every student would have to take nationally norm-referenced standardized tests each year."

Treatment Group Four

Exactly the same as Control Group, but the note on Q11 says "The only requirement would be that your school would have to accept the voucher amount ($6,000) as full payment for voucher students."

Control group: https://hanoverresearch.ca1.qualtrics.com/jfe/preview/SV_1Mrko5zk9

prPKg5?Q_SurveyVersionID=current&Q_CHL=preview&Experiment Group=Control

Treatment 1 (State Standardized Tests):

https://hanoverresearch.ca1.qualtrics.com/jfe/preview/SV_1Mrko5zk9 prPKg5?Q_SurveyVersionID=current&Q_CHL=preview&Experiment Group=Treatment1

Treatment 2 (Open Enrollment):

https://hanoverresearch.ca1.qualtrics.com/jfe/preview/SV_1Mrko5zk9 prPKg5?Q_SurveyVersionID=current&Q_CHL=preview&Experiment Group=Treatment2

Treatment 3 (Copay Prohibition):

https://hanoverresearch.ca1.qualtrics.com/jfe/preview/SV_1Mrko5zk9 prPKg5?Q_SurveyVersionID=current&Q_CHL=preview&Experiment Group=Treatment3

Treatment 4 (National Tests):

https://hanoverresearch.ca1.qualtrics.com/jfe/preview/SV_1Mrko5zk9 prPKg5?Q_SurveyVersionID=current&Q_CHL=preview&Experiment Group=Treatment4