

**Deal or No Deal? The Effects of Deregulation on Public School Leaders' Support for
Private School Choice in California**

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Abstract

Public school leaders might be more likely to support private school voucher programs if they are enacted alongside public school deregulations. We use a survey experiment to examine the effects of public school deregulations on actual public school leaders' support for a hypothetical private school voucher program in California. We do not find evidence to suggest that public school deregulations affect public school leaders' support for private school vouchers overall. However, we unexpectedly find that deregulations related to teacher certification and administration of standardized tests further decrease support for private school choice for leaders of large public schools. This unexpected result may be explained by expected adjustment costs or regulatory capture.

Keywords: private school; school choice; school vouchers; schooling supply; regulations

JEL Classifications: I28, I20

Introduction

Employees in traditional public schools tend not to support private school voucher programs in the United States (Cheng et al., 2019; Yettick et al., 2017). This opposition could be explained by economic theory, risk-aversion, equity concerns, and/or moral objections. Whatever the reason, public school employees' opposition to private school vouchers must be driven by expected marginal costs of the programs that exceed expected marginal benefits. These perceived marginal costs may include a loss of funding for public education, less job security, more uncertainty, unfair competition, and malicious intentions.

All else equal, increasing benefits for public school employees in conjunction with a new private school voucher program should increase the likelihood that public school employees support the program. Public school leaders should expect to support deregulations of public schooling operations that are perceived to increase their autonomy and general work climate. Such deregulations could include reducing state standardized testing requirements, eliminating teacher certification requirements, and eliminating requirements to provide transportation services for all students. We provide the first empirical evaluation to examine whether or not deregulations of public schools alongside a new private school voucher program increases public school leaders' support for the program.

We randomly assigned one of four deregulations – or a control condition – to leaders of traditional public schools in California in early 2019 and then asked them whether or not they would support a hypothetical voucher program in their state. We did not find any evidence to suggest that public school deregulations affect public school leaders' support for private school vouchers overall. However, we unexpectedly found that deregulations related to teacher certification and administration of standardized tests further decrease support for private school

choice for leaders of large public schools. This unexpected result could be explained by the capture theory of regulation (McShane, 2018; Stigler, 1971).

In the next section, we theorize why deregulations of public schools should increase public school employees' support for private school vouchers, all else equal. We then go over the limited literature on this topic and explain the data and methods employed in our evaluation. We then describe our results and conclude with a discussion of their implications and the need for more research on the topic.

Theory

Employees in the public school sector typically express higher levels of opposition to private school voucher programs than the general public. The 2018 *EducationNext* Poll finds that 60 percent of a nationally representative sample of teachers in the United States, and 39 percent of the general public, opposes universal private school voucher programs (Cheng et al., 2019). Yettick et al. (2017) conduct a national survey and find that 79 percent of teachers oppose “government funding to help pay for students’ tuition at private schools.” Teachers’ opposition to private school choice programs has four potential explanations: economics, risk-aversion, equity concerns, and moral objections.

Economic Concerns

In general, students are residentially assigned to public schools in the traditional K-12 education system in the United States. Even if families are not happy with the services provided by their traditional public schools, residential assignment makes it costly for most families to choose alternative options. If families want to opt out of their residentially assigned educational option they have to either (1) move residences to access a different public school or (2) pay out of pocket for a private school. Economists argue that residential assignment and funding through

property taxes create monopoly power for leaders and employees of traditional public schools (Chubb & Moe, 1988; Chubb & Moe, 1990; Friedman, 1955). Others argue local funding of schooling is perceived to disadvantage students from lower-income families who reside in areas with lower property tax bases (Hanushek & Lindseth, 2009), while still others argue that the “efficiency-equity tradeoff” of local funding is not as problematic as many believe (Hoxby, 1996, p. 70). Regardless, competitive pressures from private school vouchers reduce monopoly power, meaning some power is transferred from public school officials to individual families (DeAngelis & Holmes-Erickson, 2018). School vouchers also reduce the cost for families to exit their residentially assigned public schools, meaning that traditional public schools are more likely to lose funding tied to student enrollment counts in a choice system (Hoxby, 2001; Friedman, 1997). The transfer of power and potential loss of funding (through student attrition) could increase workload (necessitated by increased responsiveness to parents) and the likelihood that public school employees lose their jobs.

Risk Aversion

Five studies find that competition from school choice increases public school teacher salaries because of reductions in monopsony power held by employers (DeAngelis & Shuls, 2018; Hensvik, 2012; Hoxby, 2001; Jackson, 2012; Vedder & Hall, 2000). However, generally small increases in salaries for public school teachers might be outweighed by the risk of losing an otherwise secure job. Public sector workers tend to be more risk-averse than private sector workers (e.g. Masclet et al. 2009), and public school educators tend to be more risk-averse than employees in other fields (e.g. Bowen et al., 2015). The uncertainty created by a systemic change like private school vouchers could lead to opposition by risk-averse employees.

Equity Concerns and Moral Considerations

Public school employees may oppose school vouchers, even if they generally welcome competition, if they perceive that the programs create unequal playing fields. Private schools tend to have more autonomy from the state than traditional public schools. Shakeel and DeAngelis (2017) use nationally representative data from the School and Staffing Survey and find that private school leaders are 5 to 20 percentage points more likely than public school leaders to report that they have a major influence in six different school activities such as establishing a curriculum, hiring teachers, setting performance standards, and setting discipline policies. Private schools participating in voucher programs must abide by additional government regulations (EdChoice, 2019); however, most school voucher programs do not require private schools to follow all of the same top-down regulations as nearby traditional public schools. Public school employees may oppose private school choice if they think the competition in the new system is unfair. Public school employees may also oppose vouchers if they believe that the programs will lead to inequalities (Cardak, 2005) and segregation (Bunar, 2010; Levin, 1999; Swanson, 2017), or if they believe that supporters of the programs have malicious intentions (Ravitch, 2013).

Public school employees weigh expected costs and benefits of education reforms when deciding whether or not to support the programs. In general, private school voucher programs increase costs of support by increasing uncertainty and potentially decreasing total funding, therefore decreasing the likelihood of support. While some studies have found that school choice programs can increase public school teachers' salaries (DeAngelis & Shuls, 2018; Hensvik, 2012; Hoxby, 2001; Jackson, 2012; Vedder & Hall, 2000), the salary benefits are small relative to the risk of losing otherwise secure jobs.

Public school employees may be less likely to oppose private school vouchers if the programs are introduced alongside deregulations in public schools. As McShane (2018, p. 2) argues, public and private school supporters might be able to “come together to improve the jobs of teachers regardless of their schooling sector” by reducing onerous regulations. Deregulations would lead to more autonomy for public school employees and fairer competition between traditional public schools and private schools in a choice system. Autonomy should allow public schools to more effectively compete with private schools in choice settings (e.g. Hanushek, Link, & Woessmann, 2013; Ouchi, 2006; Steinberg, 2014). Private school leaders tend to have more autonomy than public school leaders in the current system (Chubb & Moe, 1988; Shakeel & DeAngelis, 2017). In December 2018,¹ one month before we sent out our survey experiment, the superintendent of Los Angeles Unified said “so [if] it’s the flexibility of charter schools that’s allowing them to excel, let’s bring that flexibility into the traditional school classroom.” The traditional public school leaders may be more willing to support bottom-up accountability in exchange for less top-down oversight in the form of state regulations. However, it is possible that additional autonomy will be perceived as a cost to public school leaders since deregulations could lead to adjustments and additional responsibilities.

The above theories lead us to four main research hypotheses:

H1: No longer requiring public schools to administer state standardized tests will increase public school leaders’ support of a hypothetical private school voucher program in California.

H2: No longer requiring public schools to report standardized test results to the state will increase public school leaders’ support of a hypothetical private school voucher program in California.

¹ L.A. teachers union rallies supporters with call for cap on charter schools. Los Angeles Times. Retrieved from <https://www.latimes.com/local/education/la-me-edu-teachers-union-charter-cap-20181221-story.html>

H3: No longer requiring public schools to hire teachers certified by the state will increase public school leaders' support of a hypothetical private school voucher program in California.

H4: No longer requiring public schools to provide transportation services to students will increase public school leaders' support of a hypothetical private school voucher program in California.

Literature Review

Employees in the public sector tend to be more risk-averse than employees in the private sector (Bellante & Link, 1981; Dohmen et al., 2005; Hartog et al. 2002; Masclot et al. 2009). Teachers also tend to be more risk-averse than non-teachers (Davis, 1994). Bowen et al. (2015) find that teachers in the U.S. tend to be more risk-averse than non-teachers. Similarly, Dohmen and Falk (2010) find people in Germany who select into the education profession tend to demonstrate a lower willingness to take risks than people opting into other sectors of the economy. Nadler and Wiswall (2011) report that teachers are less likely to support merit pay – programs that introduce some risk into the profession – than the general public. Risk-aversion might partially explain the fact that the majority of teachers oppose private school vouchers in the United States (Cheng et al., 2019; Yettick et al., 2017).

Additional competitive pressures from school voucher programs increase uncertainty and risk for employees in the public school system. However, regulations such as standardized testing, teacher certification requirements, and transportation services restrict the autonomy of public school employees. Education scholars argue that top-down standardized testing regulations might have unintended consequences for public and private schools such as increased inequality, narrowing of curriculum, and less non-cognitive skill development (DeAngelis, 2018; Hitt, McShane, & Wolf, 2018; Ravitch, 2004; Ravitch, 2016). McShane (2018, p. 2) suggests

that public and private school supporters should agree that certain deregulations would be good for teachers in both sectors.

Although there is an extensive literature on the “strange bedfellows” phenomenon in the political process (e.g. Ishiyama, 1998; King & Smith, 2008; Lusoli & Ward, 2005; Magnan, 2007), no studies have empirically examined whether or not deregulations in public schools would increase public school employees’ support for private school voucher programs. In theory, public school employees should be more likely to support private school vouchers if the programs are enacted alongside deregulations that increase autonomy. This is the first study to evaluate this hypothesis. We use a survey to randomly assign four different deregulations – and a control condition – to 7,633 traditional public school leaders in California in 2018 and ask them if they would support a hypothetical private school voucher program in the state.

Data and Research Design

In the fall of 2018, we obtained a complete list of 7,633 traditional public schools in California from the California Department of Education.² The list provided the contact information of each school leader and the city, county, zip code, and level of each school.

We randomly assigned each public school to one of five groups using the full list. Although each group received a slightly different survey, the only difference across the five surveys was the note on the final question (Q9). The first eight questions were identical across surveys and gathered background characteristics about the respondent (i.e. position, race, and gender) and their schools (i.e. school urbanicity, total enrollment, and the percent of students identified as: qualifying for the federal lunch program, English-Language Learners, and racial minorities) that were all used as control variables.

² *Public schools and districts data files*. California Department of Education. Retrieved from <https://www.cde.ca.gov/ds/si/ds/pubschls.asp>

The final question on the control group’s survey – capturing support for a new private school choice program in the state – asked: “Would you support a new private school voucher program in California (available to all students in the state) next year? Note: If this program is passed, it would not change any state requirements of your school.” The surveys for all five groups were identical except for the note – capturing specific public school deregulations for the four treatment groups – on the last question. The first treatment group, capturing the deregulation no longer requiring schools to report standardized test results to the state, was randomly assigned the following note: “If this program is passed, your school would no longer be required to report standardized test results to the state.” The second treatment group, capturing the deregulation no longer requiring schools to administer state tests, was randomly assigned the following note: “If this program is passed, your school would no longer be required to administer state standardized tests.” The third treatment group, capturing the deregulation no longer requiring schools to hire certified teachers, was randomly assigned the following note: “If this program is passed, your school would no longer be required to hire teachers certified by the state.” The final treatment group, capturing the deregulation no longer requiring schools to provide transportation services to students, was randomly assigned the following note: “If this program is passed, your school would no longer be required to provide students with transportation services.” The full survey instrument can be found in the appendix.

Out of the complete list of 7,633 schools, we randomly assigned 1,563 to the control group, 1,527 to the test reporting group, 1,497 to the test administration group, 1,533 to the certified teachers group, and 1,513 to the providing transportation group (Table 1). We sent initial surveys to all California public school leaders on January 7th, 2019. We sent reminder emails on January 11th, January 17th, January 23rd, January 29th, February 4th, February 8th, and

February 14th. Because there were 117 duplicate emails and 389 bounced emails, our survey went out to 7,127 public school leaders in the state (93.37 percent). By February 21st, 755 public school leaders responded to the survey leading to an overall response rate of 10.59 percent. This response rate falls between the response rates found in similar survey experiments of private school leaders in California and New York (DeAngelis, Burke, & Wolf, 2019) and Florida (DeAngelis, Burke, & Wolf, 2018). Another survey published by The Hope Center at Temple University in 2019 had a response rate of 5.8 percent.³ Our response rate is also within the expected range of 10 to 15 percent for external online surveys published by SurveyGizmo⁴ and the expected range of 1 to 20 percent published by Practical Surveys.⁵

Internal and External Validity

A relatively low response rate does not lead to biased estimates if respondents do not select into completing the survey based on unobservable characteristics that differ across experimental groups. Indeed, Table 1 does not provide any evidence to suggest that response rates, survey start rates, or survey completion rates differ across experimental groups. In other words, there is not any evidence to suggest that survey respondents started or completed surveys at different rates across groups, suggesting that we can be reasonably confident that estimates from our analytic models are unbiased.

³ *College and University Basic Needs Insecurity: A National #RealCollege Survey Report*. The Hope Center. Retrieved from https://hope4college.com/wp-content/uploads/2019/04/HOPE_realcollege_National_report_digital.pdf

⁴ *What's a good survey response rate?* Retrieved from <https://www.surveygizmo.com/resources/blog/survey-response-rates/>

⁵ *Typical response rates*. Retrieved from <https://www.practicalsurveys.com/respondents/typicalresponserates.php>

Table 1: Response Rates by Experimental Group

Distribution	Control	Report Test	Administer Test	Hire Certified Teachers	Provide Transportation
Assigned	1563	1527	1497	1533	1513
Emailed	1486	1401	1395	1429	1416
Surveys Started	201	181	181	204	175
Responded	157	143	151	160	144
Start Rate	13.53%	12.92%	12.97%	14.28%	12.36%
Response Rate	10.57%	10.21%	10.82%	11.20%	10.17%
Completion Rate	78.11%	79.01%	83.43%	78.43%	82.29%

Notes: + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Statistical significance was calculated using a chi-squared test for each treatment column. “Emailed” excludes observations with duplicate emails and observations with emails that bounced. “Start Rate” equals “Surveys Started” divided by “Emailed.” “Response Rate” equals “Responded” divided by “Emailed.” “Completion Rate” equals “Responded” divided by “Surveys Started.”

An equivalent response rate across groups does not guarantee that survey experiments are unbiased. We examine whether treatment groups are identical to the control group on all available observable characteristics using t-tests (Table 2). We find statistically significant differences for each treatment group. Three statistically significant ($p < 0.05$) differences are detected for the test reporting group, none are detected for the test administration group, two are detected for the certified teachers group, and three are detected for the providing transportation group. By definition, because Type I errors occur five percent of the time at the $p < 0.05$ threshold, we can expect about six to occur with 31 observable characteristics across four treatment groups. We only observe eight statistically significant differences across all groups, so we can be fairly confident that random assignment worked as theorized.

Table 2: Equivalence on Observables

Observable	Control	Report Test	Administer Test	Hire Certified Teachers	Provide Transportation
<i>Respondent</i>					
Principal	92.36	93.01	90.07	91.88	88.19
Administrator	6.37	4.20	5.96	7.50	7.64
Other Leader	0.64	2.80	3.31+	0.00	3.47+
White	60.51	69.23	66.89	62.50	72.92*
Black	7.64	6.29	10.60	5.63	5.56
Asian	7.01	1.40*	4.64	3.75	2.08*
Hispanic	20.38	18.18	14.57	24.38	16.67
Other Race	4.46	2.80	1.32	2.50	1.39
Male	45.22	37.06	43.05	45.63	41.67
Female	54.77	62.94	56.95	54.38	57.64
Latitude	36.28	36.15	36.21	35.86	36.05
Longitude	-119.59	-119.62	-119.67	-119.41	-119.33
<i>School</i>					
Urban	32.48	25.87	23.84+	23.75+	31.94
Suburban	39.49	44.76	43.71	54.38**	39.58
Rural	28.03	29.37	31.79	21.88	28.47
Elementary School	59.87	69.23+	65.56	56.25	54.17
Middle School	14.01	13.99	7.95+	16.88	17.36
High School	20.38	11.89*	19.87	19.38	21.53
Enrollment < 400	28.66	21.68	32.45	18.75*	24.31
400 < Enroll < 800	42.04	55.94*	44.37	45.63	50.69
800 < Enroll < 1200	14.01	13.29	8.61	18.75	14.58
1200 < Enroll < 1600	5.73	2.80	2.65	5.63	1.39*
Enrollment > 1600	9.55	6.29	11.92	11.25	9.03
Los Angeles County	17.83	19.58	17.22	15.00	15.28
Riverside County	5.73	5.59	6.62	9.38	4.86
San Diego County	8.28	8.39	4.64	6.88	10.42
San Bernardino County	3.18	8.39+	3.97	4.38	5.56
Zip Code	93483	93417	93646	93536	93452
<i>Students</i>					
FRL Percent	64.10	65.49	59.44	60.31	65.49
ELL Percent	33.17	32.04	30.46	30.63	32.64
Minority Percent	58.87	62.59	60.17	60.47	61.46
N	157	143	151	160	144

Notes: + p<0.10, *p<0.05, ** p<0.01, *** p<0.001. Statistical significance was calculated using a t-test for each treatment column.

Evidence of strong internal validity does not imply external validity. Based on the limited amount of information we have on the county, city, and level of all traditional public schools in the state, we find some evidence to suggest that our sample of respondents is not representative of the entire population (Table 3). Our sample appears to underrepresent schools in large counties and cities, as well as schools at the elementary level.

Specifically, respondents in our sample are about 4.6 percentage points less likely to be a leader from a school located in Los Angeles County, 3 percentage points less likely to lead a school located in Orange County, and 2.1 percentage points less likely to lead a school located in Sacramento County than the overall population. Respondents are about 3.2 percentage points less likely to lead a school located in the city of Los Angeles, 6.4 percentage points less likely to lead an elementary school, and 5.1 percentage points more likely to lead a high school than the overall population. Because of these statistically different percentages, readers should be careful not to generalize our results to all public schools within the state of California.

Table 3: Respondents Compared to All Public Schools

Observable	Respondents (#)	Respondents (%)	Population (#)	Population (%)
<i>County</i>				
Los Angeles	128	16.95	1,648	21.59**
San Diego	58	7.68	566	7.42
Orange	31	4.11	539	7.06**
San Bernardino	38	5.03	455	5.96
Riverside	49	6.49	411	5.38
Sacramento	13	1.72	292	3.83**
Alameda	31	4.11	286	3.75
<i>City</i>				
Los Angeles	11	1.46	353	4.62***
San Diego	13	1.72	213	2.79+
San Jose	15	1.99	166	2.17
Sacramento	7	0.93	147	1.93+
San Francisco	11	1.46	95	1.24
Oakland	11	1.46	78	1.02
<i>School Level</i>				
Elementary School	460	60.93	5,138	67.31***
Intermediate/Middle Schools	106	14.04	1,155	15.13
High School	141	18.68***	1,040	13.63
N	755		7,633	

Notes: + p<0.10, *p<0.05, ** p<0.01, *** p<0.001. Statistical significance was calculated using a chi-squared test.

Methods

We employ an ordered probit regression approach of the form:

$$\begin{aligned}
 Prob(Support_{i2019}) = & \beta_0 + \beta_1 Report_Test_{i2019} + \beta_2 Administer_Test_{i2019} + \beta_3 Certified_Teachers_{i2019} \\
 & + \beta_4 Provide_Transportation_{i2019} + \beta_5 X_{i2019} + \epsilon_{it}
 \end{aligned}$$

Where the categorical dependent variable of interest *Support* captures school leader *i*'s expectation of supporting a hypothetical private school voucher program in 2019. The dependent variable is the public school leader's response on survey question 9, a Likert Scale ordered from one to five, with one indicating that the leader is "certain not to support" the new program and five indicating that the leader is "certain to support" the new program. 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 public school leaders in California to choose the first outcome category (“certain not to support”).

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, *Report_Test*, takes on the value of one if the public school leader, i , was randomly assigned a deregulation that would no longer require the school to report standardized testing results to the state in the note of question 9, and zero otherwise. The second binary independent variable of interest, *Administer_Test*, takes on the value of one if the public school leader was randomly assigned a deregulation that would no longer require the school to administer state standardized tests, and zero otherwise. The third binary independent variable of interest, *Certified_Teachers*, takes on the value of one if the public school was randomly assigned a deregulation that would no longer require the school to hire teachers that were certified by the state, and zero otherwise. The fourth binary independent variable of interest, *Provid_Transportation*, takes on the value of one if the public school was randomly assigned a deregulation that would no longer require the school to provide transportation services for students, and zero otherwise. We expect the coefficients on all four of these independent variables to be negative, indicating that these deregulations reduce the likelihood that public school leaders are certain not to support private school voucher programs. In other words, we expect that public school deregulations – alongside the hypothetical voucher program – would increase public school leaders’ likelihood of supporting private school vouchers.

Random assignment alone does not absolutely guarantee that all endogeneity will be removed from the models. Because of this possibility, we also include models with vector X of observable control variables as robustness checks. These models control for the gender, race, and

position of all respondents, school urbanicity, school level, total enrollment, the percent of students eligible for the federal lunch program (FRL), the percent of students identified as English Language Learners (ELL), and the percent of students identified as racial minorities.

We use multivariate normal regression as a multiple imputation technique for 1 missing value (0.13 percent of the sample) for school urbanicity, 2 missing values (0.26 percent of the sample) for the percent of students identified as ELL, 4 missing values (0.53 percent of the sample) for the percent of students identified as FRL, and 5 missing values (0.66 percent of the sample) for the percent of students identified as racial minorities. While there is not an exact cutoff for when the percentage of missing data becomes unacceptable, Schafer (1999) claims that missing rates below 5 percent are inconsequential, while Bennett (2001) contends that estimates are biased with missing rates exceeding 10 percent. Our multiple-imputation approach uses all other independent variables – position, race, and gender of the respondent, latitude and longitude of the response, and county, level, and enrollment of the school – to impute missing data (Rubin, 1987). We drop 10 observations (1.32 percent of the overall sample) that are missing the dependent variable of interest. Robust standard errors are clustered at the school level.

Results

Descriptive statistics for the overall sample (Table 4) and the control group (Table 5) illustrate that leaders of traditional public schools in California strongly oppose the enactment of a private school voucher program in the state. The average support number is 1.62 on a five-point scale, meaning the average public school leader in the state is somewhere between being “certain not to support” the hypothetical program and having a “very little chance” of supporting the program. A majority of the respondents (59 percent) in both the control group and the overall sample indicated that they are “certain not to support” the hypothetical program. Over 80 percent of the

sample of respondents indicated that they would either be “certain not to support” the program or that there is a “very little chance” they would support the program. In both groups, only about 2 percent of the respondents indicate that they are “certain to support” a private school voucher program. Zero respondents in the control group indicated that there is a “very good chance” they would support such a program. These negative responses mostly coincide with the 2018 Education Next Poll finding that 60 percent of a nationally representative sample of teachers in the United States opposes universal private school voucher programs (Cheng et al., 2019).

About 97 percent of the sample of survey respondents is either a public school principal (91 percent) or an administrator (6 percent). Two-thirds of the school leaders are white, one-fifth are Hispanic, and less than one-tenth of the leaders are Black, Asian, or another race. The majority of the public school leaders identify as female (57 percent). Sixty-one percent of the respondents are leaders of elementary schools and almost half (45 percent) of their schools are located in suburban areas. On average, 63 percent of the students are identified as qualifying for the federal school lunch program, 32 percent are identified as English Language Learners, and 61 percent are identified as racial minorities. The average percent of FRL students reported by school leaders is similar to the percent reported by the California Department of Education (60 percent).⁶ The average percent of ELL students reported by the public school leaders is similar to – although higher than – the percent reported by the California Department of Education (20 percent).⁷ The average percent of students identified as racial minorities by the school leaders is

⁶ *Student Poverty FRPM Data*. California Department of Education. Retrieved from <https://www.cde.ca.gov/ds/sd/sd/filespp.asp>

⁷ *Facts about English Learners in California*. California Department of Education. Retrieved from <https://www.cde.ca.gov/ds/sd/cb/cefelfacts.asp>

very similar to the percent of students identified as African American or Hispanic by the California Department of Education (60 percent).⁸

⁸ *Fingertip Facts on Education in California*. California Department of Education. Retrieved from <https://www.cde.ca.gov/ds/sd/cb/ceffingertipfacts.asp>

Table 4: Descriptive Statistics

Variable	Mean	Standard Deviation	Min	Max	N
<i>Dependent</i>					
Support Number	1.64	0.92	1	5	745
Certain not to Support	0.59	0.49	0	1	745
Very Little Chance	0.25	0.43	0	1	745
Some Chance	0.13	0.33	0	1	745
Very Good Chance	0.02	0.15	0	1	745
Certain to Support	0.02	0.14	0	1	745
<i>Respondent</i>					
Principal	0.91	0.28	0	1	755
Administrator	0.06	0.24	0	1	755
Other Leader	0.02	0.14	0	1	755
White	0.66	0.47	0	1	755
Black	0.07	0.26	0	1	755
Asian	0.04	0.19	0	1	755
Hispanic	0.19	0.39	0	1	755
Other Race	0.03	0.16	0	1	755
Male	0.43	0.49	0	1	755
Female	0.57	0.50	0	1	755
Latitude	36.11	2.34	32.08	45.53	755
Longitude	-119.53	3.63	-124.25	-75.45	755
<i>School</i>					
Urban	0.28	0.45	0	1	755
Suburban	0.45	0.50	0	1	755
Rural	0.28	0.45	0	1	755
Elementary School	0.61	0.49	0	1	755
Middle School	0.14	0.35	0	1	755
High School	0.19	0.39	0	1	755
Enrollment < 400	0.25	0.43	0	1	755
400 < Enroll < 800	0.48	0.50	0	1	755
800 < Enroll < 1200	0.14	0.35	0	1	755
1200 < Enroll < 1600	0.04	0.19	0	1	755
Enrollment > 1600	0.10	0.30	0	1	755
Los Angeles County	0.17	0.38	0	1	755
Riverside County	0.06	0.25	0	1	755
<i>Students</i>					
FRL Proportion	0.63	0.29	0	1	755
ELL Proportion	0.32	0.22	0	1	755
Minority Proportion	0.61	0.28	0	1	755

Table 5: Distribution of Support by Category (Percent)

	Certain Not to Support	Very Little Chance	Some Chance	Very Good Chance	Certain to Support
California	58.62	21.55	18.10	0.00	1.72

Note: Averages are reported for the control group.

Overall Findings

Every analytic model fails to detect statistically significant effects of deregulations on public school leaders' support for private school choice in California (Table 6). The null results exist for all five outcome categories (Table 7). Moreover, although we theorized that the deregulation effects would be negative (indicating more support for private school vouchers) three of the four deregulations actually have positive coefficients, indicating that those deregulations might further decrease support for the hypothetical voucher programs. The only deregulation with the theorized negative coefficient is for reporting standardized test results to the state – indicating that traditional public school leaders in California dislike that particular regulation the most. However, none of the coefficients are anywhere near statistical significance, as p-values are above 27 percent for each treatment and analytic model.

While no statistical significance exists for any of the treatment dummy variables, some control variables explained differences in support for private school vouchers overall. School directors, minority leaders, and male leaders are more likely to support the hypothetical private school choice program. Leaders of schools with higher proportions of FRL students are more likely to support private school choice, while leaders of schools with higher proportions of students identified as racial minorities are less likely to support private school choice.

Specifically, school directors are about 27 percentage points (46 percent) less likely to report being “certain not to support” the hypothetical voucher program than school principals.

Black school leaders are about 16 percentage points (27 percent) less likely to report being “certain not to support” the program than white principals. Female school leaders are about 9 percentage points (15 percent) more likely to report being “certain not to support” the hypothetical voucher program than male leaders.

A 10 percentage point increase in the amount of FRL students in the school is associated with about a 2 percentage point (3 percent) reduction in a school leader’s likelihood of reporting that they are “certain not to support” the program, while a 10 percentage point increase in the amount of students identified as racial minorities is associated with a 2 percentage point (3 percent) increase in a school leader’s likelihood of reporting that they are “certain not to support” the program. Leaders in schools with higher proportions of FRL students might be more likely to support private school choice if they believe that students from richer families will use the program (e.g. Martinez, Godwin, & Kemerer, 1995). If the claim is true, that means their schools would be the least affected by the policy change; however, some studies also find that students from families with lower income families tend to be more likely to apply for vouchers (e.g. Fleming et al., 2015; Howell, 2004).

Leaders in schools with higher proportions of racial minorities might be concerned that private school vouchers could further increase racial stratification in their schools (e.g. Bifulco & Ladd, 2007; Renzulli & Evans, 2005), despite evidence from private school voucher programs in the U.S. indicating otherwise (e.g. Egalite, Mills, & Wolf, 2017; Swanson, 2017). This finding could also be explained if public school leaders believe that racial minorities are more likely to apply for the voucher program – meaning their schools would lose more students (e.g. Campbell, West, & Peterson, 2005; Figlio, Hart, & Metzger, 2010).

Table 6: Effects of Deregulations on Reported Support

	Support (Ordered Probit)	Support (Ordered Logit)	Support (Ordered Probit)	Support (Ordered Logit)
Report Test	-0.034 (0.522)	-0.032 (0.572)	-0.042 (0.422)	-0.039 (0.488)
Administer Test	0.015 (0.774)	0.018 (0.760)	0.008 (0.872)	0.014 (0.798)
Certified Teachers	0.057 (0.273)	0.057 (0.290)	0.052 (0.306)	0.056 (0.301)
Transportation	0.030 (0.566)	0.021 (0.697)	0.015 (0.766)	0.009 (0.875)
Director			-0.266* (0.018)	-0.284** (0.008)
Other Race			-0.198* (0.040)	-0.206* (0.039)
Black			-0.155* (0.013)	-0.183** (0.006)
Female			0.096** (0.006)	0.085* (0.020)
400 < Enroll < 799			-0.101* (0.024)	-0.100* (0.037)
FRL Proportion			-0.157* (0.048)	-0.171* (0.040)
Minority Proportion			0.214* (0.016)	0.232* (0.015)
Controls	No	No	Yes	Yes
Pseudo R-Squared	0.0021	0.0018	0.0299	0.0295
N	745	745	745	745

Notes: P-values in parentheses. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Average marginal effects are reported for the first outcome category of “certain not to support.” Models in the last two columns use controls for the gender, race, and position of respondents, school level, enrollment, urbanicity, and percentage of students identified as FRL, ELL, and minority. Sample size is 745 because 10 observations are missing the dependent variable. Statistically insignificant control variables are not displayed.

Table 7: Effects of Deregulations on Reported Support by Category

	Certain Not to Support	Very Little Chance	Some Chance	Very Good Chance	Certain to Support
Report Test	-0.042 (0.422)	0.015 (0.423)	0.018 (0.420)	0.004 (0.432)	0.005 (0.434)
Administer Test	0.008 (0.872)	-0.003 (0.872)	-0.004 (0.872)	-0.001 (0.872)	-0.001 (0.872)
Certified Teachers	0.052 (0.306)	-0.019 (0.305)	-0.022 (0.313)	-0.005 (0.301)	-0.006 (0.320)
Transportation	0.015 (0.766)	-0.006 (0.765)	-0.006 (0.766)	-0.002 (0.765)	-0.002 (0.767)
Controls	Yes	Yes	Yes	Yes	Yes
Pseudo R-Squared	0.0299	0.0299	0.0299	0.0299	0.0299
N	745	745	745	745	745

Notes: P-values in parentheses. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Average marginal effects are reported for each outcome category. All models employ ordered probit regression and use controls for the gender, race, and position of respondents, school level, enrollment, urbanicity, and percentage of students identified as FRL, ELL, and minority.

School Size

In an exploratory analysis, we find some evidence to suggest that public school deregulations affect reported support of hypothetical voucher programs for leaders of schools with enrollments above 800 students. However, the effects are in the opposite direction than we originally theorized. Unexpectedly, we find evidence to suggest that test administration and teacher certification deregulations in public schools further decrease support for voucher programs by leaders of large public schools in California (Table 8).

Specifically, our models with all controls find that no longer requiring large public schools to administer state standardized tests increases the likelihood that public school leaders report being “certain not to support” the hypothetical voucher program by about 21 percentage points (36 percent). In addition, no longer requiring large public schools to hire state-certified teachers increases the likelihood that public school leaders report being “certain not to support”

the hypothetical voucher program by about 17 percentage points (29 percent); however, this result is only marginally significant and robust to the two ordered logit models.

The two results for large traditional public schools are unexpected. As we theorized, decreasing the costs associated with running a school should increase the likelihood public school leaders support a policy change, all else equal. However, the economic theory of regulatory capture might explain the seemingly surprising result. Economies of scale suggest that regulations are more likely to benefit larger firms than smaller ones (Bradford, 2004). In addition, businesses that hold a large share of the market could actually benefit from government regulations if they stifle competition (Stigler, 1971). For example, big taxi companies tend to lobby for more regulations of the ridesharing industry to keep out competitors such as Uber (Dills & Mulholland, 2018).⁹ Big businesses like McDonalds and Starbucks spend millions of dollars lobbying for government-imposed safety regulations which could decrease the supply of their competitors within the food industry.¹⁰

Similarly, big traditional public schools may benefit from government regulations because they are more likely to have enough revenue to cover production costs – including regulatory costs – than smaller schools. In addition, as in other industries, government regulations could limit the number of competitors that enter the education market by raising operating costs, which would benefit schools with larger shares of the existing market. As McShane (2018, p. 6) argues, “regulations can have anticompetitive effects [...] established firms can use regulations to crowd out their competition.” Finally, because traditional public

⁹ Cab companies unite against Uber and other ride-share services. The Washington Post. Retrieved from https://www.washingtonpost.com/local/trafficandcommuting/cab-companies-unite-against-uber-and-other-ride-share-services/2014/08/10/11b23d52-1e3f-11e4-82f9-2cd6fa8da5c4_story.html

¹⁰ *Millions spent lobbying food safety*. Food Safety News. Retrieved from <https://www.foodsafetynews.com/2010/08/millions-spent-lobbying-food-safety-during-second-quarter/>

schools currently abide by standardized testing and teacher certification regulations, larger public schools would face more substantial costs associated with transitioning to a new competitive environment than smaller public schools.

Table 8: Effects of Deregulations on Reported Support (by School Size)

	Support (Ordered Probit)	Support (Ordered Logit)	Support (Ordered Probit)	Support (Ordered Logit)
Report Test (Large)	0.015 (0.871)	0.013 (0.899)	-0.023 (0.809)	-0.027 (0.790)
Report Test (Small)	-0.051 (0.419)	-0.050 (0.460)	-0.065 (0.297)	-0.058 (0.377)
Difference	-0.067 (0.558)	-0.062 (0.606)	-0.042 (0.710)	-0.031 (0.794)
Administer Test (Large)	0.175 (0.103)	0.195 (0.101)	0.206* (0.048)	0.218* (0.050)
Administer Test (Small)	-0.030 (0.632)	-0.034 (0.602)	-0.050 (0.411)	-0.048 (0.459)
Difference	-0.205+ (0.098)	-0.230+ (0.091)	-0.256* (0.033)	-0.267* (0.038)
Certified Teachers (Large)	0.141 (0.128)	0.171+ (0.081)	0.150 (0.104)	0.173+ (0.068)
Certified Teachers (Small)	0.016 (0.796)	0.004 (0.948)	0.002 (0.978)	-0.004 (0.951)
Difference	-0.126 (0.259)	-0.166 (0.155)	-0.148 (0.176)	-0.177 (0.120)
Transportation (Large)	0.129+ (0.085)	0.173 (0.106)	0.141 (0.156)	0.140 (0.200)
Transportation (Small)	-0.015 (0.801)	-0.029 (0.646)	-0.037 (0.535)	-0.044 (0.491)
Difference	-0.184 (0.110)	-0.202 (0.104)	-0.179 (0.127)	-0.184 (0.148)
Controls	No	No	Yes	Yes
Pseudo R-Squared	0.0070	0.0070	0.0284	0.0288
N	745	745	745	745

Notes: P-values in parentheses. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Average marginal effects are reported for the first outcome category of “certain not to support.” Models in the first two columns control for school size. Models in the last two columns use controls for the gender, race, and position of respondents, school level, enrollment, urbanicity, and percentage of students identified as FRL, ELL, and minority. Sample size is 745 because 10 observations are missing the dependent variable. “Large” means enrollment is at or above 800 students. “Small” means enrollment is below 800 students.

Conclusions and Discussion

Descriptively, we find that public school leaders in California largely oppose a hypothetical private school voucher program in their state. A majority of the respondents (59 percent) in both the control group and the overall sample indicated that they are “certain not to support” the hypothetical program. Over 80 percent of the sample of respondents indicated that they would either be “certain not to support” the program or that there is a “very little chance” they would support the program.

This study is the first to empirically examine the effects of public school deregulations on public school employees’ support for private school voucher programs. Using a survey experiment administered in 2019, we do not find evidence to suggest that any of the four deregulations increase public school employees’ support for a hypothetical voucher program in California overall. The overall null results can be explained in two ways: (1) the perceived costs of additional competition from private school voucher programs far exceeds the perceived benefits of additional autonomy for public school leaders in California, or (2) the randomly assigned benefits of additional public school autonomy come with additional costs. Additional autonomy could also mean more adjustments and responsibilities for public school leaders.

While most results are insignificant, we unexpectedly find that deregulations related to teacher certification and administration of standardized tests further decrease support for private school choice for leaders of large public schools. This unexpected result may be explained by regulatory capture (McShane, 2018; Stigler, 1971). Large traditional public schools may benefit from government regulations because they are more likely to have enough revenues to cover production costs, including regulatory costs, than smaller schools, on average. More research needs to be done regarding regulatory capture in the K-12 education system in the United States.

For example, future studies should examine whether or not leaders of large private schools are more likely to support voucher program regulations than leaders of small private schools.

Our study has limitations. The response rate was only 10.59 percent, meaning that the results might not be representative of public school leaders in the entire state. The study is an experiment that is administered in the field, but the results are based on survey responses. Public school leaders' responses on a survey about a hypothetical voucher program may not accurately reflect their support for actual voucher programs. Also because of the survey experiment design, the randomly assigned deregulations may not have seemed real to the private school leaders, which could have introduced attenuation bias into the analyses. Furthermore, the survey was only sent to public school leaders in California. Results might differ in other states and for other types of public school employees.

While these results suggest that deregulations of public schools are unlikely to increase their leaders' support for private school choice programs, much more research on the topic is needed. This experiment should be replicated in states that are actually deciding whether or not to pass private school voucher programs. Future studies should evaluate the effects of deregulations on support from other types of public school employees such as teachers. Deregulations may be more beneficial to public school teachers since they are the ones providing students with instruction. Moreover, future studies should examine the effects of other benefits for public school employees such as salary raises, more job security, and class size reductions on their support for private school vouchers.

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Appendix: 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 best describes the location of your school?

Rural

Urban

Suburban

Q5: What is your school's total enrollment?

0-399

400-799

800-1199

1200-1599

Over 1600

Q6: About what proportion of your students qualify for the national school lunch program?

0%

25%

50%

75%

100%

Q7: About what proportion of your students are racial minorities?

0%

25%

50%

75%

100%

Q8: About what proportion of your students are English Language Learners?

0%

25%

50%

75%

100%

Q9: Would you support a new private school voucher program in California (available to all students in the state) next year?

Note: If this program is passed, it would not change any state requirements of your school.

Certain not to support

Very little chance

Some chance

Very good chance

Certain to support

Treatment Group One

Exactly the same as Control Group, but the note on Q9 says “If this program is passed, your school would no longer be required to report standardized test results to the state.”

Treatment Group Two

Exactly the same as Control Group, but the note on Q9 says “If this program is passed, your school would no longer be required to administer state standardized tests.”

Treatment Group Three

Exactly the same as Control Group, but the note on Q9 says “If this program is passed, your school would no longer be required to hire teachers certified by the state.”

Treatment Group Four

Exactly the same as Control Group, but the note on Q9 says “If this program is passed, your school would no longer be required to provide students with transportation services.”