

# THE 123s OF SCHOOL CHOICE

What the research says about private  
school choice programs in America

**2024 EDITION**



# ABOUT EDCHOICE

EdChoice is a 501(c)(3) nonprofit, nonpartisan organization. Our mission is to advance educational freedom and choice for all as a pathway to successful lives and a stronger society. We are committed to understanding and pursuing a K-12 education ecosystem that empowers every family to choose the learning environment that fits their children's needs best. EdChoice is the intellectual legacy of Milton and Rose D. Friedman, who founded the organization in 1996 as the Friedman Foundation for Educational Choice.

The contents of this publication are intended to provide empirical information and should not be construed as lobbying for any position related to any legislation.

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# TABLE OF CONTENTS

Introduction .....	1
Cumulative Studies by Outcome and Year .....	9
Overall Effects Counts for Studies of Private School Choice Programs .....	10
Number of Studies of Private School Choice Programs by Location .....	10
Program Participant Test Scores .....	13
Program Participant Educational Attainment .....	21
Parent Satisfaction .....	27
Public School Students' Test Scores .....	37
Civic Values and Practices .....	47
Racial/Ethnic Integration .....	53
Fiscal Effects .....	61
School Safety and Climate .....	75
Appendix .....	84
Other Reviews of Educational Research .....	85
What Can Research Tell Us About School Choice? .....	91
Research Studies on ESA Programs .....	97
Research Studies on Voucher Programs .....	99
Research Studies on Tax-Credit Scholarship Programs .....	109
Research Studies on Privately Funded Programs .....	113
Notes .....	117
Contributors .....	121

# INTRODUCTION

## Does school choice work?

The short answer is yes. The longer answer begins with a question: how do you know whether an education reform works?

Americans have been exercising school choice for as long as America has valued education. People have chosen where to live based on nearby schools. They have sent their children to private schools. They have homeschooled. It is next to impossible to evaluate “school choice” as a general proposition.

There are, however, specific policies that attempt to extend the choices that have always been available to the wealthier and more mobile families in America to everyone. While the idea for such policies had been kicked around for a very long time, school choice picked up steam in the late 1980s and early 1990s, with the first modern private school choice program launching in Milwaukee in 1990.

Education reforms during these decades moved from inputs to outputs. A focus on creating standards gave way to efforts to use standardized test scores as a tool for making schools accountable.

Given these currents, perhaps it was inevitable that school choice and test-based accountability would intertwine. While school choice advocacy has always been driven, in part, by philosophical and ideological arguments, the promise of improved academic performance was one of the talking points that helped school choice pick up steam. America would judge this school reform by the academic fruits it bore. Given what “high academic standards” meant at the time, all eyes were on how well students in voucher programs performed on standardized tests.

The first studies of private school choice programs were published in 1998 and 1999. Both were random assignment studies (see Appendix) that found students in the Milwaukee Parental Choice Program tended to improve on standardized test scores. These studies were followed in later years by similar research of several pilot programs. Privately funded voucher programs in Charlotte, Dayton, New York City, and Washington, D.C. all had null-to-positive impacts on the test scores of randomly accepted students.

While these early results were promising and encouraged advocates of the school choice policies, the debate was by no means settled, and the program evaluations were just beginning.

Some in the education establishment were keen to point out in the early days of school choice research that standardized testing has limitations. “Any thorough evaluation of schools and school choice models should examine non-achievement outcomes,” one scholar noted.<sup>1</sup> Although tests are easy to publish, administer, score, and analyze, there are lots of other outcomes from schools that we care about. Those outcomes, however, are harder to measure, harder to analyze, and harder to compare. For entirely reasonable reasons, education reformers have historically leaned on test scores in discussions of school choice.

Lucky for us, we don’t have to rely on test scores so heavily. Just as the relationship between school choice programs and test scores reflected the zeitgeist in which the earliest school choice programs were born, school choice research purposes and designs have reflected changing expectations in the culture by moving away from relying on standardized test scores. Growing discontentment with No Child Left Behind (NCLB) led to the Every Student Succeeds Act of 2015 (ESSA), which sought, in part, to reduce standardized testing and loosen test-based accountability measures. The National Education Association (NEA), hardly an ally of school choice programs, has called this shift a “major improvement.”<sup>2</sup>

Of course, this realization that not everyone expects the same thing from their schools only reflects what families and communities have been communicating for years. A 2013 report from the Thomas B. Fordham Institute and Harris Interactive found that about a quarter (23%) of parents highly value test scores in K-12 education.<sup>3</sup> Other parents were more likely to value college and workforce preparation (36%), civic and leadership skills (24%), multiculturalism (22%), or arts and music instruction

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<sup>1</sup> Diane Ravitch (2002), *A Brief History of Testing and Accountability*, retrieved from Hoover Institution website: <https://www.hoover.org/research/brief-history-testing-and-accountability>  
Gary Miron, Stephanie Evergreen, and Jessica Urschel (2008). *The Impact of School Choice Reforms on Student Achievement*, Education Policy Research Unit, Arizona State University, retrieved from: <https://nepc.colorado.edu/publication/the-impact-school-choice-reforms-student-achievement>

<sup>2</sup> National Education Association (2020), *History of Standardized Testing in the United States*, retrieved from the National Education Association website: <https://www.nea.org/professional-excellence/student-engagement/tools-tips/history-standardized-testing-united-states>

<sup>3</sup> Dara Zeehandelaar and Amber M. Winkler (2013), *What Parents Want: Education Preferences and Trade-Offs*, retrieved from the United States Department of Education’s Education Resource Information Center: <https://files.eric.ed.gov/fulltext/ED598700.pdf>

(15%). Education priorities varied by race and ethnicity, household income, political ideology, religious service attendance, parenting style, community type, and plenty of other factors.

Each of those priorities reflect certain educational values, which are guided by what we think education is for. According to EdChoice polling, most parents find the following “very” or “extremely” important: socialization, skills for future employment, independent thinking, citizenship, character development, and learning to fix social problems. A quarter of parents made their schooling decision for “academic quality,” but only 14% of parents named test scores as a major consideration, which suggests some parents believe there is a meaningful difference between the two. Parents who change their child’s schooling sector cite a variety of problems at their previous school; in fact, bullying, mental health, and bad peer groups were more frequently cited problems than anything academic.<sup>4</sup>

Given these diverse preferences and reasons for making education decisions, it’s no surprise that EdChoice polling has found for years that a plurality of Americans consistently think the amount of time schools spend on standardized testing is too high. Our annual Schooling in America survey as well as our monthly public opinion tracker with Morning Consult reveal this. Our surveys of teachers find even more frustration with the time spent on testing. Education Next’s annual poll from 2015 to 2019 even found that about half of teachers opposed a federal testing mandate altogether.<sup>5</sup>

In short, there is ever-growing recognition that “what works” in education varies based on what people want from schools. That is why *The 123s of School Choice* is massive. Understanding the effectiveness of school choice programs requires studying a variety of outcomes that inform families’ various preferences. Since 2019, *The 123s* has intended to serve as a comprehensive guide to an increasingly diverse school choice research literature. Almost 190 empirical studies of school choice programs have been published to date; few education reforms have been researched as extensively. Generally, each study provides something different—a different program to study, different ages of the program, and different research methods. Perhaps most notably, these studies look at a variety of outcomes.

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<sup>4</sup> EdChoice and Morning Consult (March 2023), *The Public, Parents, and K-12 Education: A National Polling Report*, retrieved from the EdChoice and Morning Consult satellite website: <https://edchoice.morningconsultintelligence.com/assets/226574.pdf>

<sup>5</sup> David M. Houston, Paul E. Peterson, and Martin R. West (2022), *Partisan Rifts Widen, Perceptions of School Quality Decline*, retrieved from the Education Next website: <https://www.educationnext.org/partisan-rifts-widen-perceptions-school-quality-decline-results-2022-education-next-survey-public-opinion/>



The first set of outcomes we cover are studies of the personal benefits that students and families can gain from participating in private school choice programs. These include:

- **PROGRAM PARTICIPANT TEST SCORES:** Studies examining whether students who receive and/or use scholarships to attend a private school of their choice achieve higher test scores than students who applied for but did not receive or use scholarships.
- **PROGRAM PARTICIPANT ATTAINMENT:** Studies examining whether school choice programs have an effect on students' likelihood to graduate high school, enroll in college or attain a college degree.
- **PARENT SATISFACTION:** Studies that use polling and surveys to measure the extent to which parents with children participating in private school choice programs are satisfied with the program.
- **SCHOOL SAFETY:** Studies that examine the effect of educational choice on school climate and safety-related issues such as student bullying, physical conflict, gang activities, drug-related problems, discipline issues, and safety practices.

The second set of outcomes we cover are studies of the benefits that communities and society can gain from these programs. These include:

- **PUBLIC SCHOOL STUDENTS' TEST SCORES:** These studies examine whether students who leave public schools by using a private school choice program have an effect on the test scores of students who remain in public schools.
- **CIVIC VALUES AND PRACTICES:** These studies examine whether school choice programs have an effect on students' tolerance for the rights of others, civic knowledge, civic participation, volunteerism, social capital, civic skills, voter registration, voter turnout, and patriotism.
- **RACIAL/ETHNIC INTEGRATION:** These studies examine the effect of private school choice programs on racial and ethnic diversity in schools.
- **FISCAL EFFECTS:** These studies examine whether school choice programs generate net savings, net costs or are cost-neutral for taxpayers.

# What's New This Year?

Since releasing the first edition in 2019, we've updated *The 123s* every year with all the newly published studies that fall within our inclusion criteria (please see Appendix). Last year's edition had several updates, including a new outcome category (school safety) with eight studies dating back to 2001. Here's what's new in the 2024 edition.

- We include one new study, a fiscal analysis of Georgia's Qualified Education Expense Tax Credit. Researchers from Georgia's Department of Audits & Accounts concluded that "forgone tax revenue would be completely offset by expenditure reductions if 67% of scholarship recipients would have attended public school without the scholarship (i.e., the break-even point)." Citing findings from previous literature, that similar programs have a switcher rate of around 90%, the researchers conclude the program would provide net savings to the state of Georgia of \$28 million.
- Two other studies saw updates. Chingos and Kisida (2023) is an update to research examining the causal between participation in Washington, D.C.'s voucher program and educational attainment. As with the previous version of the study, published in 2019, Chingos and Kisida found no visible effect. Figlio et al. (2023) updates a paper about the competitive effects of Florida's tax credit scholarship program. As with the last version, this paper found Florida's tax credit scholarship program to have a positive effect on the test score results of public school students.

# Understanding Good Studies

So where is the evidence pointing?

If you take a peek at the tables on page 9 and 10, you'll see a lot more green in the "positive" column than red in the "negative" column. The number of studies that find null or positive effects from school choice significantly outweigh that of studies that find negative effects. Case closed, right?

Well, social science is not that simple. Any study is limited by its sample, its methods, and the data available to researchers. For ethical and practical reasons too numerous to count, a social scientist has far less control over her research subjects than, say, a chemist. A chemist isn't interested in counting how many times one result happens over another; what matters is the true result that always occurs. While a proper

lab experiment should follow the same laws of physics, whether it is conducted in Florida or Ohio, an education reform will vary depending on the social, political, and economic context. Even the same school choice policy can look different from state to state. Programs differ substantially in their rules and regulations, eligibility criteria, funding, and so on. These differences make it very difficult to generalize results from the study of one program, whether positive or negative. In a pharmaceutical study, everyone in the treatment group gets the same pill, which means studies have greater external validity (that is, results can be generalized to a much broader population). This is not necessarily the case with school choice programs, where the treatment (i.e., school choice policies) has more variance.

But it is also important to emphasize the methods that best isolate the effect of such interventions. Enter randomized control trials (RCTs), or random assignment studies. When looking at what happens to students who participate in private school choice programs, we highlight the results from studies that use randomization to create a “treatment” and “control” group. The former group is offered a scholarship and the latter is not. An RCT is the best way to deal with selection bias, or the tendency of people who do not elect to participate in the program to be different from those who do, and in ways that could affect the results of the study. RCTs are not perfect, but when available, they have a privileged position over non- or quasi-experimental studies that use statistical adjustments to approximate randomness. For these reasons, in *The 123s*, we note when a study is an RCT.

## Settling the Debate?

Two disclaimers before we move on to the research itself.

First, for clarity, this is not a meta-analysis. We are not taking effect sizes and boiling them down to an average effect. The goal of *The 123s* is to present the increasingly large body of private school choice research in a clear and easy-to-read format and cite the relevant studies so that anyone who is interested in the individual results can easily find them and read in more detail.

Second, *The 123s* is not meant to be a debate-ender. We live in a world where conversation is driven by short op-eds and even shorter tweets, with discussions about school choice research limited to a few studies, at most. In contrast, we present this comprehensive guide as a convenient way to see the relevant studies on a variety of topics. This resource should inform the debates about school choice. We take transparency and credibility seriously, and as such, we explain what we have

included, what we have excluded, and why (see Appendix). Readers may disagree with our decisions, and we are always open to feedback about how we could make future editions of *The 123s* even more informative.

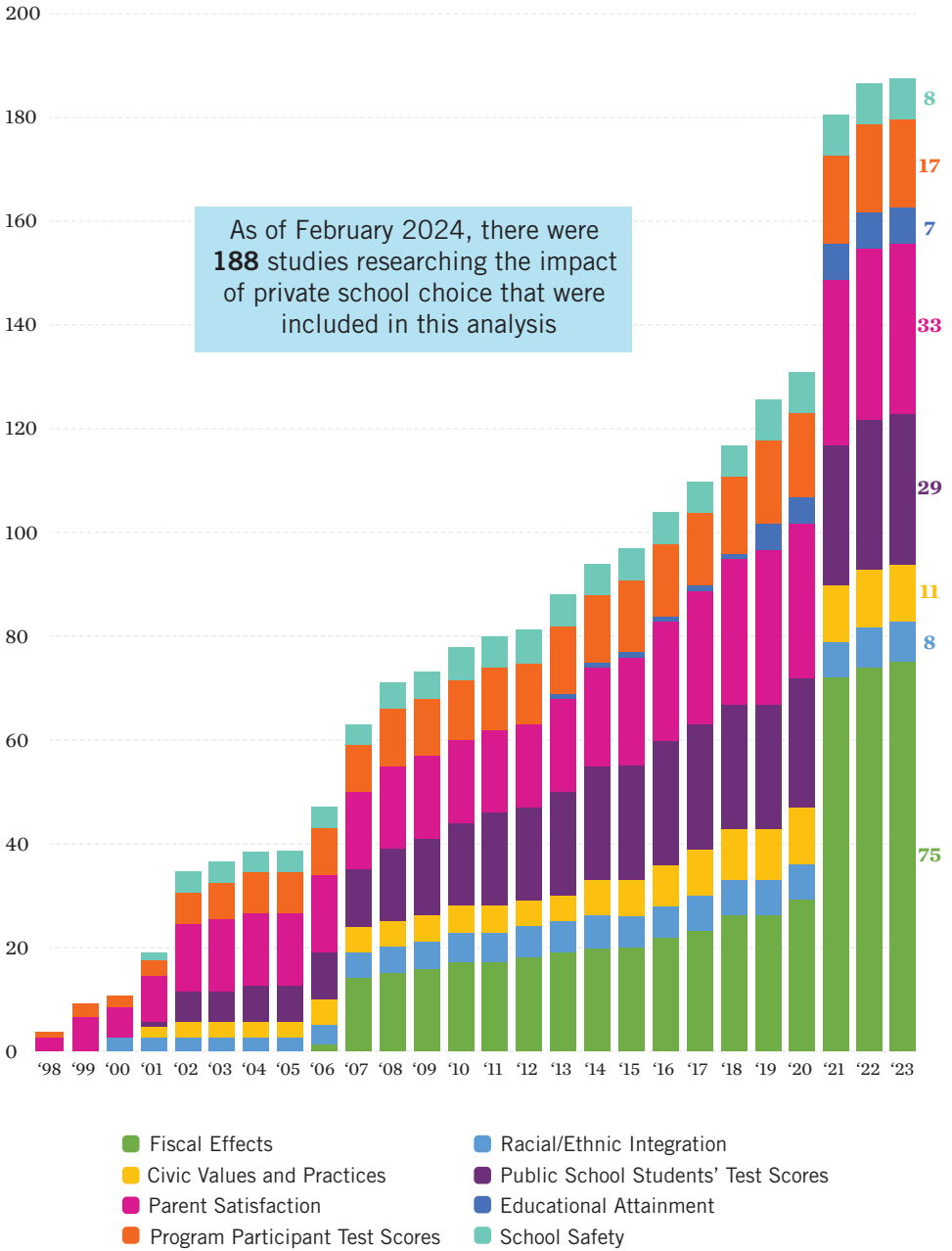
## How to Use This Report

*The 123s of School Choice: 2024 Edition* is divided into 11 sections. First, we summarize the number of studies and how many come to which conclusion. The following sections present the eight outcomes covered in this publication, including school safety and climate, a new subject of study. They are followed by a list of reviews that other researchers conducted about the eight outcomes we cover. The last section discusses the strengths and limitations of research on school choice. Finally, tables in the Appendix present the various programs, organized by type.

With that, we present to you the research about private school choice programs in America.



# Cumulative Studies by Outcome and Year



# Overall Effects Counts for Studies of Private School Choice Programs

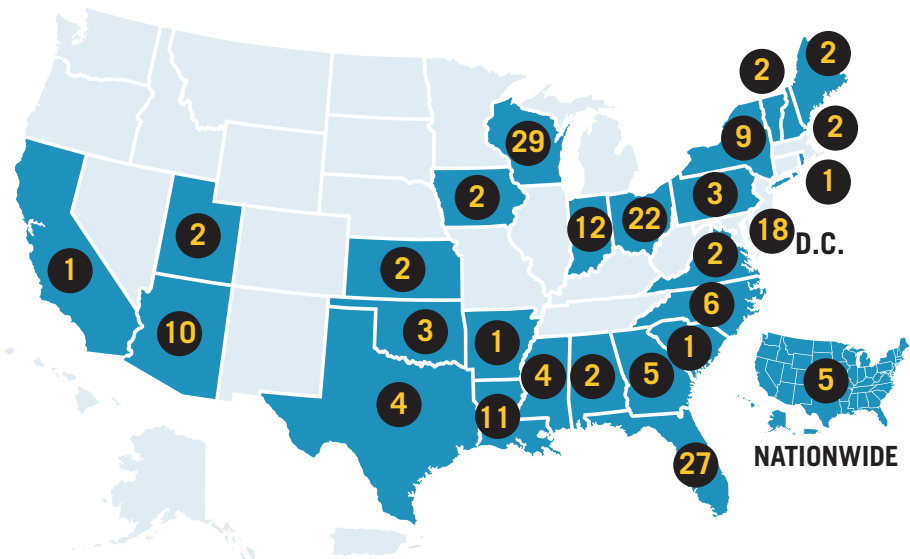
Outcome	Number of Studies	Positive Effect		No Visible Effect		Negative Effect	
		#	%	#	%	#	%
Program Participant Test Scores	17	11	65%	4	22%	2	12%
Educational Attainment	7	5	71%	2	29%	0	0%
Parent Satisfaction	33	31	91%	1	3%	2	6%
Public School Students' Test Scores	29	26	90%	1	3%	2	7%
Civic Values and Practices	11	6	55%	5	45%	0	0%
Integration*	8	7	88%	1	13%	0	0%
Fiscal Effects	75	69	87%	5	6%	5	6%
School Safety	8	8	100%	0	0%	0	0%
<b>Total</b>	<b>188</b>	<b>163</b>	<b>84%</b>	<b>19</b>	<b>10%</b>	<b>11</b>	<b>6%</b>

\*One study employed multiple measures of racial integration and concluded that the program's net effect was neutral. We included this study in the "No Visible Effect" column.

Notes: If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect." The number of effects detected may differ from the number of studies included in the table because we classify some studies as having detected both positive and negative effects.

For Lamarche (2008) we removed the negative indicator because it was brought to our attention that the negative estimation in the paper was not a program effect. Rather, it was making a comparison between high-income and low-income groups of students.

## Number of Studies of Private School Choice Programs by Location







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# **RESEARCH OVERVIEWS FOR EIGHT SCHOOL CHOICE OUTCOMES**

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# **PROGRAM PARTICIPANT TEST SCORES**

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Do students get better test scores after getting private school vouchers? Studies reviewed in this section reveal whether students who won a lottery and/or used scholarships to attend a private school of their choice achieved higher test scores than students who applied for but did not receive or use scholarships.

Researchers have studied the effects that programs have on participating students' test scores. About one-third of these studies examine a privately funded voucher program in New York City. The Louisiana Scholarship Program (LSP) has been the only statewide voucher program studied experimentally. All other randomized control trials (RCTs) have been of voucher or scholarship programs limited to cities, including Milwaukee, Charlotte, Cleveland, Dayton, New York City, and Toledo. The Appendix gives a detailed explanation of how an RCT operates.

## Summary of Studies

	Total Number of Studies	Any Positive Effect	No Visible Effect	Any Negative Effect
Program Participant Test Scores	17	11	4	2

These studies examined three voucher programs and five privately funded scholarship programs across five states and Washington, D.C. Of the 17 random-assignment studies examining participant test scores, 11 have found positive outcomes for either the full sample or at least one subsample of students studied. Four found no visible effect for any group of students, and two found negative outcomes for all or some group of students.

## About the Methods

A “study” is defined as an analysis of a private school choice program in the United States, whether publicly or privately funded. Random assignment is the most rigorous type of analysis in social science. For this reason, we focus only on random assignment studies when possible.

Our inclusion criteria require at least 10 random assignment studies of a certain outcome to exist in order for us to exclude all other nonexperimental study types. In the case of studies on program participant test scores, we include only random assignment studies. We include both RCT and nonexperimental studies in the other outcome sections.

Random assignment provides comparison groups that are, on average, equivalent on factors that are both observable (e.g., baseline test scores and gender) and unobservable (e.g., students’ and parents’ motivation). The only difference between the two groups is exposure to the treatment. Thus, differences in measured outcomes between lottery winners and lottery losers can be attributed to the private school choice programs rather than students’ background characteristics.

## Test Score Outcome of Participants from Random Assignment Studies

Author(s)	Location	Program Type	Year	Program Name
Erickson, Mills and Wolf	Louisiana	V	2021	Louisiana Scholarship Program
Webber et al.	Washington, D.C.	V	2019	Opportunity Scholarship Program
Abdulkadiroglu, Pathak, and Walters	Louisiana	V	2018	Louisiana Scholarship Program
Wolf et al.	Washington, D.C.	V	2013	Opportunity Scholarship Program
Lamarche	Milwaukee, WI	V	2008	Milwaukee Parental Choice Program
Greene, Peterson, and Du	Milwaukee, WI	V	1999	Milwaukee Parental Choice Program
Rouse	Milwaukee, WI	V	1998	Milwaukee Parental Choice Program
Bitler et. al.	New York, NY	P	2015	
Jin, Barnard, and Rubin	New York, NY	P	2010	
Cowen	Charlotte, NC	P	2008	
Bettinger and Slonim	Toledo, OH	P	2006	
Krueger and Zhu	New York, NY	P	2004	
Barnard et al.	New York, NY	P	2003	
Howell et al.	Washington, D.C.	P	2002	
Howell et al.	New York, NY	P	2002	
Howell et al.	Dayton, OH	P	2002	
Greene	Charlotte, NC	P	2001	

V = Voucher; P = Private Scholarship

We consider multiple studies of the same program to be unique if they study a different group of students or use different statistical models or research methods. Several longitudinal evaluations have been conducted on private school choice programs, with results reported annually. In these cases, we include the most recent evaluation. We exclude studies that were conducted by the same researchers or research team using the same data as previous analyses.

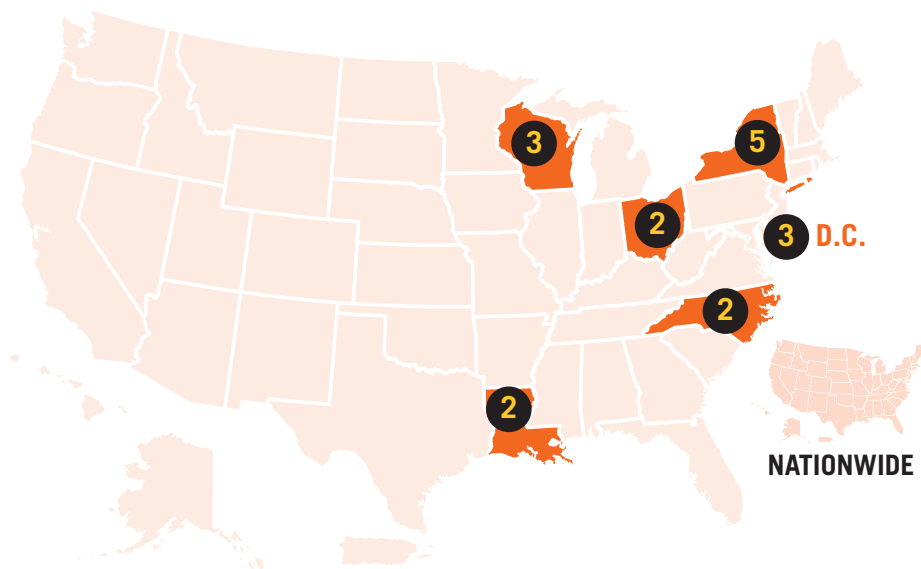
	Any Positive Effect		No Visible Effect		Any Negative Effect		RCT
	All students (full sample)	Some students (subsample)	All students (full sample)	Some students (subsample)	All students (full sample)	Some students (subsample)	
					X	X	✓
			○	○			✓
					X	X	✓
	✓	✓					✓
		✓					✓
	✓						✓
	✓	✓					✓
			○	○			✓
		✓					✓
	✓						✓
			○				✓
			○	○			✓
			○				✓
	✓	✓					✓
	✓	✓					✓
		✓	○				✓
	✓						✓

*Notes:* Table includes only random assignment studies, the gold-standard of research methods. A study by Howell, Wolf, Campbell, and Peterson (2002) included three distinct analyses of three different voucher programs. We report results from each analysis separately.

If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."

For Lamarche (2008) we removed the negative indicator because it was brought to our attention that the negative estimation in the paper was not a program effect. Rather, it was making a comparison between high-income and low-income groups of students.

# Number of Studies on Voucher Program Participant Test Scores by Location



## Additional Research Context

Researchers from the University of Arkansas conducted a meta-analysis of the test score effects of private school choice programs globally and estimated the overall effects of these programs on participants' reading and math test scores.<sup>1</sup> The researchers found, based on estimates of the most recent year of treatment in the studies, that students in the U.S. experienced positive gains on test scores that equate roughly to 30 more days of learning in reading and math. They note that “analyses based on the most recent year are considered more policy relevant than earlier results, as stakeholders may have changed their behavior in response to vouchers.”<sup>2</sup> Notably, they also note that “the longer a sample of voucher students has been treated, the larger and more positive the achievement effects tend to be.”

Two nonexperimental studies on voucher programs in Indiana and Ohio used matching methods to study the programs' effects on math and reading test scores. Both studies found negative effects for math and reading test scores.<sup>3</sup> A longitudinal evaluation of Milwaukee's voucher program that also used matching methods to study test score effect found null effects for math and positive effects on reading.<sup>4</sup>

Although matching may be the best research method available for studying programs that are not or cannot be oversubscribed, they are not as effective as randomized experiments in controlling for self-selection bias. Given the large number of random assignment studies of the effects of private school choice programs on participant test scores, we are more selective with our methods so that we focus attention on the more rigorously designed studies.

## Citations of Studies in Summary Table

Listed in chronological order, starting with most recent

Heidi H. Erickson, Jonathan N. Mills and Patrick J. Wolf (2021), The Effects of the Louisiana Scholarship Program on Student Achievement and College Entrance, *Journal of Research on Educational Effectiveness*, retrieved from <https://doi.org/10.1080/19345747.2021.1938311>

Ann Webber, Ning Rui, Roberta Garrison-Mogren, Robert B. Olsen, and Babette Gutmann (2019), *Evaluation of the DC Opportunity Scholarship Program: Impacts Three Years After Students Applied* (NCEE 2019-4006), retrieved from Institute of Education Sciences website: <https://ies.ed.gov/ncee/pubs/20194006/pdf/20194006.pdf>

Atila Abdulkadiroglu, Parag A. Pathak, and Christopher R. Walters (2018), Free to Choose: Can School Choice Reduce Student Achievement? *American Economic Journal: Applied Economics*, 10(1), pp. 175–206, <https://dx.doi.org/10.1257/app.20160634>

Marianne Bitler, Thurston Domina, Emily Penner, and Hilary Hoynes (2015), Distributional Analysis in Educational Evaluation: A Case Study from the New York City Voucher Program, *Journal of Research on Educational Effectiveness*, 8(3), pp. 419–450, <https://dx.doi.org/10.1080/19345747.2014.921259>

Patrick J. Wolf, Brian Kisida, Babette Gutmann, Michael Puma, Nada Eissa, and Lou Rizo (2013), *School Vouchers and Student Outcomes: Experimental Evidence from Washington, D.C.* *Journal of Policy Analysis and Management*, 32(2), pp. 246–270, <https://dx.doi.org/10.1002/pam.21691>

Hui Jin, John Barnard, and Donald Rubin (2010), A Modified General Location Model for Noncompliance with Missing Data: Revisiting the New York City School Choice Scholarship Program using Principal Stratification, *Journal of Educational and Behavioral Statistics*, 35(2), pp. 154–173, <https://dx.doi.org/10.3102/1076998609346968>

Joshua Cowen (2008), School Choice as a Latent Variable: Estimating the “Complier Average Causal Effect” of Vouchers in Charlotte. *Policy Studies Journal*, 36(2), pp. 301–315, <https://dx.doi.org/10.1111/j.1541-0072.2008.00268.x>

Carlos Lamarche (2008), Private school vouchers and student achievement: A fixed effects quantile regression evaluation, *Labour Economics*, 15(4), pp. 575–590, <https://doi.org/10.1016/j.labeco.2008.04.007>

Eric Bettinger and Robert Slonim (2006), *Using Experimental Economics to Measure the Effects of a Natural Educational Experiment on Altruism*. *Journal of Public Economics*, 90(8–9), pp. 1625–1648, <https://dx.doi.org/10.1016/j.jpubeco.2005.10.006>

Alan Krueger and Pei Zhu (2004), Another Look at the New York City School Voucher Experiment. *American Behavioral Scientist*, 47(5), pp. 658–698, <https://dx.doi.org/10.1177/0002764203260152>

John Barnard, Constantine Frangakis, Jennifer Hill, and Donald Rubin (2003), Principal Stratification Approach to Broken Randomized Experiments: A Case Study of School Choice Vouchers in New York City. *Journal of the American Statistical Association*, 98(462), pp. 310–326, <https://dx.doi.org/10.1198/016214503000071>

William G. Howell, Patrick J. Wolf, David E. Campbell, and Paul E. Peterson (2002), School Vouchers and Academic Performance: Results from Three Randomized Field Trials, *Journal of Policy Analysis and Management*, 21(2), pp. 191–217, <https://dx.doi.org/10.1002/pam.10023>

Jay P. Greene (2001), *Vouchers in Charlotte*. *Education Next*, 1(2), pp. 55–60, retrieved from Education Next website: <https://www.educationnext.org/vouchersincharlotte/#:~:text=Greene-,Jay%20P.,school%20of%20a%20family's%20choosing.>



Jay P. Greene, Paul Peterson, and Jiangtao Du (1999), Effectiveness of School Choice: The Milwaukee Experiment, *Education and Urban Society*, 31(2), pp. 190–213, <https://dx.doi.org/10.1177/0013124599031002005>

Cecilia E. Rouse (1998), Private School Vouchers and Student Achievement: An Evaluation of the Milwaukee Parental Choice Program, *Quarterly Journal of Economics*, 113(2), pp. 553–602, <https://dx.doi.org/10.1162/003355398555685>

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# **PROGRAM PARTICIPANT EDUCATIONAL ATTAINMENT**

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This section reviews studies that examined whether students who participated in a private school choice program were more likely to graduate from high school, more likely to enroll in college and/or more likely to persist in college than students who did not use scholarships.

Parents, policymakers, and other stakeholders ultimately care about the long-run effects of education programs. Some research suggests a relationship between better educational attainment and real-life outcomes, such as employment outlook, earnings, health, longevity and likelihood to commit crime. Even when studies look at test scores, they usually do so on the grounds that they provide reliable proxies for outcomes later in life..

## Summary of Studies

	Total Number of Studies	Any Positive Effect	No Visible Effect	Any Negative Effect
Program Participant Attainment	7	5	2	0

These studies examined four voucher programs, one tax-credit scholarship program, and one privately funded scholarship program, across five states and Washington, D.C. Of the seven studies examining program participants' educational attainment, five have found positive outcomes for either the full sample or at least one subsample of students studied, and two studies found no visible effect for any group of students. None of these studies found negative educational attainment outcomes for any group or subgroup of students.

## About the Methods

Studies considered in this section use random assignment and matching methods. In the context of school choice research, random assignment happens when scholarship programs are oversubscribed and scholarships are awarded via lottery. The winners win scholarships to attend a private school and lottery losers do not receive vouchers. Studies that use matching methods compare students participating in a choice program with a group of students enrolled in public schools that have the same or similar observed characteristics, such as baseline test scores, free and reduced-price lunch status, race/ethnicity or parent characteristics.

Given that only four studies on educational attainment use random assignment, we also include studies that use nonexperimental methods that have some strategy for controlling for self-selection. We exclude observational methods with only control variables, as they do not control for self-selection.

## Additional Research Context

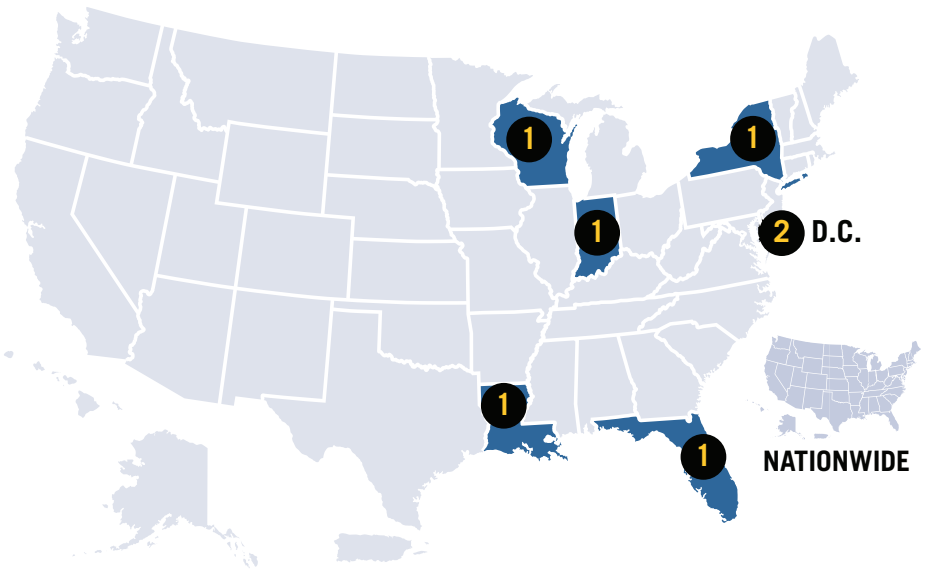
Leesa Foreman of the University of Arkansas reviewed the academic literature on educational attainment effects on students participating in private school voucher programs and charter schools.<sup>5</sup> She found generally positive findings in the studies she reviewed. We do not include one study that was included Foreman’s review because it is an observational study and does not use methods to account for self-selection.

## Attainment Outcomes of Participants from All Empirical Studies

Author(s)	Location	Program Type	Year	Program Name
Chingos and Kisida	Washington, D.C.	v	2023	Opportunity Scholarship Program
Austin and Pardo	Indiana	V	2021	Choice Scholarship Program
Erickson, Mills, and Wolf	Louisiana	V	2021	Louisiana Scholarship Program
Chingos et al.	Milwaukee, WI	V	2019	Milwaukee Parental Choice Program
Wolf et al.	Washington, D.C.	V	2013	Opportunity Scholarship Program
Chingos et al.	Florida	TCS	2019	Florida Tax Credit Scholarship Program
Cheng and Peterson*	New York, NY	P	2020	

V=Voucher; TCS=Tax-credit scholarship; P=Private scholarship

# Number of Studies on Program Participant Attainment Effects by Location



	Any Positive Effect		No Visible Effect		Any Negative Effect		RCT
	All students (full sample)	Some students (subsample)	All students (full sample)	Some students (subsample)	All students (full sample)	Some students (subsample)	
			○	○			✓
	✓						
			○	○			✓
	✓						
	✓	✓					✓
	✓	✓					
		✓	○				✓

*Notes:* This table shows all empirical studies using all methods. If a study’s analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as “no visible effect.” Two studies, on the Florida Tax Credit Scholarship Program and Milwaukee Parental Choice Program, used matching methods while all other analyses were based on random assignment.

\*The sample and methods used in this study are the same as those used in Matthew M. Chingos and Paul E. Peterson (2015). Experimentally Estimated Impacts of School Vouchers on College Enrollment and Degree Attainment. *Journal of Public Economics*, 122, pp. 1–12. <https://dx.doi.org/10.1016/j.jpubeco.2014.11.013>. Two main differences are framing across levels of disadvantage and more recent data added to the analysis.

# Citations of Studies in Summary Table

Listed in chronological order, starting with most recent

Matthew M. Chingos and Brian Kisida (2023), *School Vouchers and College Enrollment: Experimental Evidence From Washington, DC*, *Educational Evaluation and Policy Analysis*, 45(3), pp. 422-436, retrieved from <https://doi.org/10.3102/01623737221131549>

Megan J. Austin and Max Pardo (2021), *Do college and career readiness and early college success in Indiana vary depending on whether students attend public, charter, or private voucher high schools?* (REL 2021-071), U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest, retrieved from: <https://files.eric.ed.gov/fulltext/ED611171.pdf>

Heidi H. Erickson, Jonathan N. Mills and Patrick J. Wolf (2021), The Effects of the Louisiana Scholarship Program on Student Achievement and College Entrance, *Journal of Research on Educational Effectiveness*, <https://doi.org/10.1080/19345747.2021.1938311>

Albert Cheng and Paul E. Peterson (2020), *Experimentally Estimated Impacts of School Vouchers on Educational Attainments of Moderately and Severely Disadvantaged Students* (PEPG 20-02), retrieved from Harvard University website: [https://www.hks.harvard.edu/sites/default/files/Taubman/PEPG/research/PEPG20\\_02.pdf](https://www.hks.harvard.edu/sites/default/files/Taubman/PEPG/research/PEPG20_02.pdf)

\*\* This paper is an update to the analysis from: Matthew M. Chingos and Paul E. Peterson (2015), Experimentally Estimated Impacts of School Vouchers on College Enrollment and Degree Attainment, *Journal of Public Economics*, 122, pp. 1-12, <https://dx.doi.org/10.1016/j.jpubeco.2014.11.013>

Matthew M. Chingos, Daniel Kuehn, Tomas Monarrez, Patrick J. Wolf, John F. Witte, and Brian Kisida (2019), *The Effects of Means-Tested Private School Choice Programs on College Enrollment and Graduation*, retrieved from Urban Institute website: [https://www.urban.org/sites/default/files/publication/100665/the\\_effects\\_of\\_means-tested\\_private\\_school\\_choice\\_programs\\_on\\_college\\_enrollment\\_and\\_graduation\\_2.pdf](https://www.urban.org/sites/default/files/publication/100665/the_effects_of_means-tested_private_school_choice_programs_on_college_enrollment_and_graduation_2.pdf)

Patrick J. Wolf, Brian Kisida, Babette Gutmann, Michael Puma, Nada Eissa, and Lou Rizo (2013), School Vouchers and Student Outcomes: Experimental Evidence from Washington, DC, *Journal of Policy Analysis and Management*, 32(2), pp. 246–270, <http://dx.doi.org/10.1002/pam.21691>

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# PARENT SATISFACTION

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This section considers the effect of private school choice programs on parents' satisfaction with their chosen schools. We examine this body of research because parents are in the best position to understand what educational environment best fits their children. There does not exist a single way or type of school that can serve all children well. Considering parent satisfaction can help policymakers gauge the value of choice policies.

Most studies focus on overall school satisfaction, while some narrow in on satisfaction with specific aspects of the chosen school. When possible, study authors draw direct comparisons to families' former public schools. Studies that ask parents from several schooling sectors about their satisfaction can compare satisfaction across sectors.

Parent satisfaction studies have examined private school choice programs in Arizona, California, Florida, Georgia, Indiana, Kansas, Mississippi, North Carolina, New Hampshire, New York, Ohio, Texas, Wisconsin and Washington, D.C., plus national programs. Parent satisfaction studies have looked at private school choice programs in Wisconsin more than any other program.

Parents who have children in choice programs are more satisfied with their chosen private school than their previous school. They also are more satisfied with their schools than other private school parents, as well as public school parents.

## Summary of Studies

	Total Number of Studies	Any Positive Effect	No Visible Effect	Any Negative Effect
Parent Satisfaction	33	31	1	2

Parent satisfaction studies have examined three ESA programs, seven voucher programs, eight tax-credit scholarship programs, and at least seven privately funded scholarship programs across thirteen states and Washington, D.C. Of the 33 studies examining the effects of private school choice programs on parent satisfaction, 31 have found positive effects, one study found no visible effect, and two studies found negative effects.

# Parent Satisfaction Impacts from Private Educational Choice Programs

Author(s)	Location	Program Name
Varga et al.	Florida	Family Empowerment Scholarship Program
Catt and Cheng	Arizona	Empowerment Scholarship Accounts
Kittredge	Mississippi	Equal Opportunity for Students with Special Needs Program
Butcher and Bedrick	Arizona	Empowerment Scholarship Accounts
Varga et al.	Florida	John M. McKay Scholarships for Students with Disabilities Program
Legislative Audit Bureau	Wisconsin	Special Needs Scholarship Program
Catt and Rhinesmith	Indiana	Choice Scholarship Program
Egalite, Gray, and Stallings	North Carolina	Opportunity Scholarships
Black	Florida	John M. McKay Scholarships for Students with Disabilities Program
Kisida and Wolf	Washington, D.C.	Opportunity Scholarship Program
Witte et al.	Milwaukee, WI	Milwaukee Parental Choice Program
Weidner and Herrington	Florida	John M. McKay Scholarships for Students with Disabilities Program
Greene and Forster	Florida	John M. McKay Scholarships for Students with Disabilities Program
Witte	Milwaukee, WI	Milwaukee Parental Choice Program
Metcalf	Cleveland, OH	Cleveland Scholarship Program
Peterson, Howell, and Greene	Cleveland, OH	Cleveland Scholarship Program
Greene, Howell, and Peterson	Cleveland, OH	Cleveland Scholarship Program
Catt and Rhinesmith	Indiana	Choice Scholarship Program/School Scholarship Tax Credit
DiPerna	Indiana	Choice Scholarship Program/School Scholarship Tax Credit
Catt and Kristof	Kansas	Tax Credit for Low Income Students Program
Catt and Cheng	Arizona	All four tax-credit scholarship programs**
Department of Revenue Administration	New Hampshire	Education Tax Credit Program
Catt and Rhinesmith	Indiana	School Scholarship Tax Credit
Kelly and Scafidi	Georgia	Qualified Education Expense Tax Credit
Howell and Peterson	Dayton, OH	
Howell and Peterson	New York, NY	
Howell and Peterson	National	
Howell and Peterson	Washington, D.C.	
Peterson and Campbell	National	
Greene	Charlotte, NC	
Peterson, Campbell, and West	San Francisco, CA	
Peterson, Myers, and Howell	San Antonio, TX	
Weinschrott and Kilgore	Indianapolis, IN	

ESA=Education Savings Account; V=Voucher; TCS=Tax-Credit Scholarship; P=Private Scholarship

Notes: This table shows all studies using all methods. If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."

Program Type	Year	Any Positive Effect	No Visible Effect	Any Negative Effect	RCT
ESA	2021	✓			
ESA	2019	✓		X	
ESA	2016	✓			
ESA	2013	✓			
V	2021	✓			
V	2018	✓			
V	2017	✓			
V	2017	✓			
V	2015		○		
V	2015	✓			✓
V	2008	✓			
V	2006	✓			
V	2003	✓			
V	2000	✓			✓
V	1999	✓			
V	1999	✓			
V	1998	✓			
V/TCS*	2016	✓			
V/TCS†	2014	✓			
TCS	2022	✓			
TCS	2019			X	
TCS	2018	✓			
TCS	2017	✓			
TCS	2013	✓			
P	2002	✓			✓
P	2002	✓			✓
P	2002	✓			✓
P	2002	✓			✓
P	2001	✓			✓
P	2001	✓			✓
P	2001	✓			
P	1999	✓			
P	1998	✓			

\*The report combined voucher and tax-credit scholarship parents into "Choice Parents," although anyone could calculate voucher and tax-credit scholarship results based on data tables in the report appendices.

\*\* Results could not be broken out by program and reflect responses by parents with children attending private schools via any of Arizona's four tax-credit scholarship programs.

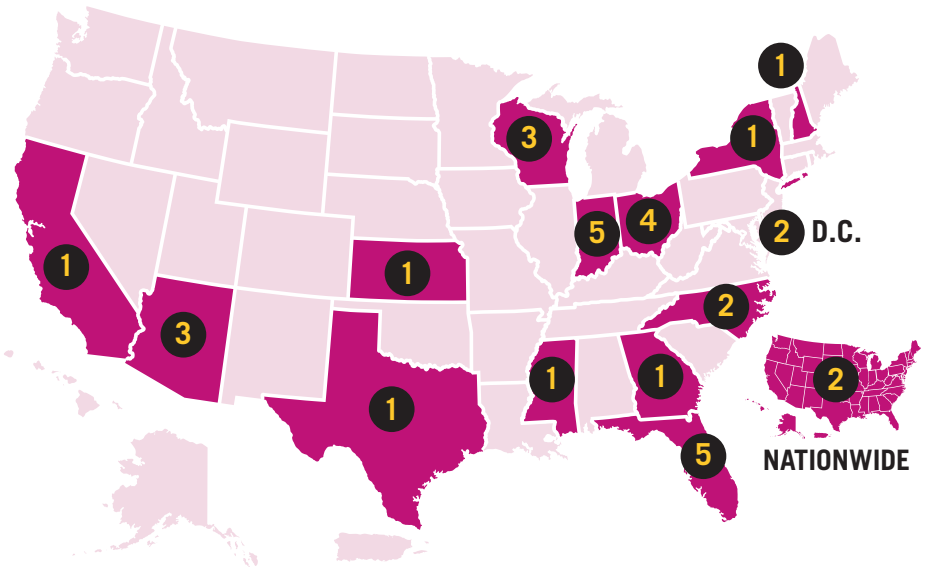
†The report combined voucher and tax-credit scholarship parents into "Choice Parents" for all information made publicly available.

# About the Methods

Studies in this section survey parents of participating students to gauge satisfaction with their chosen private school compared to their previous school or compared to non-participant satisfaction levels.

Some of the programs allow for a random assignment approach, but most parent satisfaction studies are observational—meaning differences are compared within or across groups that were not randomly assigned. Our inclusion criteria require at least 10 studies based on random assignment in order to exclude all nonexperimental studies. Given that eight studies on parent satisfaction use random assignment, we include studies that use nonexperimental methods.

## Number of Studies on Parent Satisfaction by Location



# Additional Research Context

Evan Rhinesmith of Basis Policy Research conducted a systematic review to synthesize the literature on parent satisfaction with private school choice programs. Participating in private school choice programs leads to higher levels of parent satisfaction, he finds. Rhinesmith states, “If methodology is behind the results, we would expect the experimental and observational studies to differ dramatically in their results. They do not. Whether students enrolled in their choice program through lottery or self-sorted into their private school of choice, the results have shown that providing choice in education leads to higher levels of parent satisfaction.”<sup>6</sup>

## Citations of Studies in Summary Table

Listed in chronological order, starting with most recent

Andrew D. Catt and John M. Kristof (2022), *Families’ Schooling Experiences in Kansas, EdChoice and Kansas Policy Institute*, retrieved from: <https://www.edchoice.org/wp-content/uploads/2022/11/Families-Schooling-Experiences-in-Kansas.pdf>

Shannon Varga et al. (2021), *Choices and Challenges: Florida Parents’ Experiences with the State’s McKay and Gardiner Scholarship Programs for Students with Disabilities*, Boston University, CERES Institute for Children & Youth, retrieved from: [https://ceresinstitute.org/wp-content/uploads/2021/04/ChoicesChallenges\\_REPORT.pdf](https://ceresinstitute.org/wp-content/uploads/2021/04/ChoicesChallenges_REPORT.pdf)

Andrew D. Catt and Albert Cheng (2019), *Families’ Experiences on the New Frontier of Educational Choice: Findings from a Survey of K–12 Parents in Arizona*, retrieved from EdChoice website: <https://www.edchoice.org/wp-content/uploads/2019/05/2019-4-Arizona-Parent-Survey-by-Andrew-Catt-and-Albert-Chang.pdf>

New Hampshire Department of Revenue Administration (2018), *Scholarship Organization Report: Giving and Going Alliance*, retrieved from <https://www.revenue.nh.gov/assistance/documents/giving-and-going-alliance.pdf> ; New Hampshire Department of Revenue Administration (2018), *Scholarship Organization Report: Children’s Scholarship Fund*, retrieved from <https://www.revenue.nh.gov/quick-links/documents/childrens-scholarship-fund-ed-5.pdf>

Legislative Audit Bureau (2018), *Special Needs Scholarship Program* (Report 18-6), retrieved from <https://legis.wisconsin.gov/lab/media/2753/18-6full.pdf>

Andrew D. Catt and Evan Rhinesmith (2017), *Why Indiana Parents Choose: A Cross-Sector Survey of Parents' Views in a Robust School Choice Environment*, retrieved from EdChoice website: <https://www.edchoice.org/wp-content/uploads/2017/09/Why-Indiana-Parents-Choose-1.pdf>

Anna J. Egalite, Ashley Gray, and Trip Stallings (2017), *Parent Perspectives: Applicants to North Carolina's Opportunity Scholarship Program Share Their Experiences* (OS Evaluation Report 2), retrieved from North Carolina State University website: <https://ced.ncsu.edu/elphd/wp-content/uploads/sites/2/2017/07/Parent-Perspectives.pdf>

Andrew D. Catt and Evan Rhinesmith (2016), *Why Parents Choose: A Survey of Private School and School Choice Parents in Indiana*, retrieved from EdChoice website: <https://www.edchoice.org/wp-content/uploads/2017/03/Why-Parents-Choose-A-Survey-of-Private-School-and-School-Choice-Parents-in-Indiana-by-Andrew-D.-Catt-and-Evan-Rhinesmith.pdf>

Brett Kittredge (2016), *The Special Needs ESA: What Families Enrolled in the Program Are Saying After Year One*, retrieved from Empower Mississippi website: <http://empowerms.org/wp-content/uploads/2016/12/ESA-Report-final.pdf>

David B. Black (2015), *School Choice and Florida's McKay Scholarship Program for Students with Disabilities: An Analysis of Parental Satisfaction* [dissertation], Florida Atlantic University, retrieved from [http://fau.digital.flvc.org/islandora/object/fau%3A31570/datastream/OBJ/view/School\\_choice\\_and\\_Florida\\_\\_\\_s\\_McKay\\_scholarship\\_program\\_for\\_students\\_with\\_disabilities\\_\\_an\\_analysis\\_of\\_parental\\_satisfaction.pdf](http://fau.digital.flvc.org/islandora/object/fau%3A31570/datastream/OBJ/view/School_choice_and_Florida___s_McKay_scholarship_program_for_students_with_disabilities__an_analysis_of_parental_satisfaction.pdf)

Paul DiPerna (2015), *Why Indiana Voucher Parents Choose Private Schools*, retrieved from EdChoice website: <http://www.edchoice.org/wp-content/uploads/2015/07/Indiana-Survey.pdf>

Brian Kisida and Patrick Wolf (2015), Customer Satisfaction and Educational Outcomes: Experimental Impacts of the Market-Based Delivery of Public Education. *International Public Management Journal*, 18(2), pp. 265–285, <https://dx.doi.org/10.1080/10967494.2014.996629>

Jonathan Butcher and Jason Bedrick (2013), *Schooling Satisfaction: Arizona Parents' Opinions on Using Education Savings Accounts*, retrieved from EdChoice website: <https://www.edchoice.org/wp-content/uploads/2013/10/SCHOOLING-SATISFACTION-Arizona-Parents-Opinions-on-Using-Education-Savings-Accounts-NEW.pdf>

James P. Kelly, III, and Benjamin Scafidi (2013), *More Than Scores: An Analysis of Why and How Parents Choose Private Schools*, retrieved from EdChoice website: <http://www.edchoice.org/wp-content/uploads/2015/07/More-Than-Scores.pdf>

John F. Witte, Patrick J. Wolf, Joshua M. Cowen, David J. Fleming, and Juanita Lucas-McLean (2008), *MPCP Longitudinal Educational Growth Study: Baseline Report* (SCDP Milwaukee Evaluation Report 5), retrieved from University of Arkansas Department of Education Reform website: <https://scholarworks.uark.edu/scdp/42/>

Virginia R. Weidner and Carolyn D. Herrington (2006), Are Parents Informed Consumers: Evidence from the Florida McKay Scholarship Program, *Peabody Journal of Education*, 81(1), pp. 27–56, [https://doi.org/10.1207/S15327930pje8101\\_3](https://doi.org/10.1207/S15327930pje8101_3)

Jay P. Greene and Greg Forster (2003), *Vouchers for Special Education Students: An Evaluation of Florida's McKay Scholarship Program* (Civic Report 38), retrieved from Manhattan Institute website: [https://media4.manhattan-institute.org/pdf/cr\\_38.pdf](https://media4.manhattan-institute.org/pdf/cr_38.pdf)

William G. Howell and Paul E. Peterson (2002), *The Education Gap: Vouchers and Urban Schools*, retrieved from JSTOR website: <https://www.jstor.org/stable/10.7864/j.ctt128086>

Jay P. Greene (2001), Vouchers in Charlotte. *Education Next*, 1(2), pp. 55–60, retrieved from Education Next website: <https://www.educationnext.org/vouchersincharlotte/>

Paul E. Peterson and David E. Campbell (2001), *An Evaluation of the Children's Scholarship Fund* (PEPG 01-01), retrieved from <https://eric.ed.gov/?id=ED453308>

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Kim K. Metcalf (1999), *Evaluation of the Cleveland Scholarship and Tutoring Grant Program: 1996-1999*, retrieved from <https://cdm16007.contentdm.oclc.org/digital/collection/p267401ccp2/id/1948>

Paul E. Peterson, William G. Howell, and Jay P. Greene (1999), *An Evaluation of the Cleveland Voucher Program After Two Years*, retrieved from <https://eric.ed.gov/?id=ED451260>

Paul E. Peterson, David Myers, and William G. Howell (1999), *An Evaluation of the Horizon Scholarship Program in the Edgewood Independent School district, San Antonio, Texas: The First Year*, retrieved from <https://eric.ed.gov/?id=ED441274>

Jay P. Greene, William G. Howell, and Paul E. Peterson (1998), Lessons from the Cleveland Scholarship Program. In Paul E. Peterson and Bryan C. Hassel (Eds.), *Learning from School Choice* (pp. 357–392), retrieved from University of Arkansas Department of Education Reform website: <https://cpb-us-e1.wpmucdn.com/wordpressua.uark.edu/dist/9/451/files/2018/04/Lessons-From-Cleveland-Scholarship-Program-1097-1d3b3cd.pdf>

David J. Weinschrott and Sally B. Kilgore (1998), Evidence from the Indianapolis Voucher Program. In Paul E. Peterson and Bryan C. Hassel (Eds.), *Learning from School Choice* (pp. 307–334), Brookings Institution, Washington D.C.: <https://journals.sagepub.com/doi/10.1177/08904802016003004?icid=int.sj-abstract.citing-articles.39>





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# **PUBLIC SCHOOL STUDENTS' TEST SCORES**

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These studies examine the competitive effects of private school choice programs on public school students. They study whether a private school choice program affects the test scores of students who remain in public schools.

Many people want to know if these programs leave students who remain in public schools worse off. School choice programs might divert resources or the most capable students away from public schools, they reason, harming the children who are “left behind.” What does the evidence say?

Fears of harm to public school students appear to be overstated. In fact, there is compelling evidence that public school students experience modest test score gains after private school choice programs are introduced or expanded.

## Summary of Studies

	Total Number of Studies	Any Positive Effect	No Visible Effect	Any Negative Effect
Public School Students' Test Scores	29	26	1	2

These studies examined nine voucher programs, one tax-credit scholarship program, and one privately funded scholarship program across eight states and Washington, D.C. Of the 29 studies examining the effects of private school choice programs on public school test scores, 26 found positive effects, one study found no visible effect, and two studies found negative effects.

## About the Methods

We include studies that use nonexperimental methods given that no studies on competitive effects use random assignment.

An important concern with nonexperimental methods is that public schools that face greater competitive pressure from more expansive private school choice programs may be systematically different than public schools that do not. Researchers who conduct these studies attempt to use statistical techniques to address these concerns.

There are several ways that researchers estimate the effects of private school choice programs on public school students' test scores.

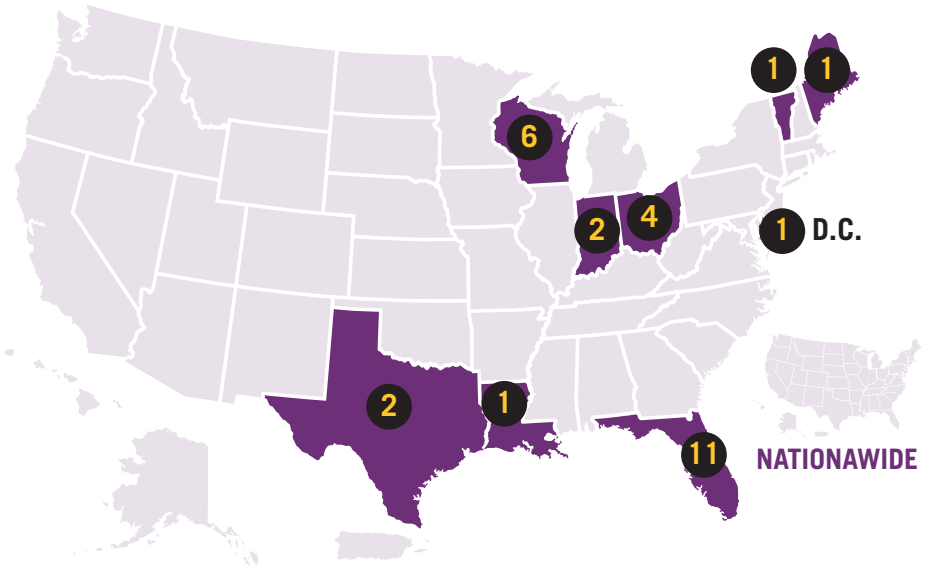
# Academic Outcomes of Public Schools From All Empirical Studies

Author(s)	Location	Program Type	Year	Program Name
Lavertu and Gregg	Ohio	V	2022	Educational Choice Scholarship Program
Canbolat	Indiana	V	2021	Choice Scholarship Program
Egalite and Mills	Louisiana	V	2021	Louisiana Scholarship Program
Egalite and Catt	Indiana	V	2020	Choice Scholarship Program
Figlio and Karbownik	Ohio	V	2016	Educational Choice Scholarship Program
Bowen and Trivitt	Florida	V	2014	Opportunity Scholarship Program*
Chakrabarti	Florida	V	2013	Opportunity Scholarship Program*
Carr	Ohio	V	2011	Educational Choice Scholarship Program
Winters and Greene	Florida	V	2011	John M. McKay Scholarships for Students with Disabilities Program
Mader	Milwaukee, WI	V	2010	Milwaukee Parental Choice Program
Greene and Marsh	Milwaukee, WI	V	2009	Milwaukee Parental Choice Program
Chakrabarti	Milwaukee, WI	V	2008	Milwaukee Parental Choice Program
Forster	Ohio	V	2008	Educational Choice Scholarship Program
Forster	Florida	V	2008	Opportunity Scholarship Program*
Carnoy et al.	Milwaukee, WI	V	2007	Milwaukee Parental Choice Program
Greene and Winters	Washington, D.C.	V	2007	Opportunity Scholarship Program
Figlio and Rouse	Florida	V	2006	Opportunity Scholarship Program*
West and Peterson	Florida	V	2006	Opportunity Scholarship Program*
Greene and Winters	Florida	V	2004	Opportunity Scholarship Program*
Greene and Forster	Milwaukee, WI	V	2002	Milwaukee Parental Choice Program
Hammons	Maine	V	2002	Town Tuitioning Program
Hammons	Vermont	V	2002	Town Tuitioning Program
Hoxby	Milwaukee, WI	V	2002	Milwaukee Parental Choice Program
Greene	Florida	V	2001	Opportunity Scholarship Program*
Figlio et al.	Florida	TCS	2023	Florida Tax Credit Scholarship Program
Figlio and Hart	Florida	TCS	2014	Florida Tax Credit Scholarship Program
Rouse et al.	Florida	TCS	2013	Florida Tax Credit Scholarship Program
Gray, Merrifield, and Adzima	San Antonio, TX	P	2016	
Greene and Forster	San Antonio, TX	P	2002	

V=Voucher; TCS=Tax-credit scholarship; P=Private scholarship



# Number of Studies on Public School Test Scores by Location



For example, they may measure competition by estimating the percentage of students in a district or public school who are eligible for a choice program, with the idea being that public schools with a greater portion of students eligible for a program face greater competition because they stand to lose more students than if a smaller proportion of their students were eligible. They may also account for distance by measuring the proximity between a public school and the nearest private school. Some studies also use density measures, which count the number of private schools within a given radius or distance from the public school.

## Additional Research Context

Several systematic reviews have synthesized the competitive effects literature for private school choice programs.<sup>7</sup> All of these systematic reviews acknowledge that private school choice programs tend to induce public schools to improve. Moreover, a team of researchers conducted a meta-analysis on the competitive effects of choice programs and concluded, “In general, competition resulting from school-choice policies does have a small positive effect on student achievement. The lack of an overall negative impact on student outcomes might ease critics’ concerns that competition will hurt those students ‘left behind’ due to school-choice policies.”<sup>8</sup> The

evidence suggests that choice improves outcomes for students in public schools, and the improvement increases with the intensity of competition. There is no evidence of harm to public schools.

## Citations of Studies in Summary Table

Listed in chronological order, starting with most recent

David N. Figlio, Cassandra M. D. Hart, and Krzysztof Karbownik (2023), Effects of Maturing Private School Choice Programs on Public School Students, *American Economic Journal: Economic Policy*, 15(4), pp. 255-294, <https://doi.org/10.1257/pol.20210710>

Stéphane Lavertu and John J. Gregg (2022), *The Ohio EdChoice Program's Impact on School District Enrollments, Finances, and Academics*, Thomas B. Fordham Institute, retrieved from Thomas B. Fordham website: <https://fordhaminstitute.org/sites/default/files/publication/pdfs/edchoice-impact-report-12-14-22-web-final.pdf>

Anna J. Egalite and Jonathan N. Mills (2021), Competitive Impacts of Means-Tested Vouchers on Public School Performance: Evidence from Louisiana, *Education Finance and Policy*, 16(1), pp. 66-91, [https://doi.org/10.1162/edfp\\_a\\_00286](https://doi.org/10.1162/edfp_a_00286) [https://www.mitpressjournals.org/doi/abs/10.1162/edfp\\_a\\_00286](https://www.mitpressjournals.org/doi/abs/10.1162/edfp_a_00286)

Yusuf Canbolat (2021), The long-term effect of competition on public school achievement: Evidence from the Indiana Choice Scholarship Program, *Education Policy Analysis Archives*, 29(97), <https://doi.org/10.14507/epaa.29.6311>

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David Figlio and Krzysztof Karbownik (2016), *Evaluation of Ohio's EdChoice Scholarship Program: Selection, Competition, and Performance Effects*, retrieved from Thomas B. Fordham Institute website: [https://fordhaminstitute.org/sites/default/files/publication/pdfs/FORDHAM-Ed-Choice-Evaluation-Report\\_online-edition.pdf](https://fordhaminstitute.org/sites/default/files/publication/pdfs/FORDHAM-Ed-Choice-Evaluation-Report_online-edition.pdf)

Nathan L. Gray, John D. Merrifield, and Kerry A. Adzima (2016), A Private Universal Voucher Program's Effects on Traditional Public Schools. *Journal of Economics and Finance*, 40(2), pp. 319–344, <https://dx.doi.org/10.1007/s12197-014-9309-z>

Daniel H. Bowen and Julie R. Trivitt (2014), Stigma Without Sanctions: The (Lack of) Impact of Private School Vouchers on Student Achievement, *education policy analysis archives*, 22(87), <https://dx.doi.org/10.14507/epaa.v22n87.2014>

David Figlio and Cassandra M.D. Hart (2014), Competitive Effects of Means-Tested School Vouchers. *American Economic Journal: Applied Economics*, 6(1), pp. 133–156, <https://www.aeaweb.org/articles?id=10.1257/app.6.1.133>

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# **CIVIC VALUES AND PRACTICES**

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Instilling common democratic and civic values is a core purpose of and argument for public funding of K–12 education. Historically, elementary and secondary schools have had an important role leveling the playing field for students when it comes to socialization around shared civic values and activities. This function may be becoming more important as the United States is increasingly diverse with each oncoming generation of Americans.

The research on private school choice programs shows they can help establish and strengthen civic norms and practices that are foundational to sustaining good citizenship, civil society, and representative democracy.

The studies examined in this section analyze whether enrolling in a private school choice program has an effect on students’ civic values or how students exhibit civic practices. Such values and practices include: tolerance for the rights of others, civic knowledge, civic participation, volunteerism, social capital, civic skills, voter registration, voter turnout, and patriotism. Studies that assess criminal activity tendencies are also considered for this section.

## Summary of Studies

	Total Number of Studies	Any Positive Effect	No Visible Effect	Any Negative Effect
Civic Values and Practices	11	6	5	0

These studies examined two voucher programs and at least three privately funded scholarship programs across four states and Washington, D.C..

Of the 11 studies examining the effects of private school choice programs on civic values and practices, six found positive effects, five studies have found no visible effect, and zero studies found negative effects.

## About the Methods

Researchers rely primarily on surveys when they examine how private schools in choice programs differ, if at all, from public schools in how well they promote civic values. They compare measured outcomes between students participating in private school choice programs and similar students in public schools. Some studies compared students who applied to programs and were randomly assigned via lottery to treatment and control groups.

# Civic Values and Practices from All Empirical Studies

Author(s)	Location	Program Type	Year	Program Name
DeAngelis and Wolf	Milwaukee, WI	V	2020	Milwaukee Parental Choice Program
DeAngelis and Wolf	Milwaukee, WI	V	2018	Milwaukee Parental Choice Program
Mills et al.	Louisiana	V	2016	Louisiana Scholarship Program
Fleming, Mitchell, and McNally	Milwaukee, WI	V	2014	Milwaukee Parental Choice Program
Fleming	Milwaukee, WI	V	2014	Milwaukee Parental Choice Program
Carlson, Chingos, and Campbell	New York, NY	P	2017	
Bettinger and Slonim	Toledo, OH	P	2006	
Howell and Peterson	Washington, D.C.	P	2002	
Campbell	National	P	2002	
Peterson and Campbell	Nationwide	P	2001	
Wolf, Peterson, and West	Washington, D.C.	P	2001	

V = Voucher; P = Private Scholarship

Studies researching tolerance observe the effect of students’ tolerance for others before and after using school choice, largely via survey questionnaires that gauge whether students recognize the views and rights of groups with which they disagree. Tolerance is defined as a willingness to extend legal protections to groups with whom one has disagreements. Civic engagement is measured by political participation, voting, giving to charity, volunteering, and other indicators.

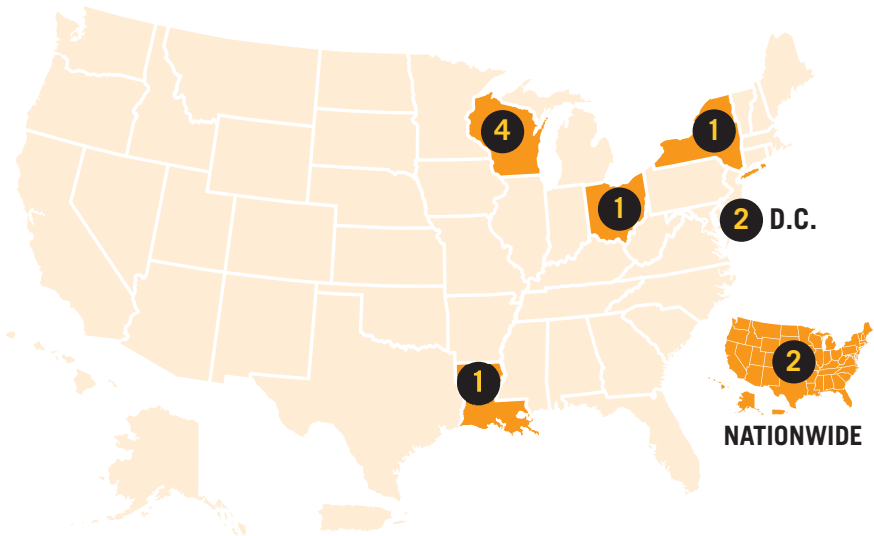
For the purposes of reporting civic outcomes, we consider only participants in voucher and private scholarship programs. Most studies of these programs have been peer reviewed and published in academic journals. Two forthcoming journal articles, an unpublished manuscript, and a conference presentation are also included in this review. This review includes random assignment and nonexperimental studies.

Though we might want to separate social order and criminal activity studies into two distinct sections, only one such study exists to date, so this research area has been consolidated here. This study matched students who participated in Milwaukee’s voucher program with students in the Milwaukee Public School district. It examined whether students who used vouchers were more likely to engage in criminal activity than their matched peers.

	Any Positive Effect	No Visible Effect	Any Negative Effect	RCT
	✓			
		○ ○		✓
	✓ ✓			
		○		✓
	✓			✓
		○		✓
	✓			✓
		○		✓
	✓			✓

Notes: This table shows all empirical studies using all methods. If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."

## Number of Studies on Civic Values and Practices by Location



## Additional Research Context

Dany Shakeel, Patrick Wolf, Alison Johnson, Mattie Harris, and Sarah Morris conducted a meta-analysis, or “statistical study of studies,” to identify any relationship between private schooling and measures of four fundamental civic outcomes: political tolerance, political participation, civic knowledge and skills, and voluntarism and social capital.<sup>9</sup> The central finding from the study is that private schooling, on average, boosted any civic outcome by 0.055 standard deviations relative to public schooling. Put another way, “political tolerance, political participation, civic knowledge and skills, and voluntarism and social capital.”<sup>10</sup> Thus, data do not support concerns that private schools inflict harmful civic effects on students.

Corey DeAngelis published in 2017 a systematic review of the civic effects of school choice programs. While others have compiled civic outcomes research of other types of schooling, including charter schools, DeAngelis’s review is the only one that exclusively examines private school choice. He found generally null to positive results of private school choice programs on students’ tolerance, null to positive results for civic engagement, and positive results for social order. For social order, DeAngelis reviewed studies that examine the levels of criminal activity of school choice participants.<sup>11</sup>

## Citations of Studies in Summary Table

Listed in chronological order, starting with most recent

Corey A. DeAngelis and Patrick J. Wolf (2020), Private School Choice and Character: Evidence from Milwaukee, *The Journal of Private Enterprise*, 35(3), pp. 13-48, [http://journal.apee.org/index.php/Parte3\\_2020\\_Journal\\_of\\_Private\\_Enterprise\\_Vol\\_35\\_No\\_3\\_Fall](http://journal.apee.org/index.php/Parte3_2020_Journal_of_Private_Enterprise_Vol_35_No_3_Fall)

Corey A. DeAngelis and Patrick J. Wolf (2018), *Will Democracy Endure Private School Choice? The Effect of the Milwaukee Parental Choice Program on Adult Voting Behavior*, <https://dx.doi.org/10.2139/ssrn.3177517>

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Paul E. Peterson and David E. Campbell (2001), *An Evaluation of the Children's Scholarship Fund* (PEPG 01-03), retrieved from <https://eric.ed.gov/?id=ED453308>

Patrick J. Wolf, Paul E. Peterson, and Martin R. West (2001), *Results of a School Voucher Experiment: The Case of Washington, D.C. after Two Years* (PEPG 01–05), retrieved from <https://files.eric.ed.gov/fulltext/ED457272.pdf>

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# **RACIAL / ETHNIC INTEGRATION**

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Measuring school choice's impact on integration is both challenging and very important. Research in this area is essential because of the longstanding history and concern about segregation in America's public and private schools.

It is important to keep in mind that the public education system in the U.S. has led to much sorting across schools by family income level.<sup>12</sup> Furthermore, racial sorting in public schools has lagged improvements in neighborhood integration or even increased over the past few decades.<sup>13</sup> Given the strong link between neighborhoods and residential assignment, it is puzzling to see neighborhoods become more integrated while public schools have become more segregated. Is school choice to blame? That question is worth investigating.

A number of issues and questions must be tackled when measuring the impact of school choice programs on integration.

- **What is the standard for determining if a school becomes more or less integrated?**

Is a school integrated when it matches the demographic characteristics of its neighborhood? The city? The county? The state? This matters because picking different comparison groups can yield wildly different findings.<sup>14</sup>

- **Which perspective should be used to determine if a choice program increases or decreases segregation?**

When a student moves from one school to another, he or she affects the racial composition of both the former school and the new school. Is it a good thing when a student can attend a more integrated school? What about the children left behind? Similarly, if the student goes to a more segregated school, that movement could make their old school more integrated. What is a "positive" finding in this scenario?

- **What unit of analysis is appropriate?**

Researchers can usually look only at school-level segregation. But what happens once a student walks through the school doors? Are classrooms integrated, or are children of different races tracked into different courses? Is the lunchroom? Are extra-curricular activities? Conceivably a putatively "integrated" school could still be segregated in practice. Data alone simply can't sufficiently answer these research questions.

In this section, we consider studies that examine the effect of school choice programs on racial and ethnic diversity in public and private schools. Since the late 1990s researchers have analyzed the impacts of school voucher programs.

Because researchers' methods vary, we advise some caution and encourage further exploration of the individual studies. We have tried to be as transparent as possible in explaining how the researchers chose to cope with the above questions. That said, research conducted to date shows that school choice programs promote integration.

## Summary of Studies

	Total Number of Studies	Any Positive Effect	No Visible Effect	Any Negative Effect
Racial/Ethnic Integration	8	7	1	0

These studies examined five voucher programs across three states and Washington, D.C. Of the eight studies, seven found positive effects on integration in schools. One was unable to detect any effects, and none found negative effects.

## About the Methods

The studies in this section use a variety of methods. Most studies lead to descriptive results. These measures of integration compare the following, for both public and private schools:

- The racial/ethnic composition of public and private schools and the racial/ethnic composition of the choice program's metropolitan area;
- The racial/ethnic composition of public and private schools before and after the introduction or expansion of a choice program;
- The racial/ethnic composition of public and private schools, assuming choice students had enrolled in their district schools instead;
- The racial/ethnic composition of classrooms in public and private schools compared with the racial composition of the nation's general population; and
- The shares of public and private schools that are racially homogenous (usually defined as a school with at least 90% of student enrollment that is either white or minority).

Methods that move a step closer to providing causal evidence use student-level data over time. They identify the effect that choice program participants had on the racial/ethnic composition of originating and receiving schools after they participated in the choice program. The table below depicts the four possible outcomes.

## Segregation Effects, Possible Outcomes After Student Transferred via Choice Program

	Receiving school became MORE integrated	Receiving school became LESS integrated
Originating school became MORE integrated	Positive	Mixed
Originating school became LESS integrated	Mixed	Negative

A transfer that results in both schools becoming more integrated is considered positive while a transfer that leaves both schools less integrated is considered negative. Two of these effects are mixed (i.e., a student transfers and the original school becomes more integrated while the receiving school becomes less integrated, or vice versa).

We include only studies of private school choice programs in the United States, both publicly funded and privately funded. Given that no studies on integration effects use random assignment, the studies we include here use nonexperimental methods. We include empirical studies only and do not include simulation studies.

## Additional Research Context

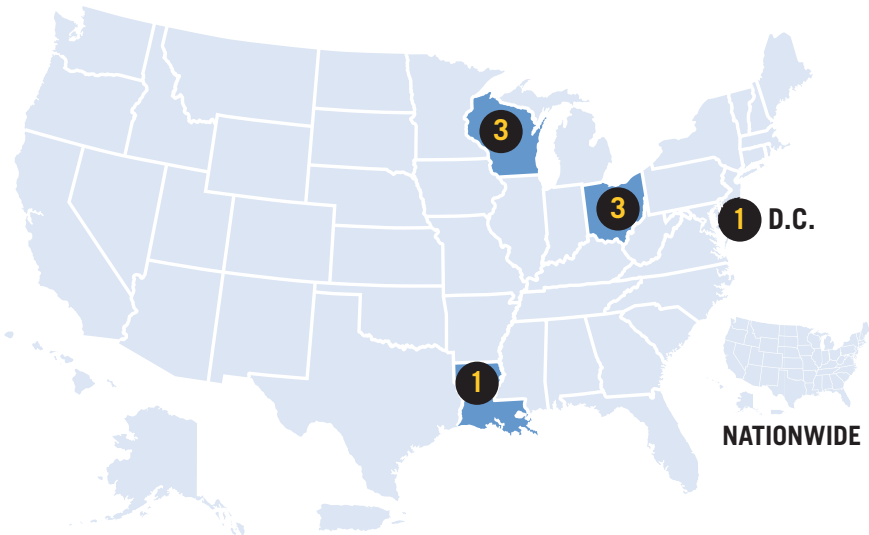
Elise Swanson of the University of Arkansas surveyed the literature on the effects various school choice sectors (magnet, charters, and private) had on integration in schools. In her review of studies on voucher programs, she reviewed eight studies, finding that seven studies found voucher programs improved school integration and one study was unable to detect any effects. She notes that “It is perhaps unsurprising that traditional public schools exhibit, to this day, high levels of racial segregation, and that choice programs, including vouchers, that decouple the link between address and school actually increase racial integration.”<sup>15</sup>

# Racial Integration From All Empirical Studies

Author(s)	Location	Program Type	Year	Program Name
Lavertu and Gregg	Ohio	V	2022	EdChoice Scholarship Program
Egalite, Mills, and Wolf	Louisiana	V	2017	Louisiana Scholarship Program
Greene, Mills, and Buck	Milwaukee, WI	V	2010	Milwaukee Parental Choice Program
Greene and Winters	Washington, D.C.	V	2007	Opportunity Scholarship Program
Forster	Milwaukee, WI	V	2006	Milwaukee Parental Choice Program
Forster	Cleveland, OH	V	2006	Cleveland Scholarship Program
Fuller and Mitchell	Milwaukee, WI	V	2000	Milwaukee Parental Choice Program
Greene	Cleveland, OH	V	1999	Cleveland Scholarship Program

V=Voucher

## Number of Studies on Racial/Ethnic Integration by Location



	Any Positive Effect	No Visible Effect	Any Negative Effect
	✓		
	✓		
		○	
	✓		
	✓		
	✓		
	✓		
	✓		

Notes: This table shows all empirical studies using all methods; the total effect on segregation in all schools is referenced. Table excludes studies that do not adequately define segregation or fail to make appropriate comparisons. For example, comparing the racial makeup of a given school to the makeup of a larger administrative unit such as a school district or municipality can be misleading and fails to directly measure the effect of introducing a private school choice program. If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."

## Citations of Studies in Summary Table

Listed in chronological order, starting with most recent

Stéphane Lavertu and John J. Gregg (2022), *The Ohio EdChoice Program's Impact on School District Enrollments, Finances, and Academics*, Thomas B. Fordham Institute, retrieved from Thomas B. Fordham Institute website: <https://fordhaminstitute.org/sites/default/files/publication/pdfs/edchoice-impact-report-12-14-22-web-final.pdf>

Anna J. Egalite, Jonathan N. Mills, and Patrick J. Wolf (2017), *The Impact of Targeted School Vouchers on Racial Stratification in Louisiana Schools*. *Education and Urban Society*, 49(3), pp. 271–296, <https://dx.doi.org/10.1177/0013124516643760>

Jay P. Greene, Jonathan N. Mills, and Stuart Buck (2010), *The Milwaukee Parental Choice Program's Effect on School Integration* (School Choice Demonstration Project Report 20), retrieved from University of Arkansas Department of Education Reform website: <https://scholarworks.uark.edu/scdp/55/>

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Greg Forster (2006), *Segregation Levels in Milwaukee Public Schools and the Milwaukee Voucher Program*. *School Choice Issues in the State*, retrieved from EdChoice website: <http://www.edchoice.org/wp-content/uploads/2015/09/Segregation-Levels-in-Milwaukee-Public-Schools-and-the-Milwaukee-Voucher-Program.pdf>

Howard L. Fuller and George A. Mitchell (2000), *The Impact of School Choice on Integration in Milwaukee Private Schools*. *Current Education Issues* 2000-02, retrieved from <https://files.eric.ed.gov/fulltext/ED443939.pdf>

Jay P. Greene (1999), *Choice and Community: The Racial, Economic and Religious Context of Parental Choice in Cleveland*, retrieved from <https://files.eric.ed.gov/fulltext/ED441928.pdf>





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# FISCAL EFFECTS

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These studies examine the fiscal effect that private school choice programs have on taxpayers, state budgets and public school districts. Not surprisingly, studies of school choice address fiscal effects more than any other topic.

One of the most common criticisms levied against school choice is that these programs “drain” or “siphon” resources from public schools. A national survey found that 29% of respondents who opposed to ESAs cited concerns about diverting funding away from public schools as the most important reason for their opposition.<sup>16</sup> In light of such concerns, policymakers often want to better understand the fiscal effects of these programs.

The fiscal question is a complicated one. School funding comes from several different sources, including federal, state, and local governments. School funding formulas are complex and often hard to understand. The distribution of the fiscal effects among different taxpayers and public school districts can be highly uneven – programs may generate very different fiscal effects for state taxpayers compared to the fiscal effects that school districts experience.

It is common to wonder whether school choice programs will hurt the finances of public schools. Less often considered, however, are the cost savings that accrue when students leave the public K–12 system. When students leave a public school by using vouchers, the school gets less funding. But it also has fewer students to educate, and thus, lower costs.

New to this edition, The Georgia Department of Audits & Accounts conducted a fiscal analysis of the Georgia Qualified Education Expense Tax Credit (QEEC) Program. The analysis compares the amount of tax credit disbursements from the state for the program with expenditure reductions for public schools from students who switched from public schools to the program. The analysis concluded that “forgone tax revenue would be completely offset by expenditure reductions if 67% of scholarship recipients would have attended public school without the scholarship (i.e., the break-even point). If 90% of scholarship recipients would have attended public school, as empirical studies of other states’ programs have found, then the QEEC would result in a state cost savings of \$28 million. The QEEC also results in local cost savings, regardless of the switcher rate.”<sup>17</sup>

The body of fiscal analyses on private school choice programs examined in this section finds that private school choice programs generate positive fiscal benefits for taxpayers and school districts.

# Summary of Studies

	Total Number of Studies	Any Positive Effect	No Visible Effect	Any Negative Effect
Fiscal Effects	75	69	5	5

Analyses reviewed here cover 24 voucher programs, 18 tax-credit scholarship programs, three education savings account programs, and one privately funded scholarship program across 23 states and Washington, D.C. Of the 75 studies on the fiscal effects of individual private school choice programs, 69 found net savings for taxpayers. Five found that programs were cost-neutral, and five studies estimated that a program generated net costs. Four of these studies estimated a range of fiscal effects and reported net costs in the short run and net savings in the long run.

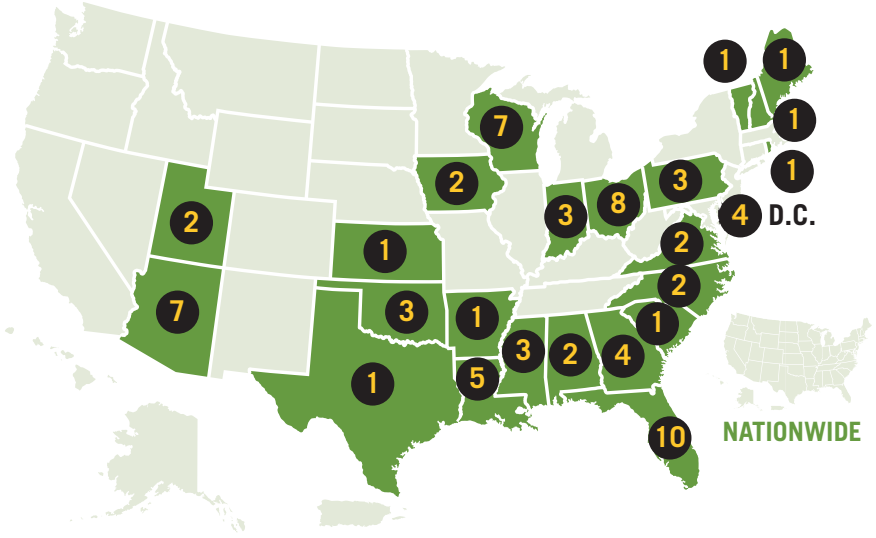
## About the Methods

Researchers and fiscal analysts have used a variety of accounting techniques to estimate the fiscal effects of private school choice programs, including effects on different groups. Any fiscal analysis should account for switchers, or students who would likely enroll in a public school if they did not receive any financial assistance from the choice program being studied. It is not accurate to assume that all students using school choice programs would attend private schools even without access to the program.

Because it is impossible to know with certainty how many students are switchers, some analyses also report “break-even switcher rates” for program, or the share of program participants who must be switchers for a program to be cost-neutral. Break-even switcher rates are intended to give policymakers a sense about a program’s fiscal impact, i.e., if it is likely to generate net savings or net costs.

We review all fiscal analyses of operational U.S. school choice programs—both publicly funded and privately funded—that make a reasonable attempt to account for both costs and savings associated with switchers. We exclude any analyses that report estimates only for the cost of scholarship. We do not consider fiscal analyses of school choice bills, such as legislative fiscal notes.

# Number of Studies on Fiscal Effects On Taxpayers and Public Schools by Location



# Fiscal Effects on Taxpayers and Public Schools From All Empirical Studies

Author(s)	Location	Program Type	Year	Program Name
Lueken	Arizona	ESA	2021	Empowerment Scholarship Accounts
Lueken	Florida	ESA	2021	Family Empowerment Scholarship Program
Lueken	Mississippi	ESA	2021	Equal Opportunity for Students with Special Needs Program
PEER Mississippi#	Mississippi	ESA	2020	Equal Opportunity for Students with Special Needs Program
Lavertu and Gregg	Ohio	V	2022	Educational Choice Scholarship Program
Faulk and Hicks	Indiana	V	2021	Choice Scholarship Program
Lueken	Washington, D.C.	V	2021	Opportunity Scholarship Program
Lueken	Florida	V	2021	John M. McKay Scholarships for Students with Disabilities Program
Lueken	Georgia	V	2021	Georgia Special Needs Scholarship Program
Lueken	Indiana	V	2021	Choice Scholarship Program
Lueken	Louisiana	V	2021	Louisiana Scholarship Program
Lueken	Louisiana	V	2021	School Choice Program for Certain Students with Exceptionalities
Lueken	Mississippi	V	2021	Mississippi Dyslexia Therapy Scholarship for Students with Dyslexia Program
Lueken	North Carolina	V	2021	Special Education Scholarship Grants for Children with Disabilities
Lueken	North Carolina	V	2021	Opportunity Scholarships
Lueken	Cleveland, OH	V	2021	Cleveland Scholarship Program
Lueken	Ohio	V	2021	Autism Scholarship Program
Lueken	Ohio	V	2021	Educational Choice Scholarship Program
Lueken	Ohio	V	2021	Jon Peterson Special Needs Scholarship Program
Lueken	Ohio	V	2021	Income-Based Scholarship Program
Lueken	Oklahoma	V	2021	Lindsey Nicole Henry Scholarships for Students with Disabilities
Lueken	Utah	V	2021	Carson Smith Special Needs Scholarship Program
Lueken	Milwaukee, WI	V	2021	Milwaukee Parental Choice Program
Lueken	Racine, WI	V	2021	Parental Private School Choice Program (Racine)
Lueken	Wisconsin	V	2021	Parental Choice Program (Statewide)
DeAngelis	Wisconsin	V	2020	four voucher programs
Trivitt and DeAngelis	Louisiana	V	2020	Louisiana Scholarship Program
Trivitt and DeAngelis	Arkansas	V	2018	Succeed Scholarship Program
Wisconsin LAB*	Wisconsin	V	2018	Special Needs Scholarship Program

ESA=Education Savings Account; TCS=Tax-credit scholarship; P=Private scholarship

\*State of Wisconsin Legislative Audit Bureau

\*\* Results could not be broken out by program.

†The Florida Supreme Court declared that the private school voucher component of the program was unconstitutional in January 2006.

‡LOEDR stands for Legislative Office of Economic and Demographic Research (State of Florida)

§OPPAGA stands for Office of Program Policy Analysis and Government Accountability (State of Florida)

# Joint Legislative Committee on Performance Evaluation and Expenditure Review

	Any Positive Effect	No Visible Effect	Any Negative Effect
	✓		X
	✓		
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			X
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Notes: This table shows all empirical studies using all methods; the total fiscal effect of school choice programs is referenced. Table excludes any analyses that fail to make a reasonable attempt to account for both sides of the ledger, i.e. both costs and savings from school choice programs. If a study’s analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as “no visible effect.” Lueken (2021) employs the same methods as: Martin F. Lueken (2018). Fiscal Effects of School Vouchers: Examining the Savings and Costs of America’s Private School Voucher Programs. Retrieved from EdChoice website: <https://www.edchoice.org/wp-content/uploads/2018/09/Fiscal-Effects-of-School-Vouchers-by-Martin-Lueken.pdf>

# Fiscal Effects on Taxpayers and Public Schools From All Empirical Studies *(continued)*

Author(s)	Location	Program Type	Year	Program Name
DeAngelis and Trivitt	Louisiana	V	2016	Louisiana Scholarship Program
Spalding	Florida	V	2014	Opportunity Scholarship Program†
Wolf and McShane	Washington, D.C.	V	2013	Opportunity Scholarship Program
Costrell	Milwaukee, WI	V	2010	Milwaukee Parental Choice Program
Aud	Vermont	V	2007	Town Tuitioning Program
Aud	Maine	V	2007	Town Tuitioning Program
Aud	Florida	V	2007	John M. McKay Scholarships for Students with Disabilities Program
Aud	Florida	V	2007	Opportunity Scholarship Program†
Aud	Washington, D.C.	V	2007	Opportunity Scholarship Program
Aud	Cleveland, OH	V	2007	Cleveland Scholarship Program
Aud	Ohio	V	2007	Autism Scholarship Program
Aud	Utah	V	2007	Carson Smith Special Needs Scholarship Program
Aud	Milwaukee, WI	V	2007	Milwaukee Parental Choice Program
Aud and Michos	Washington, D.C.	V	2006	Opportunity Scholarship Program
Griffin and Kieffer	Georgia	TCS	2023	Georgia Qualified Education Expense Tax Credit
Montgomery	Iowa	TCS	2022	School Tuition Organization Tax Credit
Nikolov and Mangum	Virginia	TCS	2021	Education Improvement Scholarships Tax Credits Program
Lueken	Alabama	TCS	2021	Alabama Education Scholarship Program
Lueken	Arizona	TCS	2021	Original Individual Income Tax Credit Scholarship Program
Lueken	Arizona	TCS	2021	Low-Income Corporate Income Tax Credit Scholarship Program
Lueken	Arizona	TCS	2021	Lexie's Law for Disabled and Displaced Students Tax Credit Scholarship Program
Lueken	Arizona	TCS	2021	"Switcher" Individual Income Tax Credit Scholarship Program
Lueken	Florida	TCS	2021	Florida Tax Credit Scholarship Program
Lueken	Georgia	TCS	2021	Qualified Education Expense Tax Credit
Lueken	Indiana	TCS	2021	School Scholarship Tax Credit
Lueken	Iowa	TCS	2021	School Tuition Organization Tax Credit
Lueken	Kansas	TCS	2021	Tax Credit for Low Income Students Scholarship Program
Lueken	Louisiana	TCS	2021	Tuition Donation Rebate Program
Lueken	New Hampshire	TCS	2021	Education Tax Credit Program
Lueken	Oklahoma	TCS	2021	Oklahoma Equal Opportunity Education Scholarships

ESA=Education Savings Account; TCS=Tax-credit scholarship; P=Private scholarship

\*State of Wisconsin Legislative Audit Bureau

\*\* Results could not be broken out by program.

†The Florida Supreme Court declared that the private school voucher component of the program was unconstitutional in January 2006.

‡LOEDR stands for Legislative Office of Economic and Demographic Research (State of Florida)

§OPPAGA stands for Office of Program Policy Analysis and Government Accountability (State of Florida)

# Joint Legislative Committee on Performance Evaluation and Expenditure Review



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Notes: This table shows all empirical studies using all methods; the total fiscal effect of school choice programs is referenced. Table excludes any analyses that fail to make a reasonable attempt to account for both sides of the ledger, i.e. both costs and savings from school choice programs. If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect." Lueken (2021) employs the same methods as: Martin F. Lueken (2018). Fiscal Effects of School Vouchers: Examining the Savings and Costs of America's Private School Voucher Programs. Retrieved from EdChoice website: <https://www.edchoice.org/wp-content/uploads/2018/09/Fiscal-Effects-of-School-Vouchers-by-Martin-Lueken.pdf>

# Fiscal Effects on Taxpayers and Public Schools From All Empirical Studies *(continued)*

Author(s)	Location	Program Type	Year	Program Name
Lueken	Pennsylvania	TCS	2021	Educational Improvement Tax Credit Program
Lueken	Pennsylvania	TCS	2021	Opportunity Scholarship Tax Credit Program
Lueken	Rhode Island	TCS	2021	Tax Credits for Contributions to Scholarship Organizations
Lueken	South Carolina	TCS	2021	Educational Credit for Exceptional Needs Children
Lueken	Virginia	TCS	2021	Education Improvement Scholarships Tax Credits Program
Erickson and Scafidi	Georgia	TCS	2020	Qualified Education Expense Tax Credit
Sheasby**	Arizona	TCS	2020	All four tax-credit scholarship programs**
Dearmon and Evans	Oklahoma	TCS	2018	Oklahoma Equal Opportunity Education Scholarships
SummaSource	Alabama	TCS	2017	Alabama Education Scholarship Program
LOEDR‡	Florida	TCS	2012	Florida Tax Credit Scholarship Program
OPPAGA§	Florida	TCS	2008	Florida Tax Credit Scholarship Program
Aud	Arizona	TCS	2007	Original Individual Income Tax Credit Scholarship Program
Aud	Pennsylvania	TCS	2007	Educational Improvement Tax Credit Program
Aud	Florida	TCS	2007	Florida Tax Credit Scholarship Program
Collins Center for Public Policy	Florida	TCS	2007	Florida Tax Credit Scholarship Program
Merrifield & Gray	San Antonio, TX	P	2009	

ESA=Education Savings Account; TCS=Tax-credit scholarship; P=Private scholarship

\*State of Wisconsin Legislative Audit Bureau

\*\* Results could not be broken out by program.

†The Florida Supreme Court declared that the private school voucher component of the program was unconstitutional in January 2006.

‡LOEDR stands for Legislative Office of Economic and Demographic Research (State of Florida)

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# Joint Legislative Committee on Performance Evaluation and Expenditure Review

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*Notes:* This table shows all empirical studies using all methods; the total fiscal effect of school choice programs is referenced. Table excludes any analyses that fail to make a reasonable attempt to account for both sides of the ledger, i.e. both costs and savings from school choice programs. If a study’s analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as “no visible effect.” Lueken (2021) employs the same methods as: Martin F. Lueken (2018). Fiscal Effects of School Vouchers: Examining the Savings and Costs of America’s Private School Voucher Programs. Retrieved from EdChoice website: <https://www.edchoice.org/wp-content/uploads/2018/09/Fiscal-Effects-of-School-Vouchers-by-Martin-Lueken.pdf>

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\*\* This paper includes an update to the analysis from: Martin F. Lueken (2018), *The Fiscal Effects of Tax-Credit Scholarship Programs in the United States*, *Journal of School Choice*, 12(2), pp. 181–215, <https://dx.doi.org/10.1080/15582159.2018.1447725>

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# SCHOOL SAFETY AND CLIMATE

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As numerous surveys of parents of school-age children have told us, parents are concerned about school safety. It is usually at the top of the list when parents are asked to rank the factors they care about.<sup>18</sup> Given its importance, we included school safety as a new outcome starting in the 2023 edition of *The 123s of School Choice*. This section reviews studies that examine the effect of educational choice on school climate and safety-related issues such as student bullying, physical conflict, gang activities, drug-related problems, discipline issues, and safety practices.

Researchers have studied publicly funded voucher programs in Washington, D.C., Wisconsin, and Indiana, and privately funded voucher programs in New York City, Dayton, and Washington, D.C., as well as a national privately funded scholarship program. Most studies use random assignment to causally link climate and safety outcomes to the programs under study.

## Summary of Studies

	Total Number of Studies	Any Positive Effect	No Visible Effect	Any Negative Effect
School Safety and Climate	8	8	0	0

These studies examined five voucher programs and three privately funded scholarship programs across four states and Washington, D.C. Of the eight studies examining educational choice’s impact on school climate and safety, eight found positive outcomes. None of these studies found negative outcomes for school safety.

- Webber et al. (2019) used random assignment to study the effects of the D.C. Opportunity Scholarship Program on school safety outcomes. The researchers compared parent and student perceptions of safety-related incidents at school—such as theft, robbery, physical violence, and bullying—between parents and students who won the program’s lottery and those who did not. The program had a positive effect on students’ perceptions three years after they applied for the program. There was no statistically significant impact on parents’ perceptions of school safety.

- DeAngelis and Lueken (2019) surveyed public and private school leaders in Indiana to study the effect of the Indiana Choice Scholarship Program on numerous indicators of school safety and climate. Relative to traditional public schools, private schools were less likely to have restrictive safety practices such as controlled access to school grounds, random metal detector checks, random dog sniffs for drugs, security cameras, or employ security personnel. Relative to public school leaders, private school leaders were more likely to report never having physical conflicts among students, robbery or theft, vandalism, students using alcohol, students possessing weapons, students physically abusing teachers, student racial tensions, students verbally abusing teachers, widespread disorder in the classroom, students disrespecting teachers, and gang activities.
- Wolf et al. (2010) used random assignment to study the effects of the D.C. Opportunity Scholarship Program on school climate and safety outcomes. They surveyed students and parents who won a lottery and those who did not. They were asked about numerous school safety-related issues, such as property destruction, fighting, and drug and alcohol distribution and use. Parents of voucher students rated their child’s school as significantly safer and more orderly than did control group parents. Treatment and control group students had comparable views on their schools’ safety and climate.
- Witte et al. (2008) studied perceptions of students and parents in the Milwaukee Parental Choice Program of school safety. The study matched these students with peers in Milwaukee Public Schools. Public school parents were significantly more likely than parental choice parents to say that their child’s school had a somewhat or very serious problem with weapons. Parental choice parents were more likely than public school parents to say that fighting is not a serious problem. Voucher students were more likely than matched public school students to agree strongly with the statement, “My school provides a drug-free environment.” Voucher students were also more likely than public school students to agree strongly with the statement that their schools “make sure that classrooms are safe and orderly.”
- Howell and Peterson (2002) surveyed parents of children who won a lottery and who lost the lottery in private voucher programs in New York City, Dayton, Ohio, and Washington, D.C. Significantly fewer parents with children in private schools reported fighting and destruction of property as “very serious,” compared to parents with children in public school.

- Peterson and Campbell (2001) conducted a national study of the Children’s Scholarship Fund, a privately funded voucher program. This study looked at the effects of vouchers on school discipline. Significantly fewer private school parents rated fighting, cheating, stealing, gangs, racial conflict, guns, and drugs as serious problems in their schools, relative to ratings by public school parents.

## About the Methods

Studies considered in this section employ random assignment, matching methods, and multivariate regression analysis that controls for student and school factors. In the context of school choice research, random assignment occurs via lotteries conducted for oversubscribed programs. Lottery winners are awarded scholarships to attend a private school, and lottery losers do not receive vouchers. Studies that use matching methods compare students participating in a choice program with a group of students who are enrolled in public schools and have the same or similar observed characteristics, such as baseline test scores, free and reduced-price lunch status, race/ethnicity or parent characteristics. Outcomes are measured as incidents or perceptions of school climate and safety-related issues reported by students, parents, and school leaders.

## Additional Research Context

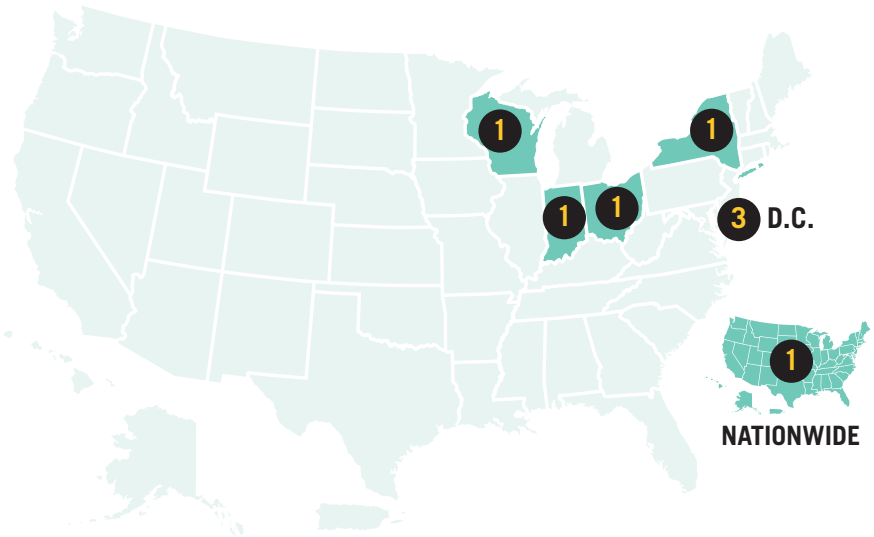
Jude Schwalbach and Corey DeAngelis reviewed the academic literature on school safety effects on students participating in private school programs and charter schools.<sup>19</sup> They found generally positive findings in the studies they reviewed. We do not include one study that was included in Schwalbach and DeAngelis’s review because it is an observational study and does not use methods to account for self-selection.

# School Safety and Climate From All Empirical Studies

Author(s)	Location	Program Type	Year	Program Name
Witte et al.	Milwaukee, WI	V	2008	Milwaukee Parental Choice Program
Wolf et al.	Washington, D.C.	V	2010	Opportunity Scholarship Program
DeAngelis & Lueken	Indiana	V	2019	Choice Scholarship Program
Webber et al.	Washington, D.C.	V	2019	Opportunity Scholarship Program
Peterson & Campbell	National	P	2001	
Howell & Peterson	New York, NY	P	2002	
Howell & Peterson	Dayton	P	2002	
Howell & Peterson	Washington, D.C.	P	2002	

V=Voucher; P=Private scholarship

## Number of Studies on School Safety and Climate by Location



	Any Positive Effect	No Visible Effect	Any Negative Effect	RCT
	✓			
	✓			✓
	✓			
	✓			✓
	✓			✓
	✓			✓
	✓			✓

Notes: This table shows all empirical studies using all methods. If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."

## Citations of Studies in Summary Table

Listed in chronological order, starting with most recent

Ann Webber, Ning Rui, Roberta Garrison-Mogren, Robert B. Olsen, and Babette Gutmann (2019), *Evaluation of the DC Opportunity Scholarship Program: Impacts Three Years After Students Applied* (NCEE 2019-4006), Institute for Education Sciences, U.S. Department of Education, retrieved from <https://files.eric.ed.gov/fulltext/ED594875.pdf>

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# APPENDIX

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## Other Reviews of Research

Most studies of educational choice evaluate a single program. This creates a challenge for understanding the effects of choice writ large, because programs vary greatly: Who is eligible? How much money is available and how is it distributed? What regulations apply to participating schools and families? These are just a few differences that make it hard to report on educational choice as a concept rather than a specific program.

Nonetheless, policymakers considering whether to introduce or expand choice programs in their states want to gain a general understanding about the effectiveness and potential of these programs in their states. To answer their questions, researchers appraise and synthesize the broad body of research evidence by conducting systematic reviews which integrate research findings in an attempt to come to a more general understanding of the impact of educational choice programs.

We identified 22 papers that integrate findings from studies on all eight outcomes we examine in this edition of *The 123s of School Choice*, which amount to 32 distinct analyses. To review, the eight outcomes include participant test scores, competition, educational attainment, integration, civic values and practices, parent satisfaction, fiscal effects, and school safety. One of the 22 papers synthesizes research that evaluated the Milwaukee Parental Choice Program. The remainder of these reviews synthesized studies of multiple programs across the country.

Five of these studies are meta-analyses. A meta-analysis is a “study of studies” or “secondary research” which uses statistical techniques to merge findings (effect sizes) from multiple analyses to calculate an overall effect. The other studies represent different varieties of research reviews. Some are systematic reviews that specify a rigorous and comprehensive search process and inclusion criteria. Others include one of these elements but stop short of a systematic review.

Of the 32 distinct analyses, 24 indicate that outcomes overall lean positive. The 24 include analyses which categorize findings as null to positive. Eight analyses indicate that overall findings were neutral, mixed, or inconclusive. No research review indicated an overall negative effect of private educational choice for any of the eight outcomes.

# Citations of Studies in Summary Table

Listed in chronological order, starting with most recent

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# Research Reviews of Private School Choice Research

Author(s)	Year	Outcome studied
Lubienski & Weitzel (2008)	2008	Participant test scores
Miron, Evergreen, & Urschel (2008)	2008	Participant test scores
Wolf (2008)	2008	Participant test scores
Rouse & Barrow (2009)	2009	Participant test scores
Rouse & Barrow (2009)	2009	Competition
Usher & Kober (2011)	2011	Participant test scores
Anderson, Guzman, & Ringquist (2013)	2013	Participant test scores
Egalite (2013)	2013	Competition
Bozzo (2016)	2016	Participant test scores
Bozzo (2016)	2016	Competition
Egalite & Wolf (2016)	2016	Competition
Egalite & Wolf (2016)	2016	Participant test scores
Egalite & Wolf (2016)	2016	Attainment
Egalite & Wolf (2016)	2016	Integration
Lubienski & Brewer (2016)	2016	Participant test scores
Wolf & Egalite (2016)	2016	Competition
DeAngelis (2017)	2017	Civic Values and Practices
Epple, Romano, and Urquiola (2017)	2017	Competition
Epple, Romano, and Urquiola (2017)	2017	Participant test scores
Epple, Romano, and Urquiola (2017)	2017	Attainment
Ford & Andersson (2017)*	2017	Participant test scores
Ford & Andersson (2017)*	2017	Competition
Ford & Andersson (2017)*	2017	Fiscal
Foreman (2017)	2017	Attainment
Fryer (2017)	2107	Participant test scores
Rhinesmith (2017)	2017	Parent Satisfaction
Swanson (2017)	2017	Integration
DeAngelis & Wolf (2019)	2019	Civic Values and Practices
Jabbar et al. (2019)	2019	Competition
Schwalbach & DeAngelis (2020)	2020	Safety
Shakeel, Anderson, & Wolf (2021)	2021	Participant test scores
Shakeel et al.	2024	Civic Values and Practices

\* Ford and Andersson (2017) limit their review to evaluations of the Milwaukee Parental Choice Program only. All other research reviews listed in this table reflect studies of private choice programs across the United States.

	Positive Effect Overall	Neutral Effect Overall, Mixed, or Inconclusive	Negative Effect Overall	Research Method
	✓			Research Review
	✓			Research Review
	✓			Research Review
		○		Research Review
		○		Research Review
		○		Research Review
	✓			Meta-analysis
	✓			Research Review
	✓			Research Review
	✓			Research Review
	✓			Research Review
		○		Research Review
	✓			Research Review
	✓			Research Review
		○		Research Review
	✓			Research Review
	✓			Research Review
	✓			Research Review
	✓			Research Review
	✓			Research Review
		○		Meta-analysis
	✓			Research Review
	✓			Research Review
	✓			Research Review
	✓			Meta-analysis
	✓			Research Review
		○		Meta-analysis
		○		Meta-analysis

# What Can Research Tell Us About School Choice?

When it comes to evaluating any public policy, social science is an important, but limited, tool in our toolbox.

The findings of studies, articles, and reports must be examined not only for their validity but also in the context of values and priorities that exist outside the realm of the measurable and quantifiable. Studies are limited by their samples, their methods, the data available to researchers, and the quality of the outcome measures used to determine impact. If the sample is too limited, the data too messy, or the outcome measure uncorrelated with what we really care about, a study's large effect size might not be meaningful. Studies like this one get published all the time. Careful readers will dig into them before drawing broad sweeping conclusions.

But even the best designed studies are limited to things that we can measure and count. It is quite challenging to put a number on liberty, autonomy, dignity, respect, racism, or a host of constructs that we all know exist and are meaningful. Even if an intervention has a positive effect on some measurable outcome, it might violate a principle that supersedes it.

Social science should be used as a torch, not a cudgel. It should help us understand how programs work and how they can work better. As an organization that both creates research related to private school choice and regularly uses it, we think it is important to both summarize the extant literature on the topic and speak frankly about both its strengths and limitations.

So, before we dive into the literature on private school choice, there are several important contextual issues to discuss. We also want to take a moment and explain some of the decisions that we made to include some studies in our review and not others.

## ***HETEROGENEITY OF TREATMENT***

Gertrude Stein wrote “A rose is a rose is a rose,” but is it also true that “A voucher is a voucher is a voucher?”<sup>20</sup> Not necessarily. No two private school choice programs are alike. They differ across an array of design features, from how they are funded to rules on accountability to eligibility criteria. The Cleveland Scholarship Program, for example is worth \$5,500 annually for elementary students and \$7,500 for high school students, while the D.C. Opportunity Scholarship is worth \$10,204 for elementary school students and \$15,307 for high school students. Louisiana schools that enroll students from that state's scholarship program must also administer the state's



standardized test. Students in Florida's Tax Credit Scholarship Program must take one of several approved nationally-normed standardized tests. Some programs allow schools to apply admissions requirements to students, but others do not. Some allow families to "top up" their scholarship, adding their own money to help pay for more expensive schools, while others require participating schools to accept the voucher for the full cost of the program. Some programs require students to apply to a school first, and then apply for the voucher. Others have students apply for the voucher first and then apply to the school. Some programs are statewide while others are limited to certain geographic areas. Some are limited to low-income students, and others are limited to students with special needs. The list goes on.

Any reasonable observer would expect these variations to make a difference to the students and schools that participate. When we see different outcomes from different studies, we must ask how much is due to the specifics of the programs.

What works in one place and time may not work everywhere and for all time. The findings of one study that looks at one program may not apply to a program elsewhere, even if the two programs are similar. The more dissimilar they are, the more cautious we should be. This is why, in our summaries, we are clear about the geographic location of the studies that we describe, so that readers can understand the context around the findings.

## **MEASURES MATTER**

It is always important to understand what researchers are measuring. Testing is widely implemented across all sectors of schooling, and thus it is unsurprising that a healthy segment of the school choice literature studies programs' effects on student test scores. But it is important to note that testing is used differently in different education sectors. For most public and charter schools, test scores are part of state accountability systems. These schools can be rewarded or penalized based on how well students perform. Most private schools do not participate in these systems. If you use a measure that one sector is pushed to maximize by the state and use it to examine a sector that is not, you could have trouble. You might confuse the effect of that pushing with the effectiveness of the school and school choice policy.

Second, many private schools eschew state standards and state standardized tests. They argue that those tests do not measure what matters and thus teach their own curriculum aligned to what they think is most important. If we use the results on the state test to compare these schools, we might yet again confuse the results. The scores

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<sup>4</sup>Gertrude Stein (1922), *Geography and Plays*

of schools that are aligned to the state curriculum might do better, not because they are “better” schools, but simply because they are teaching more explicitly what the state test is measuring.

It is also important to know why parents make choices. If they don’t value test scores, we shouldn’t be surprised if the schools they choose don’t have the highest scores. Think of it this way. Some folks like big pickup trucks because they want to haul stuff in the bed or tow their boat to the lake on the weekend. They choose based on cargo space and towing capacity. If we measure cars based on fuel efficiency, arguing that fuel-efficient cars are better cars, it will look like people who buy trucks are making “bad” choices. They aren’t. They are simply choosing on a different dimension.

Finally, it is important to note two papers that documented evidence suggesting a disconnect between test scores and long run outcomes such as educational attainment in school choice program evaluation.<sup>21</sup> There are plausible explanations for this disconnect. For instance, if a private school and a public school have different test scores, the reason may be that they have different curricula, not that one is better than the other. Long-run outcomes of educational attainment, on the other hand, may yield better proxies for how a private school choice program affected a student’s employment prospects and future earnings. So far, no study has examined the effect of any private school choice program on outcomes related to earned income or employment.

### **WHY RANDOMIZED CONTROL TRIAL STUDIES?**

One key decision that we made was to limit the studies in the participant effects section to those that used randomized control trials (RCTs). Many studies of private school choice programs (several of which we reference later) are not RCTs, so we are clear about when we included or excluded non-RCT studies. Most research literatures either have very few RCT studies so far or are simply not conducive to that type of research design.

When evaluating the effect of a private school choice program, we must ask the key question: “Compared to what?”

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<sup>21</sup>Collin Hitt, Michael Q. McShane, and Patrick J. Wolf (2018), *Do Impacts on Test Scores Even Matter? Lessons from Long-Run Outcomes in School Choice Research: Attainment Versus Achievement Impacts and Rethinking How to Evaluate School Choice Programs*, retrieved from American Enterprise Institute website: <http://www.aei.org/wp-content/uploads/2018/04/Do-Impacts-on-Test-Scores-Even-Matter.pdf>; Corey A. DeAngelis (2019), *Divergences between Effects on Test Scores and Effects on Non-Cognitive Skills*, *Educational Review*, advance online publication, <https://dx.doi.org/10.1080/00131911.2019.1646707>

A decrease in average graduation rates among students participating in a choice program doesn't tell us much about the effectiveness of the program. Comparing the change in program participants' graduation rates with students in public schools is somewhat better, but even this comparison provides limited (and possibly misleading) information about the program's effectiveness. There may be factors not being accounted for or observed that explain any difference in those outcomes. This possibility is strong in the world of school choice research, as families who participate in school choice programs may have different motivations than those who do not. In fact, trying to cope with selection bias is a central methodological issue in estimating the effects of school choice programs.

Ideally, to evaluate the effectiveness of a school choice program, we would compare the change in outcomes between students who use a scholarship with the change in outcomes of an identical group of students ("twins") who do not participate in the program. Creating a comparison group that provides an "apples-to-apples" comparison is challenging.

The best methodology available to researchers for generating "apples-to-apples" comparisons is a randomized control trial, which researchers also refer to as random assignment studies. These studies are also known as experimental studies and are widely considered to be the "gold standard" of research methodology. In fact, the What Works Clearinghouse in the U.S. Department of Education designates RCTs as the only research method that can receive the highest rating, "Meets Group Design Standards ***Without Reservations***" [emphasis added].<sup>22</sup>

In RCTs, some random process (like a random drawing) assigns students to the treatment and control groups. This method is often referred to as the "gold standard" of research methods because the treatment and comparison groups are, on average, identical except for one aspect: one group receives the intervention while the other does not. We can attribute any observed differences in outcomes to the treatment (a causal relationship).

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<sup>22</sup>What Works Clearinghouse (2014). *Procedures and Standards Handbook: Version 3.0*, retrieved from Institute of Education Sciences website: [https://ies.ed.gov/ncee/wwc/docs/referenceresources/wwc\\_procedures\\_v3\\_0\\_standards\\_handbook.pdf](https://ies.ed.gov/ncee/wwc/docs/referenceresources/wwc_procedures_v3_0_standards_handbook.pdf)

Researchers that conduct RCT studies (also called “random assignment” studies) may report unbiased estimates of effects based on two different comparisons:

- (1) Researchers may report estimates for “intent-to-treat” (ITT) effects, which compares outcomes between students who won the lottery and students who did not win the lottery. ITT is the estimated effect of winning the lottery.
- (2) Researchers may also report “treatment-on-the-treated” (TOT) effects, which compare differences in outcomes between students who attended a private school and students who did not attend private school, regardless of their lottery outcome. TOT is the estimated effect of using the voucher.

When random assignment is not possible, some researchers use statistical techniques to approximate randomization. These studies are sometimes called nonexperimental studies. All research methods, including RCT, have tradeoffs. While RCTs have very high internal validity because of its ability to control for unobservable factors (e.g., student and parent motivation), they do not necessarily provide very high (or low) external validity.

**Internal validity** is the degree to which the effects we observe can be attributed to the program and not other factors.

**External validity** is the extent to which results can be generalized to other students in other programs.

In addition to having a high degree of internal validity, another reason we favor RCTs over other methods is that, in the context of evaluating private school choice programs, RCTs occur at the level of the program itself. This is in contrast with RCTs in other education policy areas, such as charter schools. In charter school RCTs, lotteries occur at the school level, meaning that only schools that held lotteries are included in the study. Given that high-quality schools are likely to be in high demand and oversubscribed, results from these studies are likely to represent oversubscribed schools and may exclude schools that are in low demand. Results from RCT studies of programs where the lottery is held at the program level give us an estimate of the effect of the program rather than just oversubscribed schools.

As you may have seen if you’ve already flipped through this guide, we reported results for studies based on both random assignment (whenever possible) and nonexperimental methods that have some strategy for trying to control for self-selection until 10 random assignment studies based on unique student populations become available

## ***MULTIPLE STUDIES OF THE SAME PROGRAMS***

We include multiple studies of the same program in our review as unique observations. We include them because replication is an integral part of the scientific process for discovering truth. It is important to consider research by different researchers who study the same programs and different students. It is also important to consider reports that use different rigorous methods. If these efforts arrive at similar conclusions, then we can be more confident about our conclusions.

We also took care to avoid unnecessary double counting, as this could lead to one program excessively influencing the results. If an article or paper includes multiple distinct analyses of different private school choice programs, then we counted each of the analyses as distinct studies. We include replication studies by different research teams and studies that use different research methods.

In cases where a team of researchers conduct multiple studies to evaluate a given program over, we include the most recent analysis from the evaluation. We exclude studies that were conducted by the same researchers or research team using the same data.

## ***WHY NO EFFECT SIZES?***

This guide is a summary of the relevant research on private school choice programs. It is not a meta-analysis of those research areas. Meta-analyses attempt to look at the estimates of program effects from individual studies and combine them to determine an overall average effect across all of the studies. These are difficult and complicated studies to do well. They involve norming the effect sizes to numbers that can be combined with one another and averaged.

That kind of methodology is beyond the scope of our project here. Our goal is to summarize the literature. To do so, we have sacrificed a measure of specificity. We believe that tradeoff is worth making. Where possible, we cite relevant meta-analyses and systematic reviews that have been conducted on the literature of the particular topics that we explore.

# Research Studies on ESA Programs

Author(s)	Location	Program Name
<b>Parent Satisfaction Impacts from Private Educational Choice Programs</b>		
Varga et al. (2021)	Florida	Family Empowerment Scholarship Program
Catt and Cheng (2019)	Arizona	Empowerment Scholarship Accounts
Kittredge (2016)	Mississippi	Equal Opportunity for Students with Special Needs Program
Butcher and Bedrick (2013)	Arizona	Empowerment Scholarship Accounts
<b>Fiscal Effects on Taxpayers and Public Schools from All Empirical Studies</b>		
Lueken (2021)	Arizona	Empowerment Scholarship Accounts
Lueken (2021)	Florida	Family Empowerment Scholarship Program
Lueken (2021)	Mississippi	Equal Opportunity for Students with Special Needs Program
PEER Mississippi (2020)#	Mississippi	Equal Opportunity for Students with Special Needs Program

*Notes:* If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."

# Joint Legislative Committee on Performance Evaluation and Expenditure Review

	Any Positive Effect	No Visible Effect	Any Negative Effect
	✓		
	✓		X
	✓		
	✓		
	✓		X
	✓		
	✓		
			X

# Research Studies on Voucher Programs

Author(s)	Location	Program Name
<b>Test Score Outcome of Participants from Random Assignment Studies</b>		
Erickson, Mills and Wolf (2021)	Louisiana	Louisiana Scholarship Program
Webber et al. (2019)	Washington, D.C.	Opportunity Scholarship Program
Abdulkadiroglu, Pathak, and Walters (2018)	Louisiana	Louisiana Scholarship Program
Wolf et al. (2013)	Washington, D.C.	Opportunity Scholarship Program
Lamarche (2008)	Milwaukee, WI	Milwaukee Parental Choice Program
Greene, Peterson, and Du (1999)	Milwaukee, WI	Milwaukee Parental Choice Program
Rouse (1998)	Milwaukee, WI	Milwaukee Parental Choice Program
<b>Attainment Outcomes of Participants from All Empirical Studies</b>		
Chingos and Kisida (2023)	Washington, D.C.	Opportunity Scholarship Program
Austin and Pardo (2021)	Indiana	Choice Scholarship Program
Erickson, Mills, and Wolf (2021)	Louisiana	Louisiana Scholarship Program
Chingos et al. (2019)	Milwaukee, WI	Milwaukee Parental Choice Program
Wolf et al. (2013)	Washington, D.C.	Opportunity Scholarship Program
<b>Parent Satisfaction Impacts from Private Educational Choice Programs</b>		
Canbolat (2021)	Indiana	Choice Scholarship Program
Varga et al. (2021)	Florida	John M. McKay Scholarships for Students with Disabilities Program
Department of Public Instruction (2018)	Wisconsin	Special Needs Scholarship Program
Catt and Rhinesmith (2017)	Indiana	Choice Scholarship Program
Egalite, Gray, and Stallings (2017)	North Carolina	Opportunity Scholarships
Catt and Rhinesmith (2016)*	Indiana	Choice Scholarship Program/School Scholarship Tax Credit
Black (2015)	Florida	John M. McKay Scholarships for Students with Disabilities Program
Kisida and Wolf (2015)	Washington, D.C.	Opportunity Scholarship Program
DiPerna (2014)†	Indiana	Choice Scholarship Program/School Scholarship Tax Credit
Witte et al. (2008)	Milwaukee, WI	Milwaukee Parental Choice Program
Weidner and Herrington (2006)	Florida	John M. McKay Scholarships for Students with Disabilities Program
Greene and Forster (2003)	Florida	John M. McKay Scholarships for Students with Disabilities Program
Witte (2000)	Milwaukee, WI	Milwaukee Parental Choice Program
Metcalfe (1999)	Cleveland, OH	Cleveland Scholarship Program

\*The report combined voucher and tax-credit scholarship parents into "Choice Parents," although anyone could calculate voucher and tax-credit scholarship results based on data tables in the report appendices.

†The report combined voucher and tax-credit scholarship parents into "Choice Parents" for all information made publicly available.

‡The Florida Supreme Court declared that the private school voucher component of the program was unconstitutional in January 2006.





# Research Studies on Voucher Programs

(continued)

Author(s)	Location	Program Name
<b>Parent Satisfaction Impacts from Private Educational Choice Programs</b>		
Peterson, Howell, and Greene (1999)	Milwaukee, WI	Cleveland Scholarship Program
Greene, Howell, and Peterson (1998)	Cleveland, OH	Cleveland Scholarship Program
<b>Academic Outcomes of Public Schools from All Empirical Studies</b>		
Lavertu and Gregg	Ohio	Educational Choice Scholarship Program
Egalite and Mills (2021)	Louisiana	Louisiana Scholarship Program
Egalite and Catt (2020)	Indiana	Choice Scholarship Program
Figlio and Karbownik (2016)	Ohio	Educational Choice Scholarship Program
Bowen and Trivitt (2014)	Florida	Opportunity Scholarship Program‡
Chakrabarti (2013)	Florida	Opportunity Scholarship Program‡
Carr (2011)	Ohio	Educational Choice Scholarship Program
Winters and Greene (2011)	Florida	John M. McKay Scholarships for Students with Disabilities Program
Mader (2010)	Milwaukee, WI	Milwaukee Parental Choice Program
Greene and Marsh (2009)	Milwaukee, WI	Milwaukee Parental Choice Program
Chakrabarti (2008)	Milwaukee, WI	Milwaukee Parental Choice Program
Forster (2008)	Ohio	Educational Choice Scholarship Program
Forster (2008)	Florida	Opportunity Scholarship Program‡
Carnoy et al. (2007)	Milwaukee, WI	Milwaukee Parental Choice Program
Greene and Winters (2007)	Washington, D.C.	Opportunity Scholarship Program
Figlio and Rouse (2006)	Florida	Opportunity Scholarship Program‡
West and Peterson (2006)	Florida	Opportunity Scholarship Program‡
Greene and Winters (2004)	Florida	Opportunity Scholarship Program‡
Greene and Forster (2002)	Milwaukee, WI	Milwaukee Parental Choice Program
Hammons (2002)	Maine	Town Tuitioning Program
Hammons (2002)	Vermont	Town Tuitioning Program
Hoxby (2002)	Milwaukee, WI	Milwaukee Parental Choice Program
Greene (2001)	Florida	Opportunity Scholarship Program‡

\*The report combined voucher and tax-credit scholarship parents into "Choice Parents," although anyone could calculate voucher and tax-credit scholarship results based on data tables in the report appendices.

†The report combined voucher and tax-credit scholarship parents into "Choice Parents" for all information made publicly available.

‡The Florida Supreme Court declared that the private school voucher component of the program was unconstitutional in January 2006.



# Research Studies on Voucher Programs

(continued)

Author(s)	Location	Program Name
<b>Civic Values and Practices from All Empirical Studies</b>		
DeAngelis and Wolf (2020)	Milwaukee, WI	Milwaukee Parental Choice Program
DeAngelis and Wolf (2018)	Milwaukee, WI	Milwaukee Parental Choice Program
Mills et al. (2016)	Louisiana	Louisiana Scholarship Program
Fleming, Mitchell, and McNally (2014)	Milwaukee, WI	Milwaukee Parental Choice Program
Fleming (2014)	Milwaukee, WI	Milwaukee Parental Choice Program
<b>Academic Outcomes of Public Schools from All Empirical Studies</b>		
Lavertu and Gregg	Ohio	Educational Choice Scholarship Program
Egalite, Mills, and Wolf (2017)	Louisiana	Louisiana Scholarship Program
Greene, Mills, and Buck (2010) <sup>§</sup>	Milwaukee, WI	Milwaukee Parental Choice Program
Greene and Winters (2007)	Washington, D.C.	Opportunity Scholarship Program
Forster (2006)	Milwaukee, WI	Milwaukee Parental Choice Program
Forster (2006)	Cleveland, OH	Cleveland Scholarship Program
Fuller and Mitchell (2000)	Milwaukee, WI	Milwaukee Parental Choice Program
Greene (1999)	Cleveland, OH	Cleveland Scholarship Program
<b>Fiscal Effects on Taxpayers and Public Schools from All Empirical Studies</b>		
Lavertu and Gregg (2022)	Ohio	Educational Choice Scholarship Program
Faulk and Hicks (2021)	Indiana	Choice Scholarship Program
Lueken (2021)	Washington, D.C.	Opportunity Scholarship Program
Lueken (2021)	Florida	John M. McKay Scholarships for Students with Disabilities Program
Lueken (2021)	Georgia	Georgia Special Needs Scholarship Program
Lueken (2021)	Indiana	Choice Scholarship Program
Lueken (2021)	Louisiana	Louisiana Scholarship Program
Lueken (2021)	Louisiana	School Choice Program for Certain Students with Exceptionalities
Lueken (2021)	Mississippi	Mississippi Dyslexia Therapy Scholarship for Students with Dyslexia Program
Lueken (2021)	North Carolina	Special Education Scholarship Grants for Children with Disabilities
Lueken (2021)	North Carolina	Opportunity Scholarships

\*The report combined voucher and tax-credit scholarship parents into "Choice Parents," although anyone could calculate voucher and tax-credit scholarship results based on data tables in the report appendices.

†The report combined voucher and tax-credit scholarship parents into "Choice Parents" for all information made publicly available.

‡The Florida Supreme Court declared that the private school voucher component of the program was unconstitutional in January 2006.

	Any Positive Effect	No Visible Effect	Any Negative Effect
	✓		
		○ ○	
	✓ ✓ ✓		
	✓ ✓		
		○	
	✓ ✓ ✓ ✓ ✓ ✓		
		○	
	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓		

§This study employed multiple measures of racial integration and concluded that the effects of the program was overall neutral. We included this study in the "No Visible Effect" column.

#State of Wisconsin Legislative Audit Bureau

Notes: If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."

# Research Studies on Voucher Programs

(continued)

Author(s)	Location	Program Name
<b>Fiscal Effects on Taxpayers and Public Schools from All Empirical Studies</b>		
Lueken (2021)	Cleveland, OH	Cleveland Scholarship Program
Lueken (2021)	Ohio	Autism Scholarship Program
Lueken (2021)	Ohio	Educational Choice Scholarship Program
Lueken (2021)	Ohio	Jon Peterson Special Needs Scholarship Program
Lueken (2021)	Ohio	Income-Based Scholarship Program
Lueken (2021)	Oklahoma	Lindsey Nicole Henry Scholarships for Students with Disabilities
Lueken (2021)	Utah	Carson Smith Special Needs Scholarship Program
Lueken (2021)	Milwaukee, WI	Milwaukee Parental Choice Program
Lueken (2021)	Racine, WI	Parental Private School Choice Program (Racine)
Lueken (2021)	Wisconsin	Parental Choice Program (Statewide)
DeAngelis (2020)	Wisconsin	four voucher programs
Trivitt and DeAngelis (2020)	Louisiana	Louisiana Scholarship Program
Trivitt and DeAngelis (2018)	Arkansas	Succeed Scholarship Program
Wisconsin LAB (2018)#	Wisconsin	Special Needs Scholarship Program
DeAngelis and Trivitt (2016)	Louisiana	Louisiana Scholarship Program
Spalding (2014)	Florida	Opportunity Scholarship Program‡
Wolf and McShane (2013)	Washington, D.C.	Opportunity Scholarship Program
Costrell (2010)	Milwaukee, WI	Milwaukee Parental Choice Program
Aud (2007)	Vermont	Town Tuitioning Program
Aud (2007)	Maine	Town Tuitioning Program
Aud (2007)	Florida	John M. McKay Scholarships for Students with Disabilities Program
Aud (2007)	Florida	Opportunity Scholarship Program†
Aud (2007)	Washington, D.C.	Opportunity Scholarship Program
Aud (2007)	Cleveland, OH	Cleveland Scholarship Program
Aud (2007)	Ohio	Autism Scholarship Program
Aud (2007)	Utah	Carson Smith Special Needs Scholarship Program
Aud (2007)	Milwaukee, WI	Milwaukee Parental Choice Program
Aud and Michos (2006)	Washington, D.C.	Opportunity Scholarship Program

\*The report combined voucher and tax-credit scholarship parents into "Choice Parents," although anyone could calculate voucher and tax-credit scholarship results based on data tables in the report appendices.

†The report combined voucher and tax-credit scholarship parents into "Choice Parents" for all information made publicly available.

‡The Florida Supreme Court declared that the private school voucher component of the program was unconstitutional in January 2006.

	Any Positive Effect	No Visible Effect	Any Negative Effect
	✓		
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	✓		

§This study employed multiple measures of racial integration and concluded that the effects of the program was overall neutral. We included this study in the "No Visible Effect" column.

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Notes: If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."

# Research Studies on Voucher Programs

*(continued)*

Author(s)	Location	Program Name
<b>School Safety</b>		
Webber et al. (2019)	Washington, D.C.	D.C. Opportunity Scholarship Program
DeAngelis & Lueken (2019)	Indianapolis, IN	Indiana Choice Scholarship Program
Wolf et al. (2010)	Washington, D.C.	D.C. Opportunity Scholarship Program
Witte et al. (2008)	Milwaukee, WI	Milwaukee Parental Choice Program
Peterson & Campbell (2001)	National	Children's Scholarship Fund

\*The report combined voucher and tax-credit scholarship parents into "Choice Parents," although anyone could calculate voucher and tax-credit scholarship results based on data tables in the report appendices.

†The report combined voucher and tax-credit scholarship parents into "Choice Parents" for all information made publicly available.

‡The Florida Supreme Court declared that the private school voucher component of the program was unconstitutional in January 2006.



	Any Positive Effect	No Visible Effect	Any Negative Effect
	✓		
	✓		
	✓		
	✓		
	✓		

§This study employed multiple measures of racial integration and concluded that the effects of the program was overall neutral. We included this study in the "No Visible Effect" column.

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Notes: If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."

# Research Studies on Tax-Credit Scholarship Programs

Author(s)	Location	Program Name
<b>Attainment Outcomes of Participants from All Empirical Studies</b>		
Chingos et al. (2019)	Florida	Florida Tax Credit Scholarship Program
<b>Parent Satisfaction Impacts from Private Educational Choice Programs</b>		
Catt and Kristof (2022)	Kansas	Tax Credit for Low Income Students Program
Catt and Cheng (2019)	Arizona	All four tax-credit scholarship programs**
Catt and Rhinesmith (2017)	Indiana	School Scholarship Tax Credit
Dept. of Revenue Administration (2017)	New Hampshire	Education Tax Credit Program
Catt and Rhinesmith (2016)*	Indiana	Choice Scholarship Program/School Scholarship Tax Credit
DiPerna (2015)†	Indiana	Choice Scholarship Program/School Scholarship Tax Credit
Kelly and Scafidi (2013)	Georgia	Qualified Education Expense Tax Credit
<b>Academic Outcomes of Public Schools from All Empirical Studies</b>		
Figlio et al. (2023)	Florida	Florida Tax Credit Scholarship Program
Figlio and Hart (2014)	Florida	Florida Tax Credit Scholarship Program
Rouse et al. (2013)	Florida	Florida Tax Credit Scholarship Program
<b>Fiscal Effects on Taxpayers and Public Schools from All Empirical Studies</b>		
Griffin and Kieffer (2022)	Georgia	Georgia Qualified Education Expense Tax Credit
Montgomery (2022)	Iowa	School Tuition Organization Tax Credit
Nikolov and Mangum (2021)	Virginia	Education Improvement Scholarships Tax Credits Program
Lueken (2021)	Alabama	Alabama Education Scholarship Program
Lueken (2021)	Arizona	Original Individual Income Tax Credit Scholarship Program
Lueken (2021)	Arizona	Low-Income Corporate Income Tax Credit Scholarship Program
Lueken (2021)	Arizona	Lexie's Law for Disabled and Displaced Students Tax Credit Scholarship Program
Lueken (2021)	Arizona	"Switcher" Individual Income Tax Credit Scholarship Program
Lueken (2021)	Florida	Florida Tax Credit Scholarship Program
Lueken (2021)	Georgia	Qualified Education Expense Tax Credit
Lueken (2021)	Indiana	School Scholarship Tax Credit
Lueken (2021)	Iowa	School Tuition Organization Tax Credit
Lueken (2021)	Kansas	Tax Credit for Low Income Students Scholarship Program
Lueken (2021)	Louisiana	Tuition Donation Rebate Program
Lueken (2021)	New Hampshire	Education Tax Credit Program

\*The report combined voucher and tax-credit scholarship parents into "Choice Parents," although anyone could calculate voucher and tax-credit scholarship results based on data tables in the report appendices.

\*\* Results could not be broken out by program and reflect responses by parents with children attending private schools via any of Arizona's four tax-credit scholarship programs.

†The report combined voucher and tax-credit scholarship parents into "Choice Parents" for all information made publicly available.

	Any Positive Effect	No Visible Effect	Any Negative Effect
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‡LOEDR stands for Legislative Office of Economic and Demographic Research (State of Florida)

§OPPPAGA stands for Office of Program Policy Analysis and Government Accountability (State of Florida)

Notes: If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."

# Research Studies on Tax-Credit Scholarship Programs

(continued)

Author(s)	Location	Program Name
<b>Fiscal Effects on Taxpayers and Public Schools from All Empirical Studies</b>		
Lueken (2021)	Oklahoma	Oklahoma Equal Opportunity Education Scholarships
Lueken (2021)	Pennsylvania	Educational Improvement Tax Credit Program
Lueken (2021)	Pennsylvania	Opportunity Scholarship Tax Credit Program
Lueken (2021)	Rhode Island	Tax Credits for Contributions to Scholarship Organizations
Lueken (2021)	South Carolina	Educational Credit for Exceptional Needs Children
Lueken (2021)	Virginia	Education Improvement Scholarships Tax Credits Program
Erickson and Scafidi (2020)	Georgia	Qualified Education Expense Tax Credit
Sheasby (2020)	Arizona	All four tax-credit scholarship programs**
Dearmon and Evans (2018)	Oklahoma	Oklahoma Equal Opportunity Education Scholarships
SummaSource (2017)	Alabama	Alabama Education Scholarship Program
LOEDR (2012)‡	Florida	Florida Tax Credit Scholarship Program
OPPAGA (2008)§	Florida	Florida Tax Credit Scholarship Program
Aud (2007)	Arizona	Original Individual Income Tax Credit Scholarship Program
Aud (2007)	Pennsylvania	Educational Improvement Tax Credit Program
Aud (2007)	Florida	Florida Tax Credit Scholarship Program
Collins Center for Public Policy (2007)	Florida	Florida Tax Credit Scholarship Program

\*The report combined voucher and tax-credit scholarship parents into "Choice Parents," although anyone could calculate voucher and tax-credit scholarship results based on data tables in the report appendices.

\*\* Results could not be broken out by program and reflect responses by parents with children attending private schools via any of Arizona's four tax-credit scholarship programs.

‡The report combined voucher and tax-credit scholarship parents into "Choice Parents" for all information made publicly available.



# Research Studies on Privately Funded Programs

Author(s)	Location
<b>Test Score Outcomes of Participants</b>	
Bitler et. al. (2015)	New York, NY
Jin, Barnard, and Rubin (2010)	New York, NY
Cowen (2008)	Charlotte, NC
Bettinger and Slonim (2006)	Toledo, OH
Krueger and Zhu (2004)	New York, NY
Barnard et al. (2003)	New York, NY
Howell et al. (2002)	Washington, D.C.
Howell et al. (2002)	New York, NY
Howell et al. (2002)	Dayton, OH
Greene (2001)	Charlotte, NC
<b>Attainment Outcomes of Participants</b>	
Cheng, Chingos, and Peterson (2019)*	New York, NY
<b>Parent Satisfaction</b>	
Howell and Peterson (2002)	Dayton, OH
Howell and Peterson (2002)	New York, NY
Howell and Peterson (2002)	National
Howell and Peterson (2002)	Washington, D.C.
Peterson and Campbell (2001)	National
Greene (2001)	Charlotte, NC
Peterson, Campbell, and West (2001)	San Francisco, CA
Peterson, Myers, and Howell (1999)	San Antonio, TX
Weinschrott and Kilgore (1998)	Indianapolis, IN
<b>Academic Outcomes of Public Schools</b>	
Gray, Merrifield, and Adzima (2016)	San Antonio, TX
Greene and Forster (2002)	San Antonio, TX
<b>Civic Values and Practices</b>	
Shakeel et al. (2024)	Nationwide
Carlson, Chingos, and Campbell (2017)	New York, NY
Bettinger and Slonim (2006)	Toledo, OH
Howell and Peterson (2006)	Washington, D.C.
Campbell (2002)	Nationwide
Peterson and Campbell (2001)	Nationwide
Wolf et. al. (2001)	Washington, D.C.

Notes: If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."

	Any Positive Effect	No Visible Effect	Any Negative Effect
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\*The sample and methods used in this study are the same as those used in Matthew M. Chingos and Paul E. Peterson (2015). Experimentally Estimated Impacts of School Vouchers on College Enrollment and Degree Attainment. *Journal of Public Economics*, 122, pp. 1–12. <https://dx.doi.org/10.1016/j.jpubeco.2014.11.013>. Two main differences are framing across levels of disadvantage and more recent data added to the analysis.

# Research Reviews of Private School Choice Research

*(continued)*

Author(s)	Location
<b>Fiscal Effects on Taxpayers and Public Schools</b>	
Merrifield & Gray (2009)	San Antonio, TX
<b>School Safety</b>	
Howell & Peterson (2002)	New York, NY
Howell & Peterson (2002)	Dayton, OH
Howell & Peterson (2002)	Washington, D.C.

Notes: If a study's analysis produced any positive or negative results or both, we classify those studies as positive, negative or both. Studies that did not produce any statistically significant results for any subgroup are classified as "no visible effect."



	Any Positive Effect	No Visible Effect	Any Negative Effect
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\*The sample and methods used in this study are the same as those used in Matthew M. Chingos and Paul E. Peterson (2015). Experimentally Estimated Impacts of School Vouchers on College Enrollment and Degree Attainment. *Journal of Public Economics*, 122, pp. 1–12. <https://dx.doi.org/10.1016/j.jpubeco.2014.11.013>. Two main differences are framing across levels of disadvantage and more recent data added to the analysis.

# NOTES

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