

# THE 123s OF SCHOOL CHOICE

What the research says about private school choice programs in America

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There are currently

**76** private school choice programs  
and policies operating

in

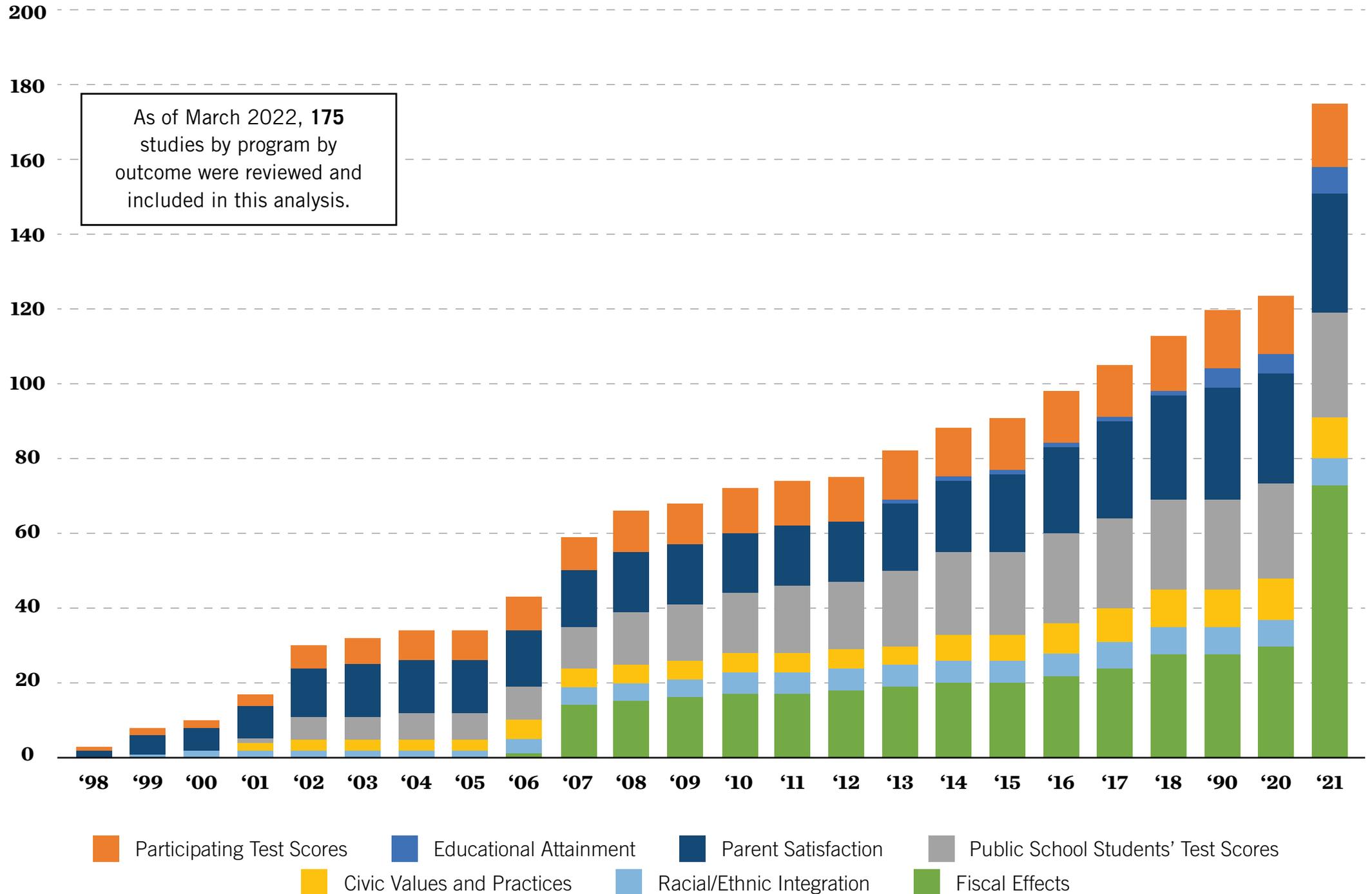
**32** states, Washington, D.C.,  
and Puerto Rico

with more than

**608,000** Students  
participating

across the country.

# Cumulative Number of Analyses Published by Outcome and by Year Published



It's imperative that we understand the effectiveness of these programs. Therefore, researchers have studied them for decades.

In this resource, we've broken down all of the empirical studies of U.S. voucher, tax-credit scholarship and education savings account programs to date.

- Program Participant Test Scores
- Program Participant Attainment
- Parent Satisfaction
- Public School Students' Test Scores
- Civic Values and Practices
- Racial/Ethnic Integration
- Fiscal Effects

When possible, we focus on **random assignment studies** because they provide very high internal validity, though they do not necessarily provide very high external validity compared to other research methods.

**Internal:** effects we observe are attributable to the program, not other factors

**External:** the extent to which results can be generalized to other students in other programs

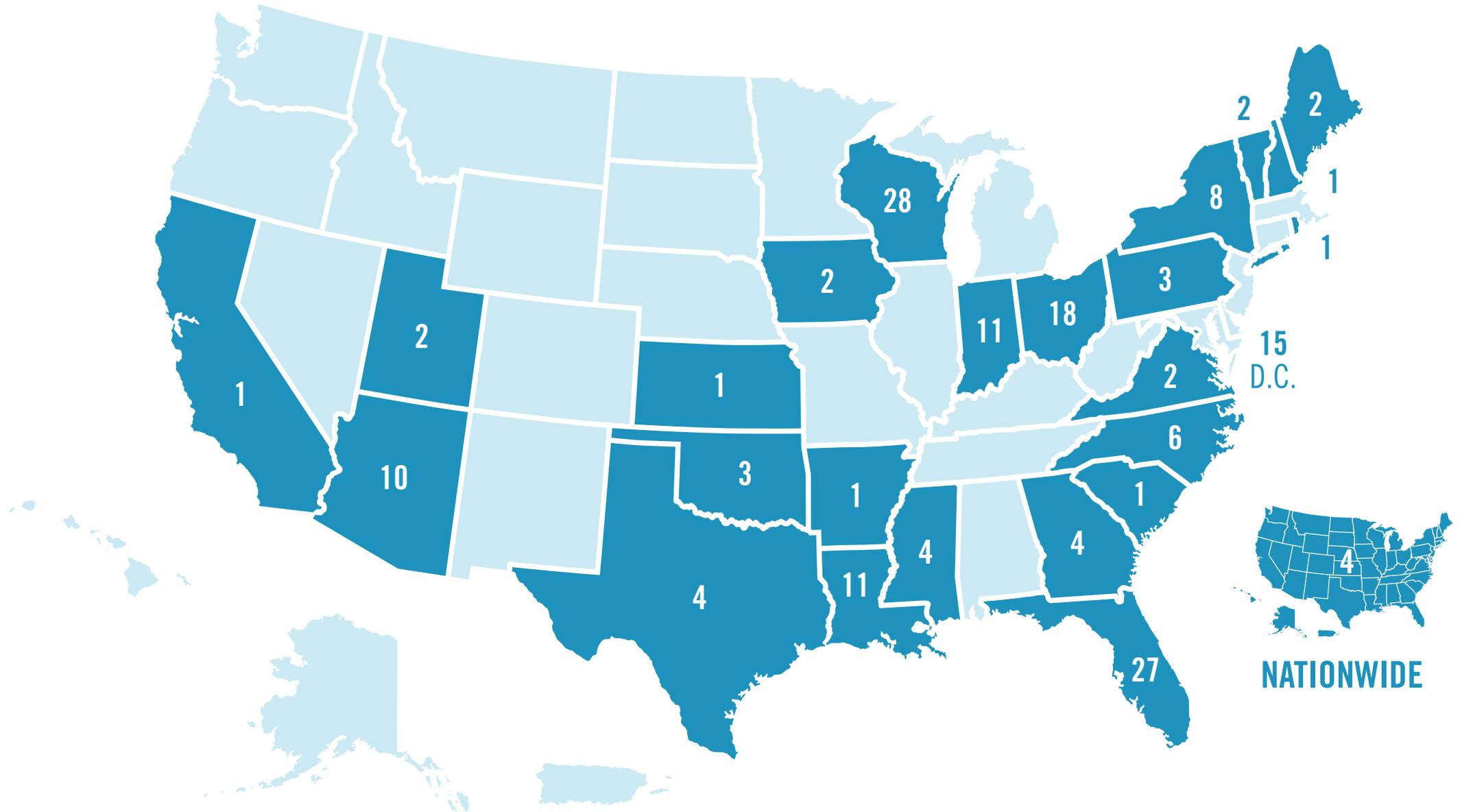
## Overall Effects Counts for Studies of Private School Choice Programs

Outcome	Number of Studies	Any Positive Effect	No Visible Effect	Any Negative Effect
Program Participant Test Scores	17	11	4	3
Educational Attainment	7	5	2	0
Parent Satisfaction	32	30	1	2
Public School Students' Test Scores	28	25	1	2
Civic Values and Practices	11	6	5	0
Integration*	7	6	1	0
Fiscal Effects	73	68	4	5

\*One 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.

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 one study as having detected both positive and negative effects.

# Number of Studies of Private School Choice Programs by Location



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# Program Participant Test Scores

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These studies examine 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**.

Of the 17 random-assignment studies conducted, 11 have found positive outcomes for either the full sample or at least one sub-sample of students studied. Four found no visible effect for any group of students, and three found negative outcomes for all or some students.

## Test Score Outcome of Participants from Experimental Studies

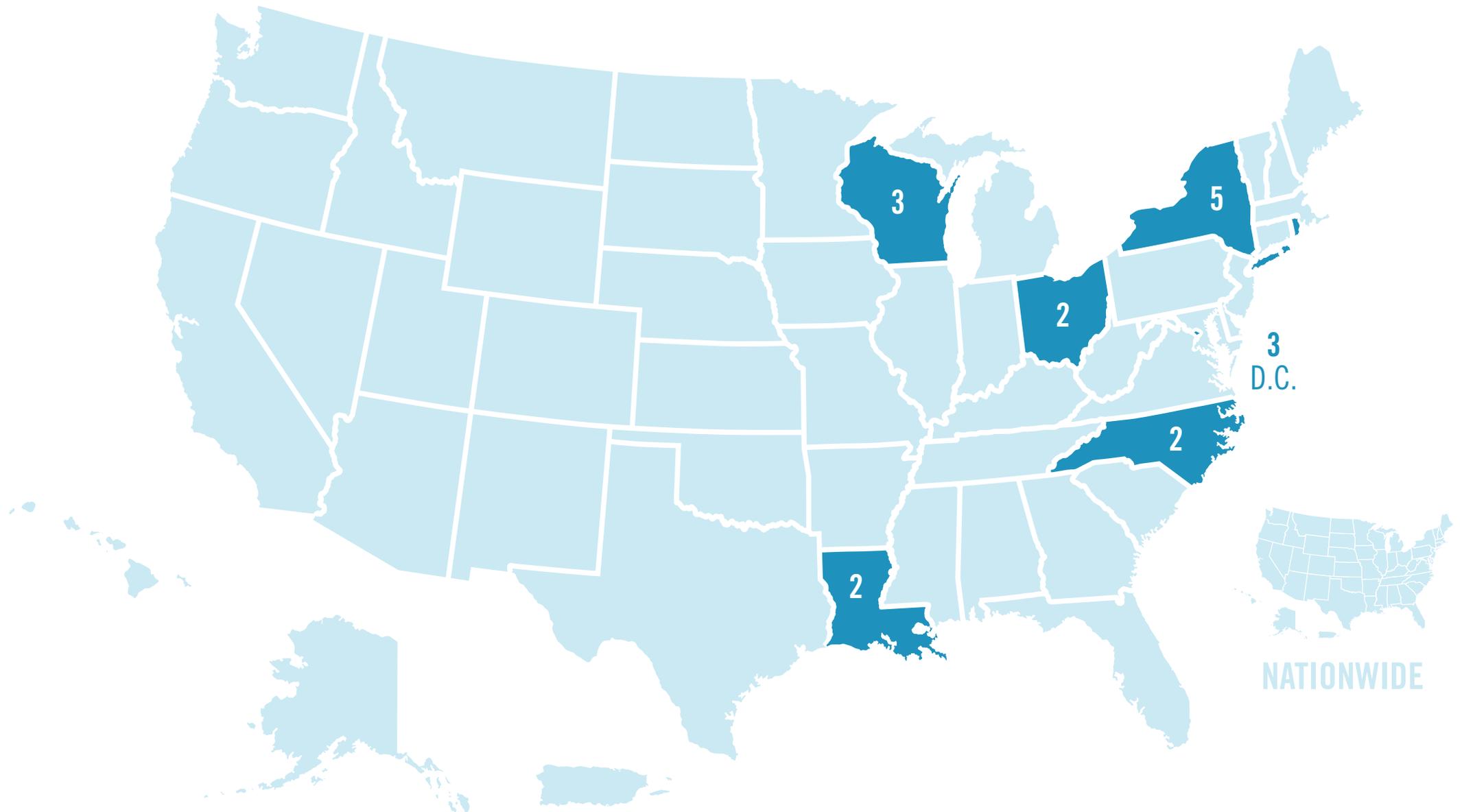
Study	Location	Program Type	Any Positive Effect		No Visible Effect		Any Negative Effect	
			All Students (full sample)	Some Students (subsample)	All Students	Some Students	All Students	Some Students
Erickson, Mills and Wolf (2021)	Louisiana	V					•	•
Webber et al. (2019)	Washington, D.C.	V			•	•		
Abdulkadiroglu, Pathak, and Walters (2018)	Louisiana	V					•	•
Wolf et al. (2013)	Washington, D.C.	V	•	•				
Lamarche (2008)	Milwaukee, WI	V		•				•
Greene, Peterson, and Du (1999)	Milwaukee, WI	V	•					
Rouse (1998)	Milwaukee, WI	V	•	•				
Bitler et. al. (2015)	New York, NY	P			•	•		
Jin, Barnard, and Rubin (2010)	New York, NY	P		•				
Cowen (2008)	Charlotte, NC	P	•					
Bettinger and Slonim (2006)	Toledo, OH	P			•			
Krueger and Zhu (2004)	New York, NY	P			•	•		
Barnard et al. (2003)	New York, NY	P		•	•			
Howell et al. (2002)	Washington, D.C.	P	•	•				
Howell et al. (2002)	New York, NY	P	•	•				
Howell et al. (2002)	Dayton, OH	P		•	•			
Greene (2001)	Charlotte, NC	P	•					

V=Voucher P=Private scholarship

\*One 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.

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 one study as having detected both positive and negative effects.

# Number of Studies on Program Participant Test Scores by Location



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# Program Participant Attainment

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These studies examine whether school choice programs have an effect on students' likelihood to graduate high school, enroll in college or attain a college degree.

Of the **seven studies** that have examined educational attainment outcomes, **five** have found positive effects on educational attainment for at least one subgroup of students, **two** found no visible effect for any group of students, and **no studies** have found negative effects for any group of students

## Attainment Outcomes of Participants from All Empirical Studies

Study	Location	Program Type	Any Positive Effect		No Visible Effect		Any Negative Effect	
			All Students (full sample)	Some Students (subsample)	All Students	Some Students	All Students	Some Students
Austin and Pardo (2021)	Indiana	v	•					
Erickson, Mills, and Wolf (2021)	Louisiana	V			•	•		
Chingos et al. (2019)	Washington, D.C.	V			•	•		
Chingos et al. (2019)	Milwaukee, WI	V	•					
Wolf et al. (2013)	Washington, D.C.	V	•	•				
Chingos et al. (2019)	Florida	TCS	•	•				
Cheng and Peterson* (2020)	New York, NY	P		•	•			

V=Voucher

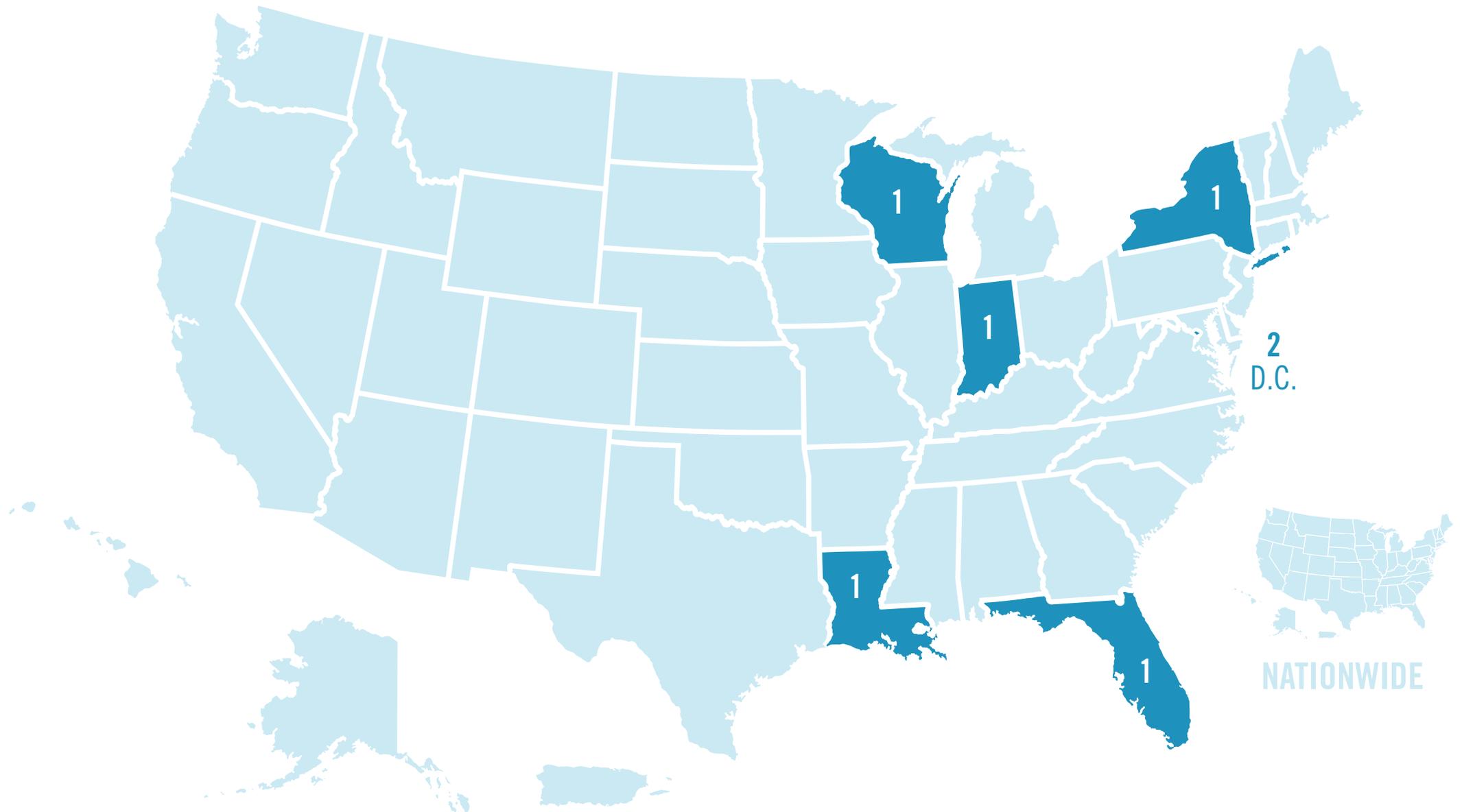
TCS=Tax-credit scholarship

P=Private scholarship

\*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:* 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.

# Number of Studies on Attainment Outcomes of Participants by Location



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# Parent Satisfaction

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These studies rely on polling and surveys to measure the extent to which **parents** with children participating in private school choice programs **are satisfied** with their current school compared to their pre-program school or to non-program students.

Of the 32 studies that have examined school choice's impact on parent satisfaction, 30 found positive outcomes. One found null results, and two found overall negative outcomes.

# Parent Satisfaction Impacts from Private Educational Choice Programs

Study	Location	Program Type	Any Positive Effect	No Visible Effect	Any Negative Effect
Catt and Cheng (2019)	Arizona	ESA	•		•
Kittredge (2016)	Mississippi	ESA	•		
Butcher and Bedrick (2013)	Arizona	ESA	•		
Varga et al. (2021)	Florida	ESA	•		
Varga et al. (2021)	Florida	V	•		
Department of Public Instruction (2018)	Wisconsin	V	•		
Catt and Rhinesmith (2017)	Indiana	V	•		
Egalite, Gray, and Stallings (2017)	North Carolina	V	•		
Black (2015)	Florida	V		•	
Kisida and Wolf (2015)	Washington, D.C.	V	•		
Witte et al. (2008)	Milwaukee, WI	V	•		
Weidner and Herrington (2006)	Florida	V	•		
Greene and Forster (2003)	Florida	V	•		
Witte (2000)	Milwaukee, WI	V	•		
Metcalf (1999)	Cleveland, OH	V	•		
Peterson, Howell, and Greene (1999)	Cleveland, OH	V	•		
Greene, Howell, and Peterson (1998)	Cleveland, OH	V	•		
Catt and Rhinesmith (2016)	Indiana	V/TCS*	•		
DiPerna (2014)	Indiana	V/TCS†	•		

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

\*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.

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."

# Parent Satisfaction Impacts from Private Educational Choice Programs *(continued)*

Study	Location	Program Type	Any Positive Effect	No Visible Effect	Any Negative Effect
Catt and Cheng (2019)	Arizona	TCS			•
Department of Revenue Administration (2018)	New Hampshire	TCS	•		
Catt and Rhinesmith (2017)	Indiana	TCS	•		
Kelly and Scafidi (2013)	Georgia	TCS	•		
Howell and Peterson (2002)	Dayton, OH	P	•		
Howell and Peterson (2002)	New York, NY	P	•		
Howell and Peterson (2002)	National	P	•		
Howell and Peterson (2002)	Washington, D.C.	P	•		
Peterson and Campbell (2001)	National	P	•		
Greene (2001)	Charlotte, NC	P	•		
Peterson, Campbell, and West (2001)	San Francisco, CA	P	•		
Peterson, Myers, and Howell (1999)	San Antonio, TX	P	•		
Weinschrott and Kilgore (1998)	Indianapolis, IN	P	•		

TCS=Tax-Credit Scholarship

P=Private Scholarship

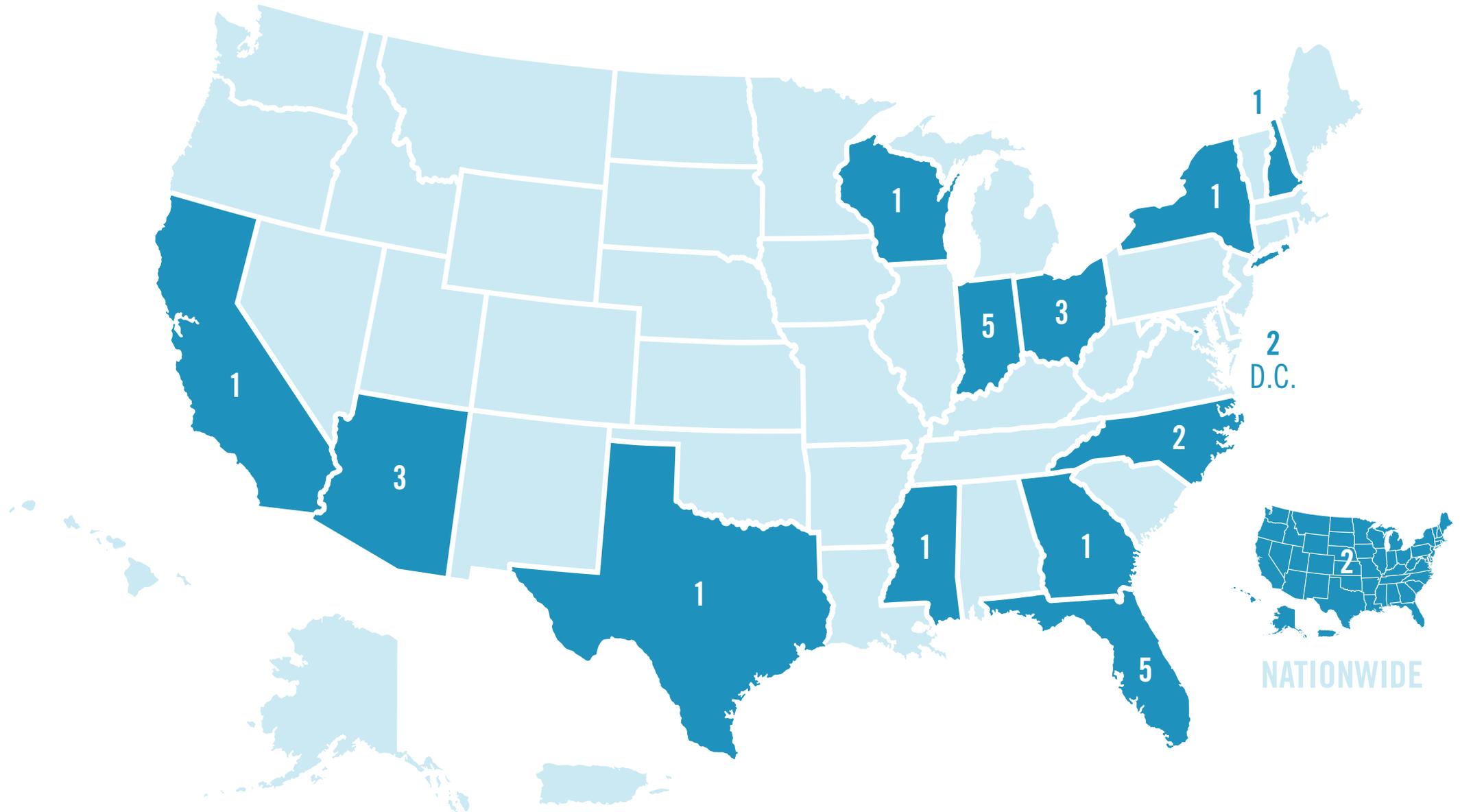
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# Number of Studies on Parent Satisfaction by Location



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# Public School Student's Test Scores

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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.**

Of the **28 studies** that examine the competitive effects of school choice programs, **25** found positive effects, **one** found no visible effect and **two** found negative effects.

# Academic Outcomes of Public Schools from All Empirical Studies

Study	Location	Program Type	Any Positive Effect	No Visible Effect	Any Negative Effect
Canbolat (2021)	Indiana	V			•
Egalite and Mills (2021)	Louisiana	V	•		
Egalite and Catt (2020)	Indiana	V	•		
Figlio and Karbownik (2016)	Ohio	V	•		
Bowen and Trivitt (2014)	Florida	V			•
Chakrabarti (2013)	Florida	V	•		
Carr (2011)	Ohio	V	•		
Winters and Greene (2011)	Florida	V	•		
Mader (2010)	Milwaukee, WI	V	•		
Greene and Marsh (2009)	Milwaukee, WI	V	•		
Chakrabarti (2008)	Milwaukee, WI	V	•		
Forster (2008)	Ohio	V	•		
Forster (2008)	Florida	V	•		
Carnoy et al. (2007)	Milwaukee, WI	V	•		
Greene and Winters (2007)	Washington, D.C.	V		•	

V=Voucher

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

*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."

## Academic Outcomes of Public Schools from All Empirical Studies *(continued)*

Study	Location	Program Type	Any Positive Effect	No Visible Effect	Any Negative Effect
Figlio and Rouse (2006)	Florida	V	•		
West and Peterson (2006)	Florida	V	•		
Greene and Winters (2004)	Florida	V	•		
Greene and Forster (2002)	Milwaukee, WI	V	•		
Hammons (2002)	Maine	V	•		
Hammons (2002)	Vermont	V	•		
Hoxby (2002)	Milwaukee, WI	V	•		
Greene (2001)	Florida	V	•		
Figlio et al. (2021)	Florida	TCS	•		
Figlio and Hart (2014)	Florida	TCS	•		
Rouse et al. (2013)	Florida	TCS	•		
Gray, Merrifield, and Adzima (2016)	San Antonio, TX	P	•		
Greene and Forster (2002)	San Antonio, TX	P	•		

V=Voucher

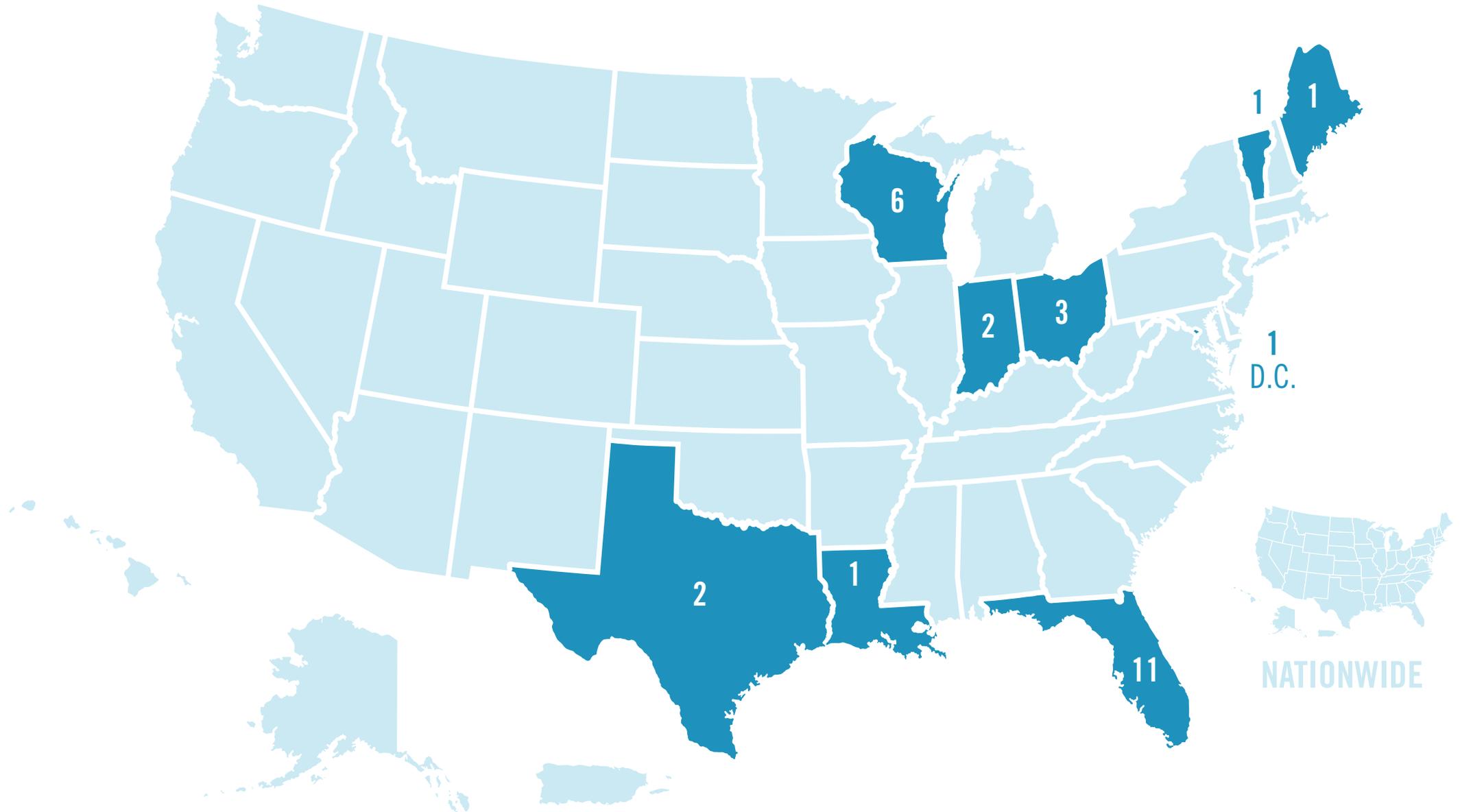
TCS=Tax-credit scholarship

P=Private scholarship

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

*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 Public School Students' Test Score by Location



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# Civic Values and Practices

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These studies examine whether school choice programs have an effect on students' tolerance for the rights of others, civic knowledge, engaging in criminal activity, civic participation, volunteerism, social capital, civic skills, voter registration and voter turnout as well as patriotism.

Of the 11 studies of this kind, six found positive effects. Five found no visible effect, and none found negative effects.

## Civic Values and Practices from All Empirical Studies

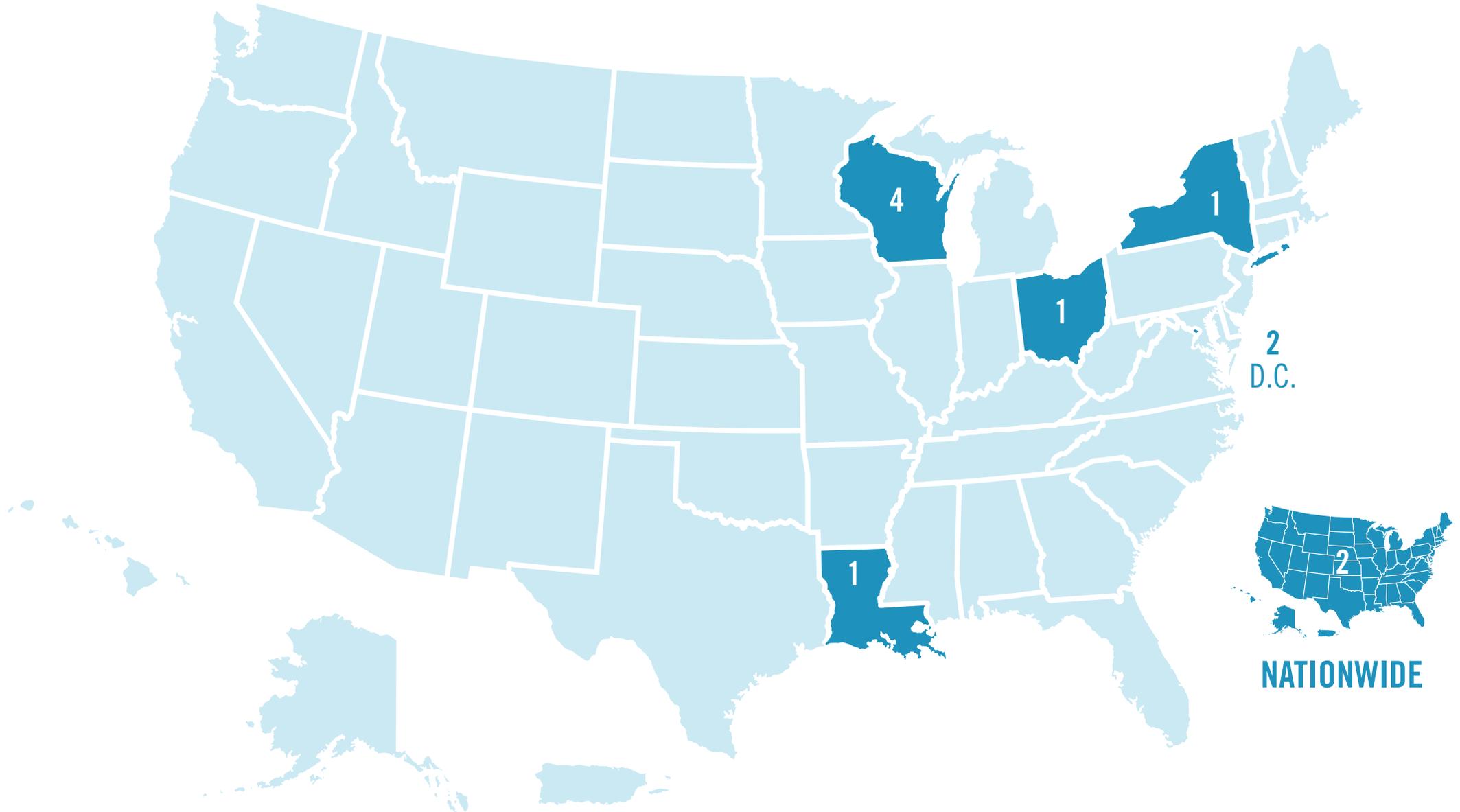
Study	Location	Program Type	Any Positive Effect	No Visible Effect	Any Negative Effect
DeAngelis and Wolf (2020)	Milwaukee, WI	V	•		
DeAngelis and Wolf (2018)	Milwaukee, WI	V		•	
Mills et al. (2016)	Louisiana	V		•	
Fleming, Mitchell, and McNally (2014)	Milwaukee, WI	V	•		
Fleming (2014)	Milwaukee, WI	V	•		
Carlson, Chingos, and Campbell (2017)	New York, NY	P		•	
Bettinger and Slonim (2006)	Toledo, OH	P	•		
Howell and Peterson (2006)	Washington, D.C.	P		•	
Campbell (2002)	National	P	•		
Peterson and Campbell (2001)	Nationwide	P		•	
Wolf, Peterson, and West (2001)	Washington, D.C.	P	•		

V=Voucher

P=Private scholarship

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



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# Racial / Ethnic Integration

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These studies examine the effect of school choice programs on racial and ethnic diversity in schools.

Of the **seven studies** that have examined school choice's effect on integration in schools, **six** found positive effects. **One** was unable to detect any effects, and **none** found negative effects.

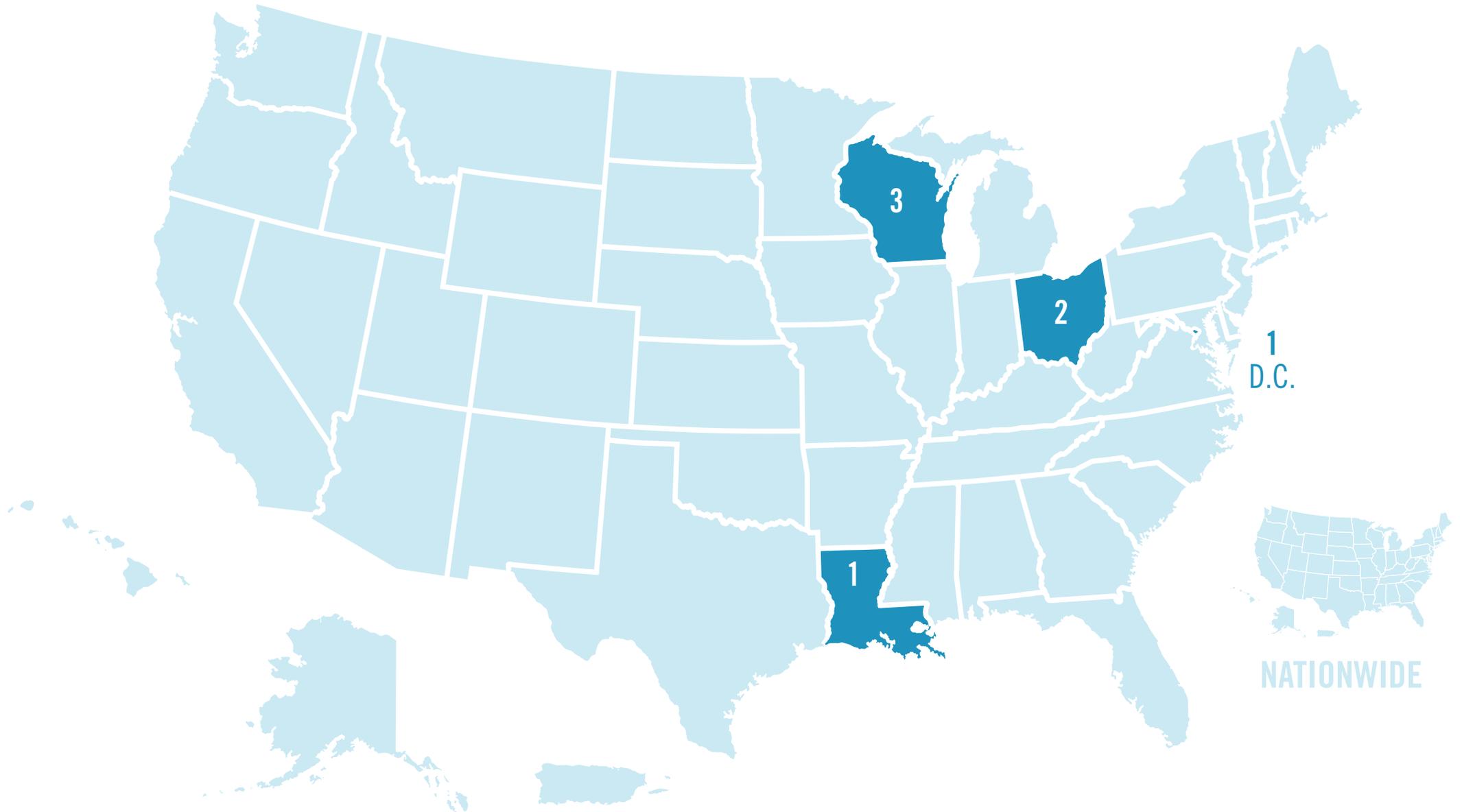
## Racial Integration from All Empirical Studies

Study	Location	Program Type	Any Positive Effect	No Visible Effect	Any Negative Effect
Egalite, Mills, and Wolf (2017)	Louisiana	V	•		
Greene, Mills, and Buck (2010)	Milwaukee, WI	V		•	
Greene and Winters (2007)	Washington, D.C.	V	•		
Forster (2006)	Milwaukee, WI	V	•		
Forster (2006)	Cleveland, OH	V	•		
Fuller and Mitchell (2000)	Milwaukee, WI	V	•		
Greene (1999)	Cleveland, OH	V	•		

V=Voucher

*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."

# Number of Studies on Racial/Ethnic Integration by Location



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# Fiscal Effects

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These studies examine whether school choice programs **generate net savings, net costs** or are **cost-neutral** for taxpayers.

Of the **73 studies** on the fiscal effects of private school choice programs, **68** found programs generated savings for taxpayers.

**Four** found those programs were cost-neutral. **Five studies** has found a private school choice program generated net costs.

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

Study	Location	Program Type	Any Positive Effect	No Visible Effect	Any Negative Effect
Lueken (2021)	Arizona	ESA	•		•
Lueken (2021)	Florida	ESA	•		
Lueken (2021)	Mississippi	ESA	•		
PEER Mississippi# (2018)	Mississippi	ESA			•
Faulk and Hicks (2021)	Indiana	V	•		
Lueken (2021)	Washington, D.C.	V	•		
Lueken (2021)	Florida	V	•		
Lueken (2021)	Georgia	V	•		
Lueken (2021)	Indiana	V	•		
Lueken (2021)	Louisiana	V	•		
Lueken (2021)	Louisiana	V	•		
Lueken (2021)	Mississippi	V	•		
Lueken (2021)	North Carolina	V	•		
Lueken (2021)	North Carolina	V	•		
Lueken (2021)	Cleveland, OH	V	•		
Lueken (2021)	Ohio	V	•		
Lueken (2021)	Ohio	V	•		
Lueken (2021)	Ohio	V	•		
Lueken (2021)	Ohio	V	•		
Lueken (2021)	Oklahoma	V	•		
Lueken (2021)	Utah	V	•		
Lueken (2021)	Milwaukee, WI	V	•		
Lueken (2021)	Racine, WI	V	•		
Lueken (2021)	Wisconsin	V	•		•
DeAngelis (2020)	Wisconsin	V	•		

ESA=Education Savings Account

V=Voucher

\*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

*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)*

Study	Location	Program Type	Any Positive Effect	No Visible Effect	Any Negative Effect
Trivitt and DeAngelis (2020)	Louisiana	V	•		
Trivitt and DeAngelis (2018)	Arkansas	V	•		
Wisconsin LAB* (2018)	Wisconsin	V		•	
DeAngelis and Trivitt (2016)	Louisiana	V	•		
Spalding (2014)	Florida	V	•		
Wolf and McShane (2013)	Washington, D.C.	V	•		
Costrell (2010)	Milwaukee, WI	V	•		
Aud (2007)	Vermont	V		•	
Aud (2007)	Maine	V		•	
Aud (2007)	Florida	V	•		
Aud (2007)	Florida	V	•		
Aud (2007)	Washington, D.C.	V	•		
Aud (2007)	Cleveland, OH	V	•		
Aud (2007)	Ohio	V	•		
Aud (2007)	Utah	V		•	
Aud (2007)	Milwaukee, WI	V	•		
Aud and Michos (2006)	Washington, D.C.	V	•		
Nikolov and Mangum (2021)	Virginia	TCS	•		
Lueken (2021)	Alabama	TCS	•		•
Lueken (2021)	Arizona	TCS	•		
Lueken (2021)	Arizona	TCS	•		
Lueken (2021)	Arizona	TCS	•		
Lueken (2021)	Arizona	TCS	•		
Lueken (2021)	Florida	TCS	•		

V=Voucher      TCS=Tax-credit scholarship

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

Study	Location	Program Type	Any Positive Effect	No Visible Effect	Any Negative Effect
Lueken (2021)	Georgia	TCS	•		
Lueken (2021)	Indiana	TCS	•		
Lueken (2021)	Iowa	TCS	•		
Lueken (2021)	Kansas	TCS	•		•
Lueken (2021)	Louisiana	TCS	•		
Lueken (2021)	New Hampshire	TCS	•		
Lueken (2021)	Oklahoma	TCS	•		
Lueken (2021)	Pennsylvania	TCS	•		
Lueken (2021)	Pennsylvania	TCS	•		
Lueken (2021)	Rhode Island	TCS	•		
Lueken (2021)	South Carolina	TCS	•		
Lueken (2021)	Virginia	TCS	•		
Erickson and Scafidi (2020)	Georgia	TCS	•		
Sheasby** (2020)	Arizona	TCS	•		
Dearmon and Evans (2018)	Oklahoma	TCS	•		
Girardi and Gullickson (2017)	Iowa	TCS	•		
SummaSource (2017)	Alabama	TCS	•		
LOEDR‡ (2012)	Florida	TCS	•		
OPPAGA§ (2008)	Florida	TCS	•		
Aud (2007)	Arizona	TCS	•		
Aud (2007)	Pennsylvania	TCS	•		
Aud (2007)	Florida	TCS	•		
Collins Center for Public Policy (2007)	Florida	TCS	•		
Merrifield & Gray (2009)	San Antonio, TX	P	•		

TCS=Tax-credit scholarship

P=Private scholarship

\*State of Wisconsin Legislative Audit Bureau

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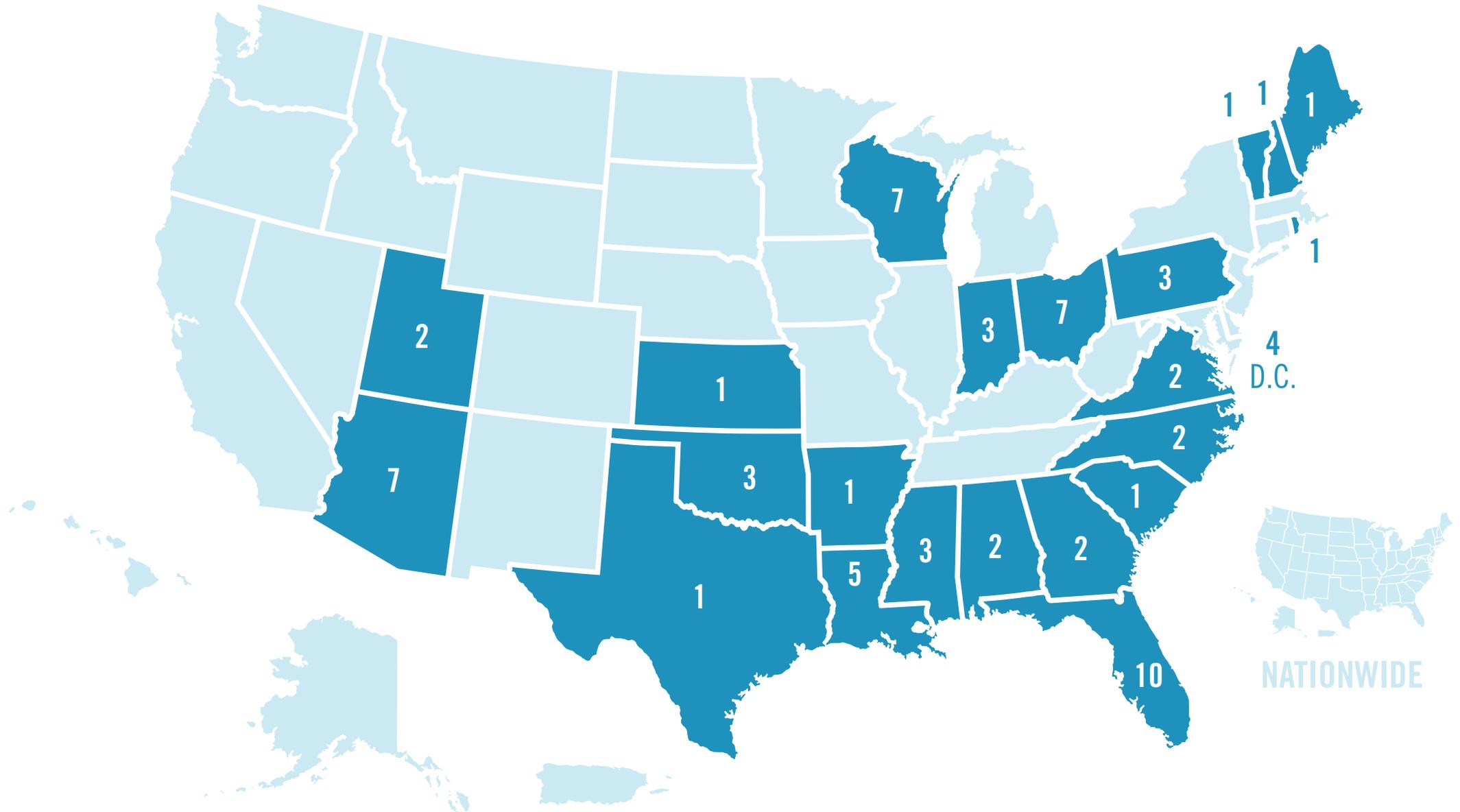
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# Number of Studies on Fiscal Effects on Taxpayers and Public Schools by Location



## How We Searched for Studies

EdChoice regularly monitors research on private school choice. We most recently conducted a systematic search from January 2021 through February 2022. We searched several databases including EconLit, ERIC, JSTOR, ProQuest, PsychINFO, and Google Scholar. We also searched individual publications and working paper series such as Education Next, National Bureau of Economic Research, Annenberg (Brown University), and Journal of School Choice. Ten different search terms were used, including “school choice,” “school voucher,” “tax credit scholarships,” “tuition tax credits,” “education savings accounts,” and “ESA.”

We also enlisted Hanover Research to conduct an additional search using similar search methods. The search period was 1995 to 2017. EdChoice then analyzed the results and papers to see whether the hundreds of results met our inclusion criteria. Since then, Hanover and EdChoice have also conducted searches on a periodic basis. Results from these processes are reflected in the present slide deck.

# How We **Included** and **Counted** Studies

- We based our inclusion and counting criteria on methods used in EdChoice's 123s of School Choice: What the Research Says About Private School Choice Programs in America (2020 Ed.) report.
- A "study" is defined as an analysis of a school choice program. We consider multiple studies on one program as unique if they study a different group of students or use different statistical models or research 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 are classified as "no visible effect."

## How We **Included** and **Counted** Studies

- In a statistical sense, "no visible effect" means that data were insufficient to detect any effect (if there was an effect); it does not necessarily mean that there were no differences in outcomes between the comparison groups.
- In light of the limited body of research on many outcomes that have been studied, we report results for studies based on both random assignment (whenever possible) and acceptable nonexperimental methods until 10 random assignment studies based on unique student populations become available.
- Recent studies of the Louisiana Scholarship Program have included science and social studies test scores as outcomes included in those analyses. All other studies with test scores as measured outcomes have analyzed only math and reading outcomes. With the exception of one statistically significant negative point estimate (out of many point estimates), there have been no visible effects on social studies and science outcomes.

## Caveat

While these counting methods allow us to present information easily, **they can mask other important factors**, such as how big an effect is or how much of an effect is due to a certain program design.

# Research Studies on ESA Programs

Author	Location	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect
<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 (2018)#	Mississippi	Equal Opportunity for Students with Special Needs Program			•

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# Research Studies on Voucher Programs

Author	Location	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect
<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>					
Austin and Pardo (2021)	Indiana	Choice Scholarship Program	•		
Erickson, Mills, and Wolf (2021)	Louisiana	Louisiana Scholarship Program		•	
Chingos et al. (2019)	Washington, D.C.	Opportunity 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	•		
Metcalf (1999)	Cleveland, OH	Cleveland Scholarship Program	•		
Peterson, Howell, and Greene (1999)	Milwaukee, WI	Cleveland Scholarship Program	•		
Greene, Howell, and Peterson (1998)	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.

§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	Location	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect
<b>Academic Outcomes of Public Schools from All Empirical Studies</b>					
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‡	•		
<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	•		

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# Research Studies on Voucher Programs *(continued)*

Author	Location	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect
<b>Racial Integration from All Empirical Studies</b>					
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>					
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	•		
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)	•		•

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†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.

§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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# Research Studies on Voucher Programs *(continued)*

Author	Location	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect
<b>Fiscal Effects on Taxpayers and Public Schools from All Empirical Studies</b>					
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.

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# Research Studies on Tax-Credit Scholarship Programs

Author	Location	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect
<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 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. (2021)	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	•		

\*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

‡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)

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	Location	Program Name	Any Positive Effect	No Visible Effect	Any Negative Effect
<b>Fiscal Effects on Taxpayers and Public Schools from All Empirical Studies</b>					
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	•		
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	•		
Girardi and Gullickson (2017)	Iowa	School Tuition Organization Tax Credit	•		
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	•		

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\*\* 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

‡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)

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# Research Studies on Privately-Funded Programs

Author	Location	Any Positive Effect	No Visible Effect	Any Negative Effect
<b>Test Score Outcome of Participants from Random Assignment Studies</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 from All Empirical Studies</b>				
Cheng, Chingos, and Peterson (2019)*	New York, NY	•	•	
<b>Parent Satisfaction Impacts from Private Educational Choice Programs</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	•		

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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 Studies on Privately-Funded Programs *(continued)*

Author	Location	Any Positive Effect	No Visible Effect	Any Negative Effect
<b>Academic Outcomes of Public Schools from All Empirical Studies</b>				
Gray, Merrifield, and Adzima (2016)	San Antonio, TX	•		
Greene and Forster (2002)	San Antonio, TX	•		
<b>Civic Values and Practices from All Empirical Studies</b>				
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.	•		
<b>Fiscal Effects on Taxpayers and Public Schools from All Empirical Studies</b>				
Merrifield & Gray (2009)	San Antonio, TX	•		

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