The Impact of the North Carolina Opportunity Scholarship Program

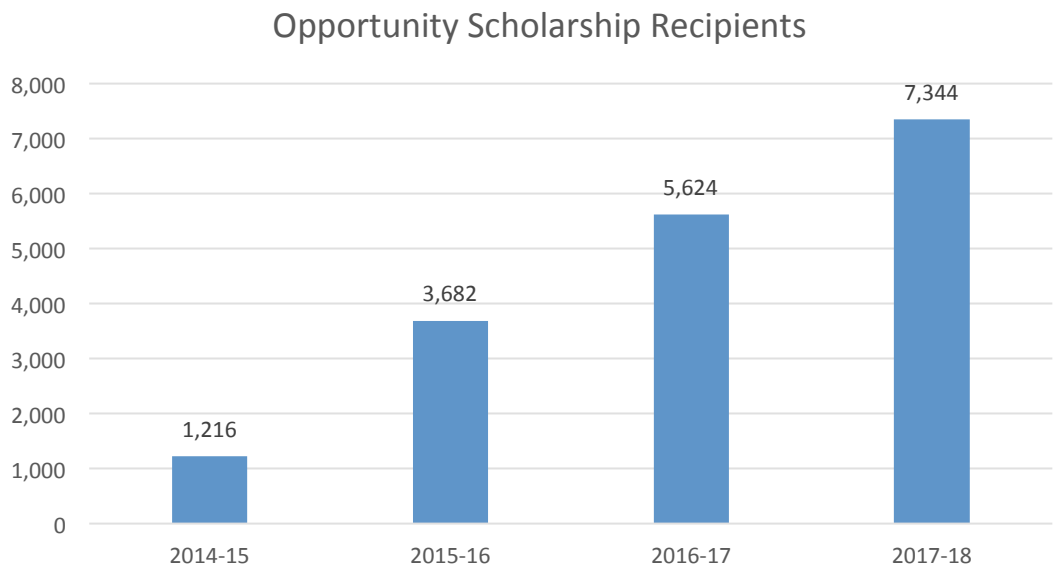
Anna J. Egalite & Stephen R. Porter
North Carolina State University

Prepared for the John Locke Foundation's Shaftesbury Lunch

June 25, 2018

Program Description

- Enacted in 2013, first implemented in fall 2014
- Provides state funds for eligible students in K to grade 12 to offset cost of private school tuition and fees
- Scholarships worth up to $4,200 per student, per year



*Eligibility: Predominantly means-tested; previously enrolled in NC public school – or – entering Kindergarten – or – in foster care/ adopted – or – full-time military family

Similar Programs in Other States

Key Characteristics	*NC*	*FL*	*IN*	*LA*
Program Design	Voucher	Tax Credit	Voucher	Voucher
Max Voucher Value (2016-17)	$4,200	$5,886	$6,473	$10,090
Avg Voucher Value (2015-16)	$4,116	$5,476	$4,520 (1-8) $5,496 (9-12)	$5,856
Participating Schools Can Charge More than Voucher Value?	Yes	Yes	Yes	No
School-Specific Admission Standards	Yes	Yes	Yes	No
Private Students Eligible?	No	Yes	No	No
Academic Accountability	Norm-referenced test of choice	Norm-referenced test of choice	State Test	State Test
Non-Public School Participation Rate (2016-17)	~60%	~69%	~45%	~34%

Reports Released to Date

#1: Private School Leaders' Perspectives: Findings from statewide survey, focus groups (July 2017)

#2: Parents' Perspectives: Findings from statewide survey, focus groups (July 2017)

#3: A Profile of Voucher Applicants: Demographic characteristics of the participating student population (Aug 2017)

#4: Test Score Impact Pilot Evaluation (June 2018)

#5: Overview of Work To Date (June 2018)

http://go.ncsu.edu/osp

Data Sources

- Applicants' **demographic** data *(provided by NCSEAA)*
- **Historical** demographic and prior test score data *(provided by NC DPI)*
- Online **surveys** distributed to all private school leaders and families that applied for the voucher *(original data collection*)
- Statewide **focus groups** with school leaders and parents of applicants *(original data collection)*
- **Academic achievement** data on a common assessment *(original data collection)*

What We Know So Far

Descriptive Data about Applicants to the Program

Participating Students: Eligibility

- The median adjusted household income for recipients is low (about **$16,000**)
- The number of **ineligible applicants** remains high (e.g., nearly 2,000 in 2016-17), but half of those were deemed ineligible for reasons other than household income (e.g., student not enrolled in a public school in previous year)

*Adjusted household income allows for more meaningful comparisons of income across households of different size and is calculated by dividing gross household income by the square root of household size.

Participating Students: Demographics

- Student recipients in **97 of 100 counties** in 2016-17
- Relative to the state as a whole, greater proportion of **elementary-aged** students and much smaller proportion of high school-aged students
- Greater representation of **African-American** students relative to other groups

What We Know So Far

Private School Leaders' Perceptions

Private School Leaders' Perceptions

Top Reasons for Participation

- Serve more disadvantaged students (81% moderately to very important)
- Provide alternative to public school curriculum (63%)
- Increase racial and SES integration in their school (61%)

"[T]he program . . . is bringing people who wanted desperately to have this opportunity to have the school choice, and these parents are delightful, they've added to our culture, the children are delightful and wonderful and are doing wonderfully."

Private School Leaders' Perceptions

Top Concerns about Participation

- Possibility of future regulations that would change requirements for participating in OS (86%)
- Possibility that value of OS voucher will not increase to match increases in the cost to educate students (73%)
- Calendar

"The board leadership of the school is concerned about political entanglements that comes [sic] from receiving state and/or federal funding."

"[We have c]oncerns that opportunity scholarship students may require more resources than we have to offer."

What We Know So Far

Applicant Families' Perceptions

Applicant Families' Perceptions

Top Reasons for Application

- Dissatisfaction with public school quality (35%)
- Concerns about school safety (26%)
- Almost all (94%) said educational quality was a very important consideration; only 33% said access to extracurricular activities was very important

"The quality of [our previous] school was lacking. . . . We planned to move to a smaller house and try to take on additional jobs . . . to ensure he could return to a private school. . . ."

Evaluating the Academic Impact of the Opportunity Scholarship

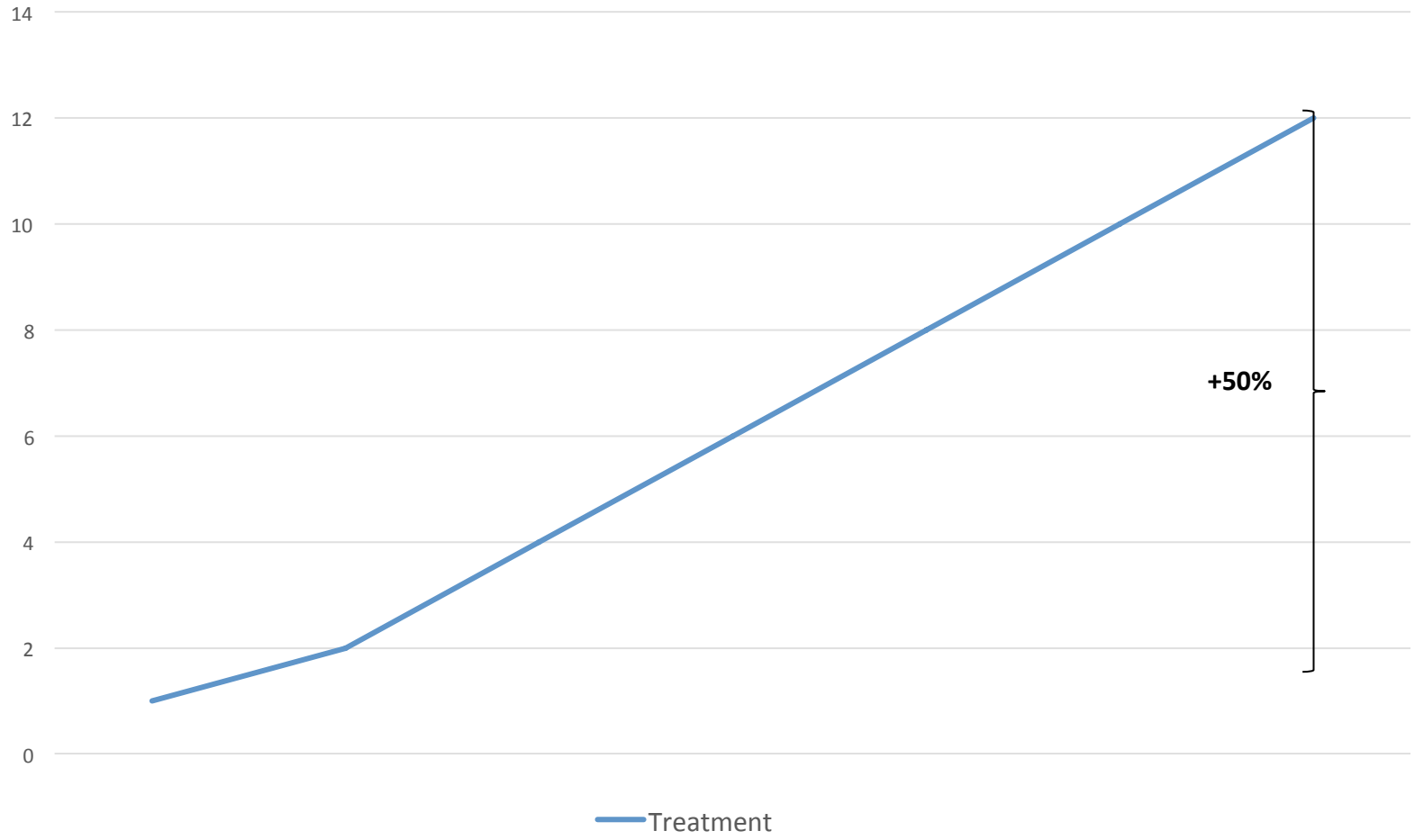
Goals, Challenges, and Tentative First Steps

Designing a School Choice Evaluation

BEFORE

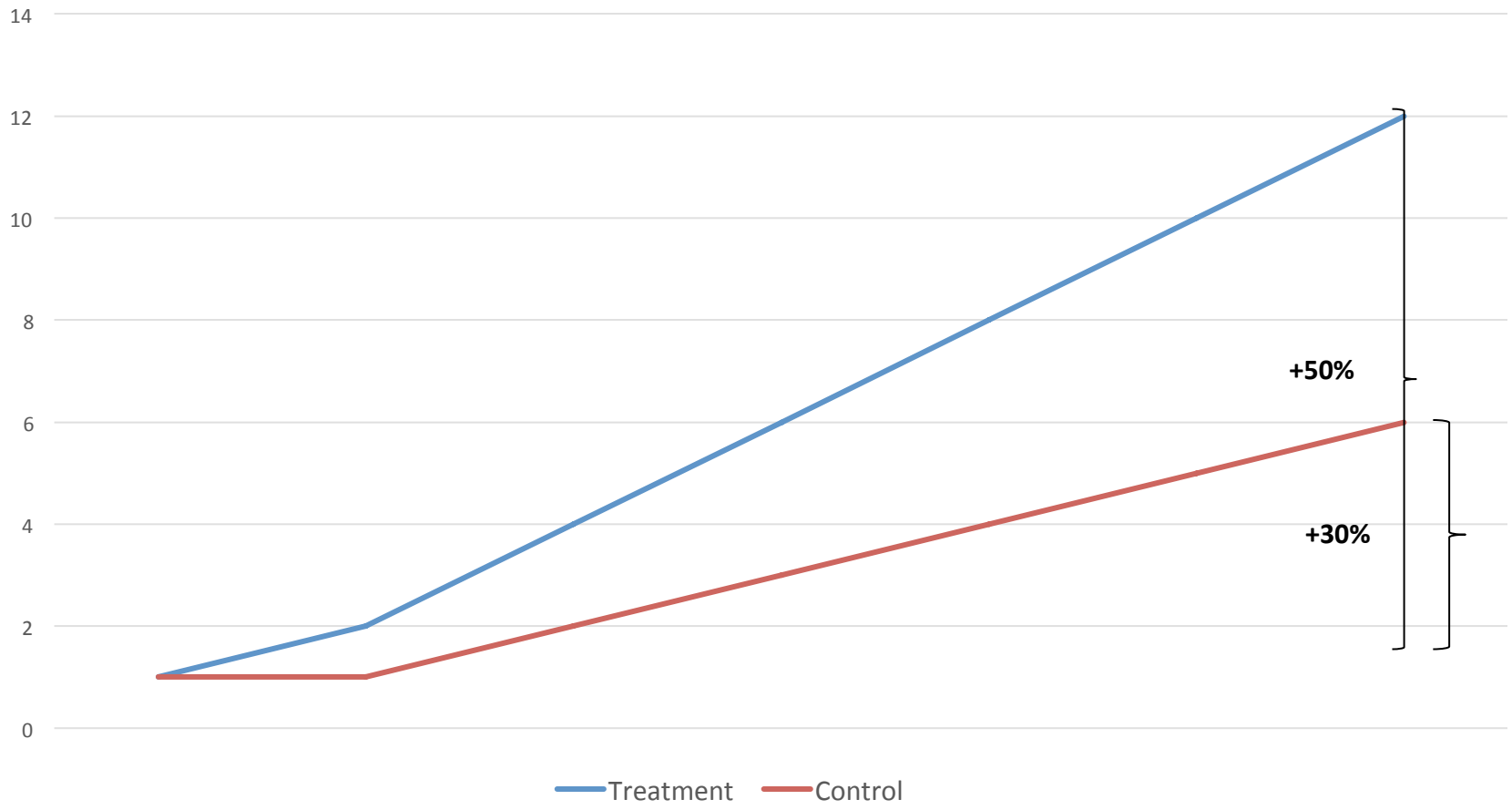
AFTER

Designing a School Choice Evaluation



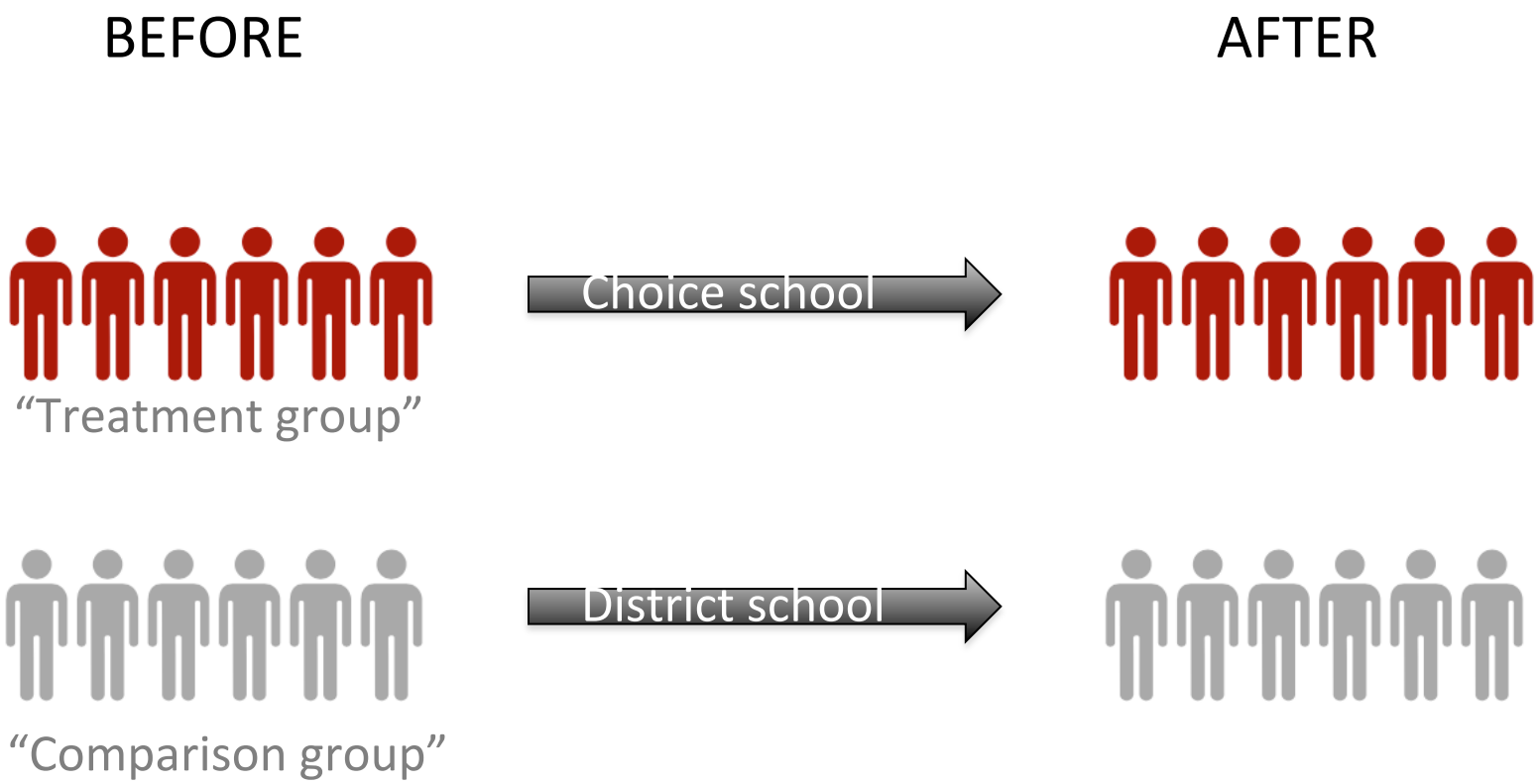
Examining this hypothetical treatment group alone gives the impression that student performance increased by 50%

Designing a School Choice Evaluation



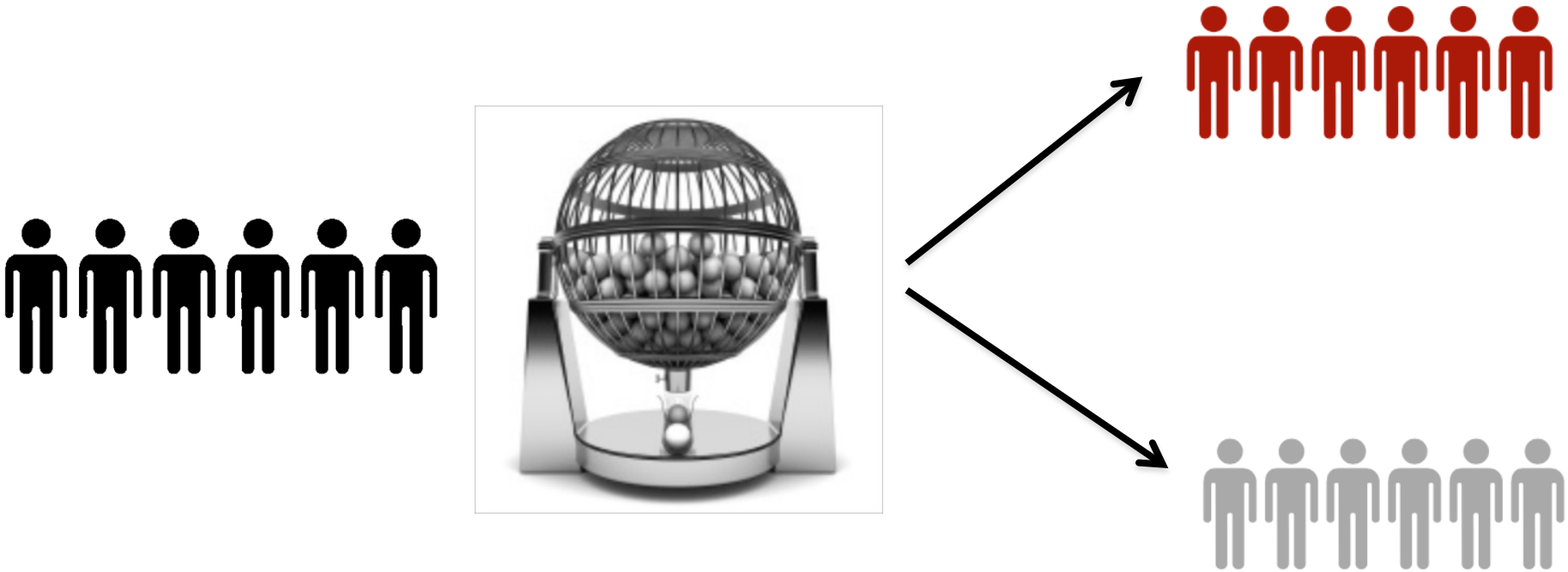
Here's the problem: In the absence of the intervention, student performance would have increase by 30%

Designing a School Choice Evaluation



Defining this comparison group is key.

Randomized Control Trials: The "Gold Standard"

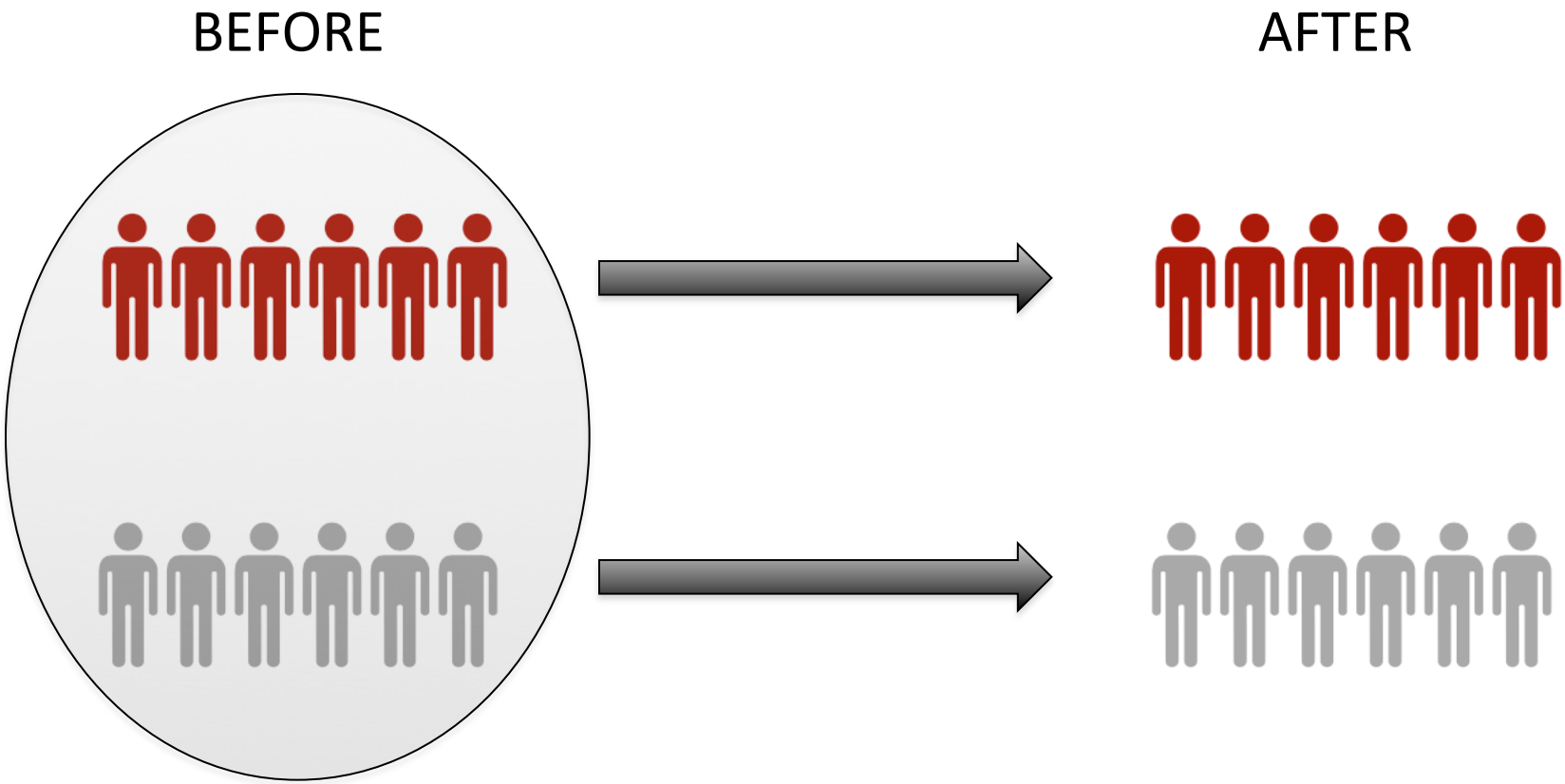


Those who lost the lottery form the ideal comparison group because they're similar to voucher winners in all kinds of observable and un-observable ways. The researcher can be sure that any difference in outcomes was caused by the program.

What if a “Gold Standard” Evaluation isn’t Possible?

What if a “Gold Standard” Evaluation isn’t Possible?

How “Matching” Works



Recent Quasi-Experimental Studies

- Ohio (Figlio & Karbownik, 2016)
  - Propensity score matching
  - Negative impacts
- Indiana (Waddington & Berends, 2017)
  - Difference-in-differences model with propensity score matched students
  - Null overall effect:
    - Negative math impact in Y1; no ELA effect
    - Negative effects disappear by Y4
- North Carolina (Egalite, Stallings, & Porter 2018)
  - Propensity score matching
  - Positive impacts

The Impetus for an Analysis of Academic Impact

- North Carolina General Statute 115C-562—calls for an evaluation of the *"learning gains or losses of students receiving scholarship grants*," as compared to similar students in public schools.
- There has been no official state-supported evaluation conducted to date.
- NC State University's mission as a land-grant institution.

1

Barriers to an Academic Impact Analysis

No common metric by which to compare performance

- Private schools can administer any nationally normed standardized test of their choosing
- Comparable public school students take the criterion-referenced state test (EOGs, EOCs)

Table 2.
Standardized Assessments Taken by Opportunity Scholarship Students, 2014-15

Test Name	Publisher	Number of Students
Basic Achievement Skills Inventory (BASI)	Brewer Testing Services	3
BJU Press Assessments	BJU Press	2
California Achievement Test (CAT)	Seton Testing Services	33
Comprehensive Testing Program (CTP)	Educational Records Bureau	19
Iowa Assessments	Houghton Mifflin Harcourt	204
Otis-Lennon School Ability Test (OLSAT)	Pearson	3
Stanford Achievement Test	Pearson	272
TerraNova	Data Recognition Corporation	303
Woodcock Johnson	Houghton Mifflin Harcourt	9
TOTAL		848

Source: The North Carolina State Education Assistance Authority

2

Barriers to an Academic Impact Analysis

No requirement for private schools or OS students to participate in an evaluation

- Researchers must recruit school leaders
- Researchers must recruit student volunteers
- Rules out any chance of achieving a large and representative sample that would permit inference about the “average” OS user or about important subgroups

Table 4.
Description of Public and Private Schools in Sample

	Private	Public
Tested Students Per School		
Median	7	23
Mean	12	35
Min	1	4
Max	43	166
School Has a Library or Media Center	0.95	n/a
Religious Affiliation		
Catholic	0.53	n/a
Baptist	0.16	n/a
Christian (no specific denomination)	0.26	n/a
Other Religion (e.g., Methodist, Episcopal)	0.05	n/a
School Type		
Private	1.00	0.00
Traditional Public School	0.00	0.93
Charter	0.00	0.00
Magnet	0.00	0.07
School Wide Title 1	n/a	1.00
Enrollment		
Median	225	649
Mean	399	640
Min	107	342
Max	1402	933
School Community Type		
City	0.74	0.36
Suburb or Town	0.16	0.14
Rural	0.11	0.50
Racial Composition		
Average of School Percent White	0.64	0.14
Average of School Percent Black	0.15	0.49
Average of School Percent Hispanic	0.13	0.31

Source: U.S. Department of Education

3

Barriers to an Academic Impact Analysis

Availability of Descriptive Data on NC Private Schools

- It is the Division of NPE's practice to publish *only data for the current school year.* Data from previous years scrubbed from website; only available in paper form thereafter
- When converting paper records to digital format, our team identified multiple inconsistencies and missing values in data provided by the Division of NPE

4

Barriers to an Academic Impact Analysis

No specific state evaluation budget

- Funding provided to NCSEAA for administration of the program must be used to maximize the number of students who receive vouchers, cover the costs of running a rapidly-expanding program, *and* fund an evaluation.

Our Efforts To Address The Knowledge Gap

- Fundraising
  - Three organizations on different sides of the issue
- Relationship Building
  - Four public school districts
  - Public agencies: SEAA, DPI
  - Local universities
  - PEFNC, private school associations, individual private school leaders
- Building a digital private school database
- Recruitment:
  - 698 student volunteers in 38 public and private schools to take the ITBS short form
  - Matching analysis

Findings

Table 7.
Achievement Impact Associated with Participation in the North Carolina Opportunity Scholarship Program

		OLS results			Effect sizes			*n*		
Treatment group	Covariates	Math	Reading	Language	Math	Reading	Language	T	C	Total
New OS recipients	No	6.890*	3.863	7.852*	0.38	0.21	0.44	89	156	245
		(2.789)	(3.041)	(2.914)						
	Yes	6.487**	3.902+	7.891**	0.36	0.22	0.44	89	156	245
		(2.221)	(2.136)	(2.483)						
	Yes & change in EOG	6.709*	4.482	8.807	0.37	0.25	0.49	72	98	170
		(2.553)	(2.403)	(2.498)						

Notes: Coefficients are for private school status from regressions with ITBS composite scores in math, reading, and language as the dependent variable, using inverse propensity weighting. Standard errors in parentheses; clustered at the 2017 school level. + $p<.10$, * $p<.05$, ** $p<.01$.

Strengths of This Approach

- **A consistent outcome measure**: Students are compared on a common metric that is not aligned to a particular set of standards
- **Internal validity**: A quasi-experimental matching approach compares OS users to statistically-similar public school students (matched in terms of region, prior achievement, prior discipline records, demographic characteristics, grade level, etc.), thus mitigating many sources of selection bias.
- **Documents specific barriers** to a more rigorous evaluation

Limitations of this Approach

- **Low external validity:** Impossible to achieve a representative sample, given the volunteer nature of school and student recruitment.
    - Implication: We can draw valid inferences about this sample of OS users, but we can not speak about the experience of the “average” OS user

Steps Towards a Causal Evaluation

1. Cap participation so the program is oversubscribed, thus generating treatment and control groups that are similar in both observable and unobservable ways.

2. To ensure a representative sample, request schools and students to **agree to participate** in a program evaluation at the point of application.

3. Compare public and private school performance on the **same assessment.**

Contact Information

Anna J. Egalite
Department of Educational Leadership,
Policy, and Human Development, NCSU
anna_egalite@ncsu.edu

Stephen R. Porter
Department of Educational Leadership,
Policy, and Human Development, NCSU
srporter@ncsu.edu

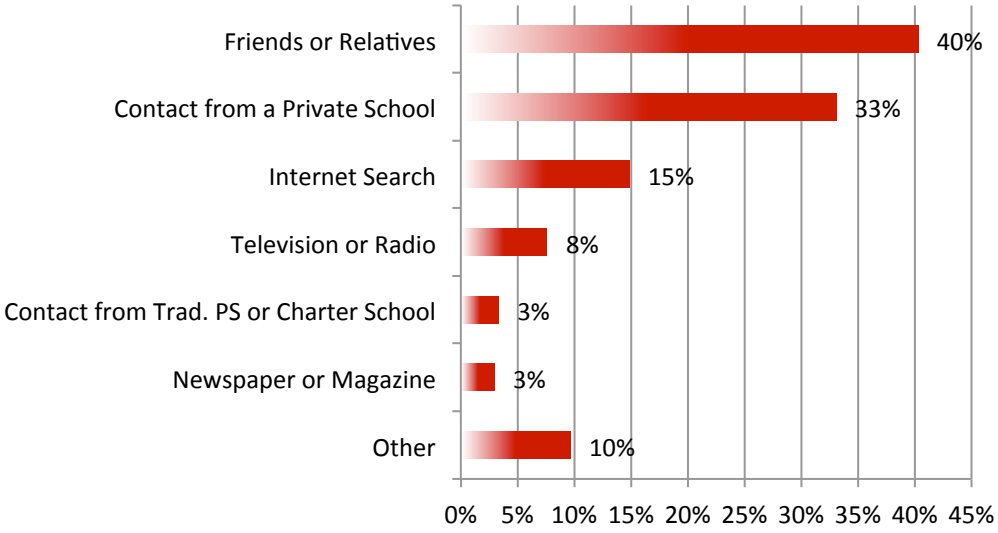
Appendix

Background: Participating Schools

- Of over 700 private schools statewide, just over **half** (359) enrolled OS students in 2016-17
- ~100 more schools each year were *willing* to enroll OS students (109 in 2014-15, 101 in 2015-16, 78 in 2016-17)
- More participating schools indicate religious affiliation (76%) than do non-participating schools (42%)

Participating Students: Other Factors

- Strength of family/community information networks
- Timing of the application and timing of non-public school enrollment periods
- Proximity of participating non-public schools



"We did not know anything about the scholarship. I think a friend of ours told us. . . ."

"[B]ecause of connection with our Spanish church, our Spanish pastors . . . will . . . give the information out to their Spanish members of the church . . . ."

Applicant Families' Perceptions

Top Reasons for Non-Use

- Hidden or unanticipated costs (e.g., transp., food)
- Net cost of tuition/fees (e.g., 79% of OS users reported partial coverage)
- Top non-participating student landing spots:
  - Non-public school (self-financed, scholarship; 45%)
  - Trad. public school (32%)
  - Charter school (7%)

Number of Schools Considered: