An Applied Researcher's Guide to Estimating Effects From Multisite Individually Randomized Trials: Estimands, Estimators, and Estimates

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Online Appendix C: Synopsis of Studies

Early Childhood – Elementary School

Head Start Impact Study
Program: The Head Start (HS) program seeks to improve school readiness among children from low-income families. The most common HS programs operate as center-based programs, engaging with children primarily in a classroom setting and providing at least two home visits per year. Other models include home-based programs, family child care programs, and combination programs. HS can last for up to two years.
Target Population: Low-income children (3- to 4-year-olds) in a nationally representative sample of HS programs, excluding programs intended to serve certain target populations.
Study Design: Individual random assignment within HS centers. The study compares students who were offered enrollment in HS with students who were not allowed to enroll in HS.
Outcomes: Cognitive measures from an abbreviated version of the Peabody Picture Vocabulary Test-III, and the Letter-Word Identification, Oral Comprehension, and Applied Problems subscales of the Woodcock-Johnson III. Socioemotional measures created based on parent-reported items from the Child Behavior Checklist and the Leiter-R Assessor Report. All assessments were done at the end of the year in which the student enrolled in Head Start.
Sample Size: Around 300 HS centers and around 3,500 children.
Report: Bloom and Weiland (2015); Puma et al. (2010).

After School—Reading
Program: Academically rigorous, structured after-school program using the Success for All reading curriculum. The program lasts for up to two years.
Target Population: Students in Grades 2 through 5 attending an after-school program.
Study Design: Individual random assignment within each unique after-school center, grade, and cohort block. The study compares students who were selected to attend an academically oriented after-school program with students who received less formal academic support offered in a regular after-school program (both programs operated within the same center).
Outcome: SAT-10 Total Reading at the end of their first year in the study.
Sample Size: 25 after-school centers and around 2,300 students (Black, Somers, Doolittle, Unterman, & Grossman, 2009, p. xvii).
Report: Black et al. (2009).

After School—Math

Program: Academically rigorous, structured after-school program using the Harcourt math curriculum. The program lasts for up to two years.
Target Population: Students in Grades 2 through 5 attending an after-school program.
Study Design: Individual random assignment within each unique after-school center, grade, and cohort block. The study compares students who were selected to attend an academically oriented after-school program with students who received less formal academic support offered in a regular after-school program (both programs within the same center).
Outcome: SAT-10 Total Math at the end of their first year in the study.
Sample Size: 25 after-school centers and around 2,500 students (Black et al., 2009, p. *xvii)*.
Report: Black et al. (2009).

Middle School – High School

Communities in Schools (CiS)
Program: Students in middle schools and high schools are provided with a case manager who reviews their needs and helps them access services to address academic, behavioral, and other issues.
Target Population: Middle and high school students identified as candidates for case-management services.
Study Design: The study was conducted in schools that were not using the CiS model at the beginning of the study and had at least twice as many students eligible for CiS than could be served. Students were randomly assigned to the case- management group or the non-case-management group.
Outcomes: Chronic absenteeism and failed at least one core course.
Sample Size: 28 public schools and about 2,000 students.
Report: Corrin, Parise, Cerna, Haider, and Somers (2015).

Enhanced Reading Opportunity
Program: Ninth-grade students take a supplemental reading course in place of an

elective class, using either the Reading Apprenticeship Academic Literacy (RAAL) program or the Xtreme Reading program. The program lasted for one year.
Target Population: Ninth-grade students whose reading ability was at least two years below grade level.
Study Design: Individual random assignment within each school by cohort block. Schools were randomly assigned to one of the two reading curricula. The study compares students who were selected to enroll in the supplemental reading class (using either the RAAL or the Xtreme Reading program) with students who took another, elective class regularly offered by the school.
Outcomes: Reading comprehension and reading vocabulary GRADE assessment, and credits earned as a percentage of credits required for graduation (program year and follow-up year).
Sample Size: About 34 public schools and about 5,500 students (Somers et al., 2010, p. ES-4).
Report: Somers et al. (2010).

Career Academies
Program: Career Academies employ a "school-within-school" structure to foster a learning community, combined academic and career curricula, and employment-based education through working with local employers. The program can last for three or four years.
Target Population: Students who applied to academies in the eighth or ninth grade.
Study Design: Individual random assignment within school by cohort block. The study compares students who were offered to enroll in the career academy with students who were not allowed to enroll in the career academy, but instead received regular high school services (both within the same school).
Outcomes: Five-year graduation rates, enrollment in postsecondary within 14 months of expected high school graduation, and earnings and employment in years 1–4 after expected high school graduation and years 5–8.
Sample Size: 9 high schools and around 1,500 students.
Report: Kemple (2001, 2008).

Early College High School
Program: Early College High Schools provide students with concurrent high school and college experiences. Students attend high school on a college campus, enroll in college

courses, and are expected to complete two years of transferable college credits or an associate's degree by the time they earn their high school diploma.
Target Population: High school students who are underrepresented in college: first in their family to go to college; low- income students; members of racial and ethnic groups that are underrepresented.
Study Design: Schools were selected based on whether they were overenrolled and agreed to use a lottery system to place students. Students were randomly assigned within each school by cohort block. In some cases, the lottery for a given school by cohort block assigned students different probabilities for selection into the program group.
Outcomes: Ninth-grade "on-track" indicator and five-year graduation rate.
Sample Size: 19 schools and nearly 4,000 students (depending on the outcome).
Report: Edmunds et al. (2017).

Postsecondary Education

Encouraging Additional Summer Enrollment (EASE)
Program: Encouraging Additional Summer Enrollment is two interventions, informed by behavioral science. The first is a multimodal (email, postcard, and mail) informational campaign geared to increase summer enrollment. The second uses a very similar informational campaign combined with a summer tuition-assistance grant covering any gap between the cost of tuition and what is covered by financial aid.
Target Population: low-income Pell grant recipients who are in their first-year at community college
Study Design: Individual random assignment to one of three groups within each college by cohort block. The study compares (1) students offered the first EASE intervention to a control group and (2) students offered the second EASE intervention to the same control group.
Outcomes: Enrollment and credits earned in first summer after intervention
Sample Size: 10 Ohio community colleges and over 10,000 students.
Report: Headlam, Anzelone, and Weiss (2018); Weiss (2019)

Learning Communities
Program: Learning Communities are cohorts of around 20–25 students who co-enroll in two or more classes. Instructors are encouraged to collaborate to integrate curricula and assessments, and they use similar approaches to support struggling students. The

program lasts for one semester.
Target Population: Community college students in need of developmental/remedial education in math and/or English.
Study Design: Individual random assignment within each campus by cohort block. The study compares students who were allowed to enroll in the learning community with students who could enroll in their college's usual courses and services, just not learning communities.
Outcomes: Credit accumulation at the end-of-the-program semester and after three semesters, including targeted credits earned (in developmental education classes) and total credits.
Sample Size: 11 community college campuses and nearly 7,000 students.
Report: Weiss, Visher, Weissman, and Wathington (2015).

Performance-Based Scholarships (PBS)
Program: Performance-based scholarships are conditional cash transfer programs. Scholarship were designed to reduce the financial burden on students and offer an incentive to progress toward graduation by making payments contingent on meeting academic benchmarks. Scholarship amounts and performance criteria varied across colleges. Maximum scholarship amounts ranged from $600 to $1,500 per semester. Scholarship durations ranged from two to four semesters. Some colleges also offered additional services to address the needs of their students.
Target Population: Low-income community college students.
Study Design: Individual random assignment within each campus by cohort block. The study compares students offered a PBS with those who were not offered a PBS.
Outcomes: Total credits earned at the end of one and three years, and three-year graduation rates.
Sample Size: 15 community college campuses and nearly 7,000 students.
Report: Mayer, Patel, Rudd, and Ratledge (2015).

Labor/ Workforce Development

Welfare-to-Work Programs
Program: Welfare-to-Work programs are conditional cash assistance programs. The

types of services offered can vary on a number of dimensions, including: whether job searching or training is prioritized, the relationship between frontline staff and clients and the size of staff caseload, and how closely the programs monitor client activities. The program had no standard length—as long as clients were receiving welfare they were subject to the work requirement.
Target Population: Low-income female welfare recipients.
Study Design: Individual random assignment within welfare centers. This study compares welfare recipients and applicants who were assigned to a new employment program composed of services, regulations, and potential sanctions for noncompliance with those who were not assigned to the new program and thereby were exposed only to "business as usual."
Outcomes: Average annual earnings over two years.
Sample Size: 59 welfare centers with over 69,000 clients. The analysis sample was restricted to include only female sample members. Additionally, following the original analyses, some offices were excluded because of their small size, unusual client mix, or incomplete data.
Report: Bloom, Hill, and Riccio (2003).

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Online Appendix D: Covariate Adjustments

For ease of exposition and clarity of presentation, formulas and findings in the main text did not adjust for baseline covariates such as pretest and demographic characteristics. Researchers often include covariates to improve the precision of the impact estimator. This appendix provides Table D.1 (analogous to Table 4 in the main text) and figures (analogous to Figures 3 and 6 in the main text), where impact estimates and associated standard errors are covariate adjusted. It also provides some further detail as to how much covariate adjustment changed standard error and point estimates.

To generate these results, we reran our analyses with covariate adjustment of all studies. We used all reasonable baseline covariates, which ranged in number from 2 to 14. For the regression estimators we simply included covariates in our regression equation (without interaction with treatment). For the design-based estimators we used the methods as described in the Technical Appendix (Appendix A).

Influence of Covariate Adjustment on Effect Estimates

Generally, covariate adjustment did not substantially change any point estimates. Figure D.1 (below) compares effect estimates using unadjusted and covariate adjusted effect estimates for the five unique point estimators. Covariate adjustment generally (more than 75% of the time) did not change point estimates by more than 0.01σ. In rare cases (3% of the time) we see shifts of greater than 0.05σ. This implies that the main substantive findings in the manuscript are unlikely influenced by covariate adjustment.

Figure D.1: Magnitudes of change in estimated effect from no adjustment to adjustment. We plot the 5 unique estimators considered. Red line is median absolute shift, grey line is at 0.01. (34 outcomes.)
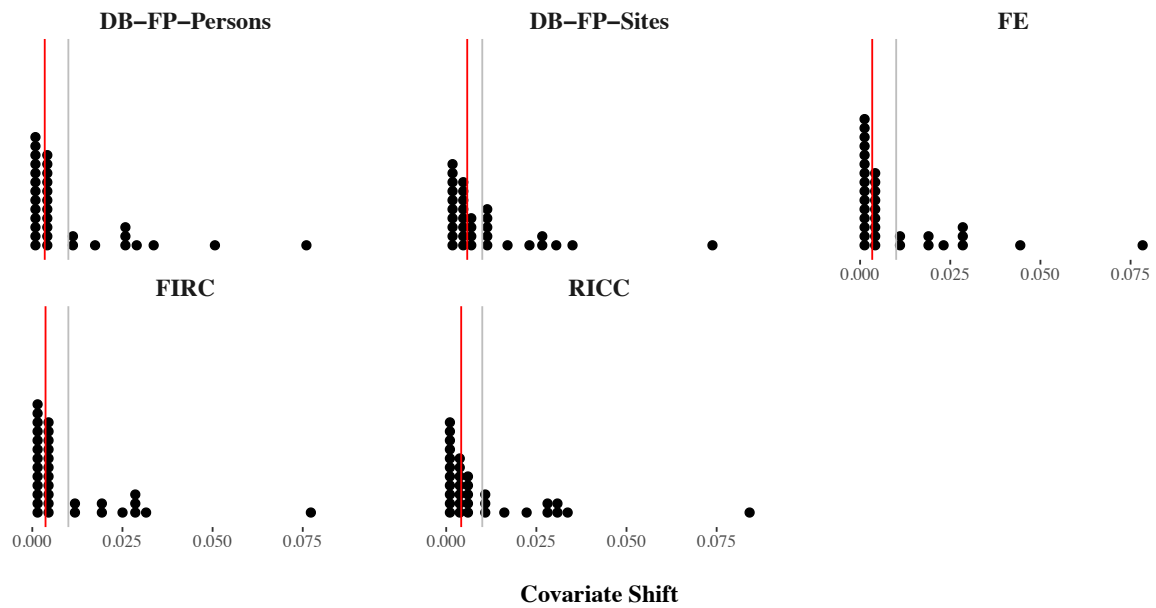
Figure D.2 (below) furthers this point. For each study x outcome, Figure D.2 plots the range of

estimated effects across all unadjusted estimators (x-axis) compared with all adjusted estimators

(y-axis). The ranges are very similar with or without covariate adjustment.

Figure D.2: Adjusted range of effects across all estimators for each of 36 outcomes vs
unadjusted ranges. Dotted lines denote deviations of 0.01 effect size units.

Adjusted range (y-axis)

Unadjusted range (x-axis)
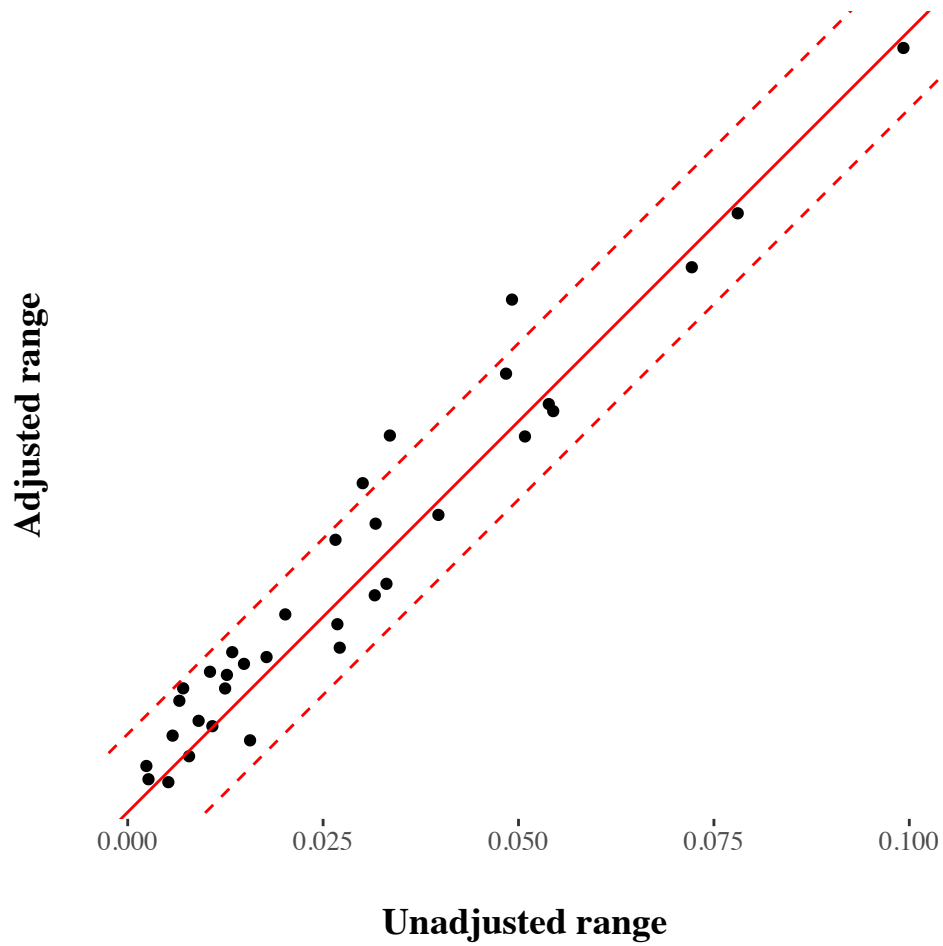
This means the covariate-adjusted versions of Figure 3 from the main text is essentially

equivalent, as shown in Figure D.3.

Figure D.3: The Range of *Covariate Adjusted* Estimates of β for all estimators targeting a given estimand from 13 Studies (36 outcomes)

Figure plots: Person panel and Site panel with legends.

Person panel legend:
$\hat{\beta}_{DB-FP-persons}$
$\hat{\beta}_{FE}$
$\hat{\beta}_{FE-Het}$
$\hat{\beta}_{FE-weight-persons}$
$\hat{\beta}_{FE-Inter-persons}$
$\hat{\beta}_{ML-RICC}$
$\hat{\beta}_{DB-SP-persons}$
$\hat{\beta}_{FE-CR}$
$\hat{\beta}_{FE-Club}$

Site panel legend:
$\hat{\beta}_{DB-SP-sites}$
$\hat{\beta}_{ML-FIRC}$
$\hat{\beta}_{DB-FP-sites}$
$\hat{\beta}_{FE-weight-sites}$
$\hat{\beta}_{FE-inter-sites}$

Y-axis: Number of outcomes. X-axis: Range of estimates.
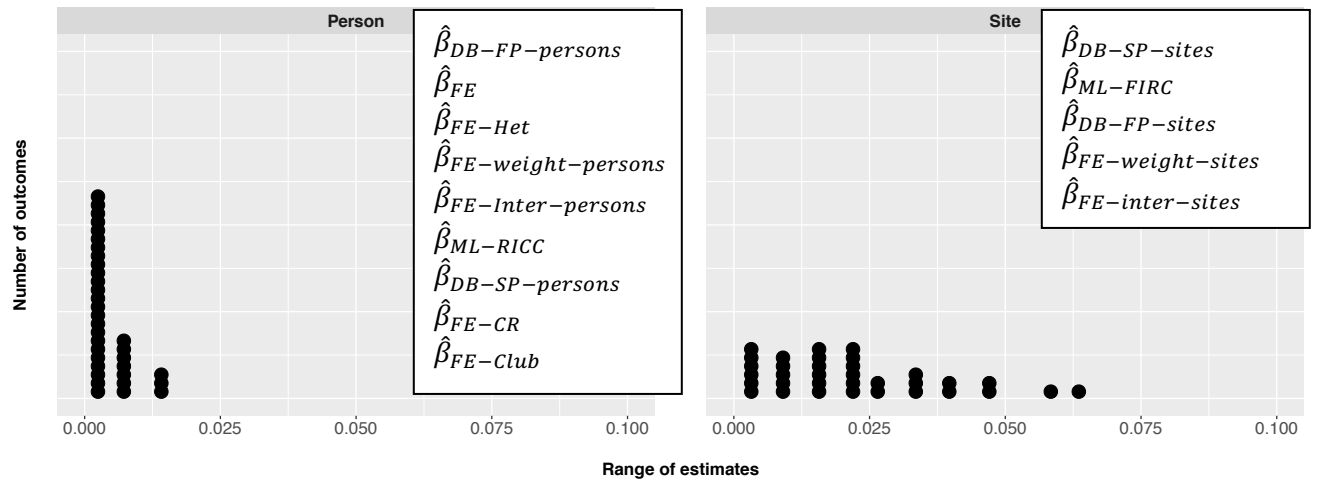
Influence of Covariate Adjustment on Estimated Standard Errors

The influence of covariate adjustment on the estimated standard errors is also minimal. We would expect estimated standard errors to shrink with the inclusion of covariates. However, Figure D.4 shows that, in general, the gains are small. Most adjusted standard errors are within 10% of the unadjusted standard errors. For some estimators (the design-based superpopulation estimators, the cluster robust estimator, and FIRC) the standard errors increased in many of the cases, further indications of the instability of standard error estimators for superpopulation contexts. The Club sandwich estimator appears relatively more stable.

Figure D.4: The ratio of the adjusted vs. unadjusted standard error estimate across the 14 different estimation strategies considered. (34 outcomes). Further left indicates greater relative precision. The red dotted line denotes 10% improvement. The solid red line is no change.

Ratio of adjusted SE to unadjusted SE
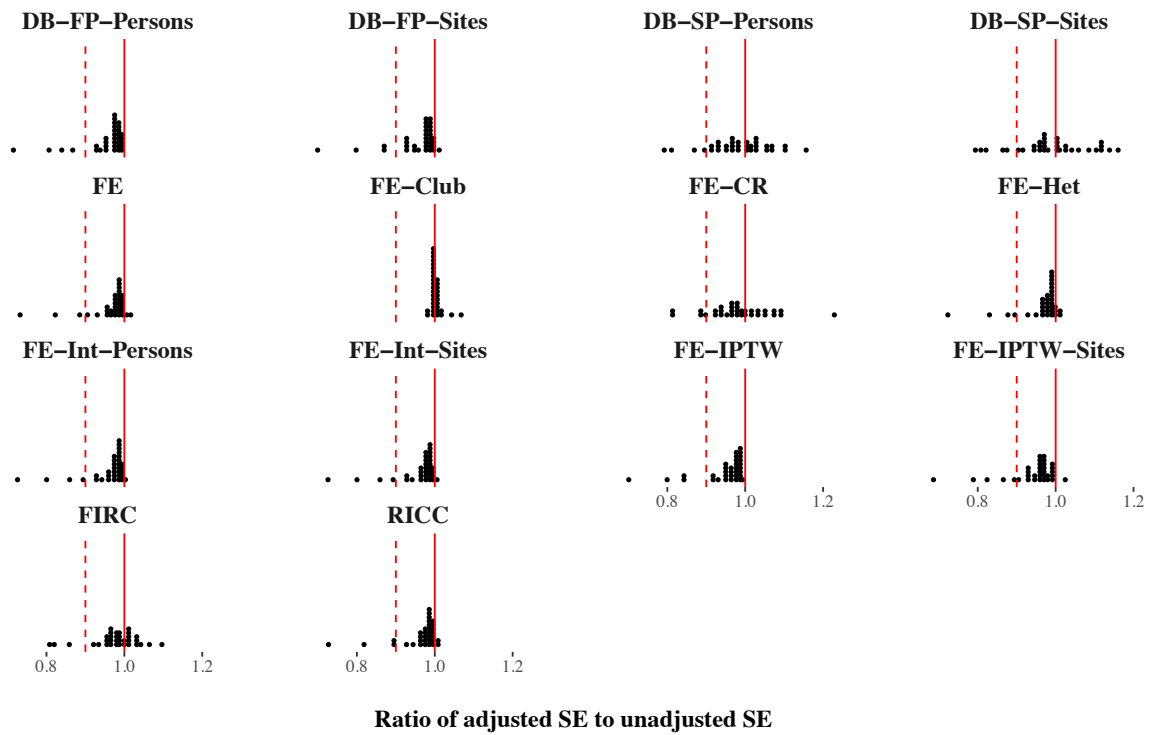
We can examine how the adjusted and unadjusted ratios of the largest to the smallest SE estimates compare; they are generally quite similar, with two outcomes showing larger change. See Figure D.5. The small changes here mean our covariate-adjusted versions of Figure 6 is essentially unchanged, although there is slightly more dispersion and thus some of the ranges are inflated modestly. See Figure D.6.

Figure D.5: Relative adjusted to unadjusted max/min ratios of SEs. Red lines denote changes of 10 percentage points or more. Generally ratios of max to min remain similar after covariate adjustment.

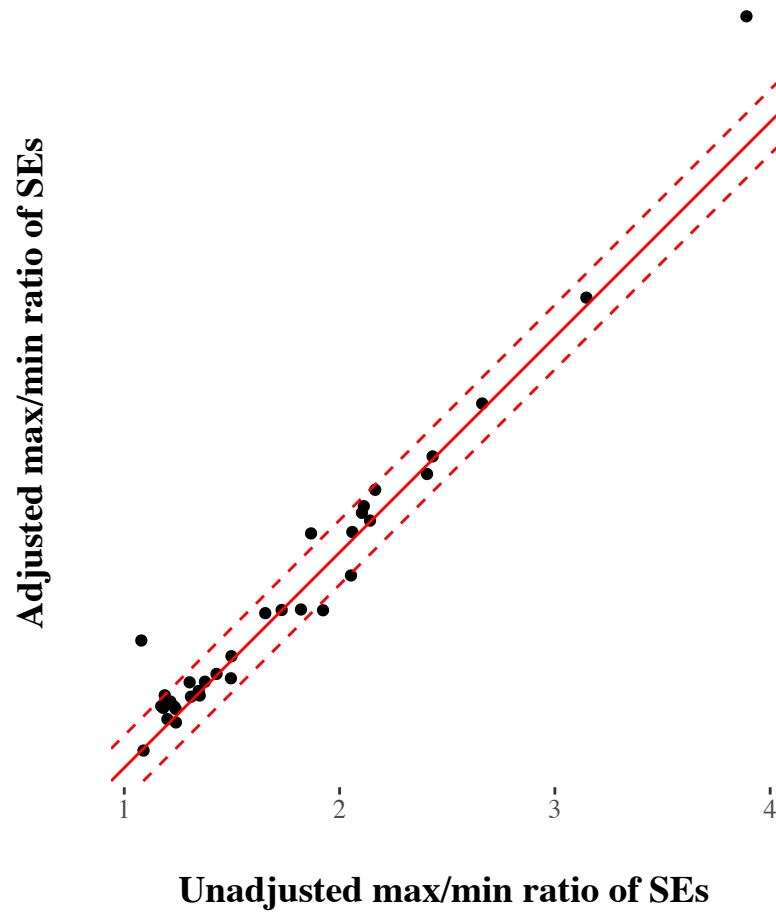**Figure D.6:** Analog figure to figure 6 in main text. Ratio of Largest to Smallest *Covariate Adjusted* Estimate of $SE(\beta)$ Among all Estimators Targeting a Given Estimand from 13 Studies (36 outcomes)
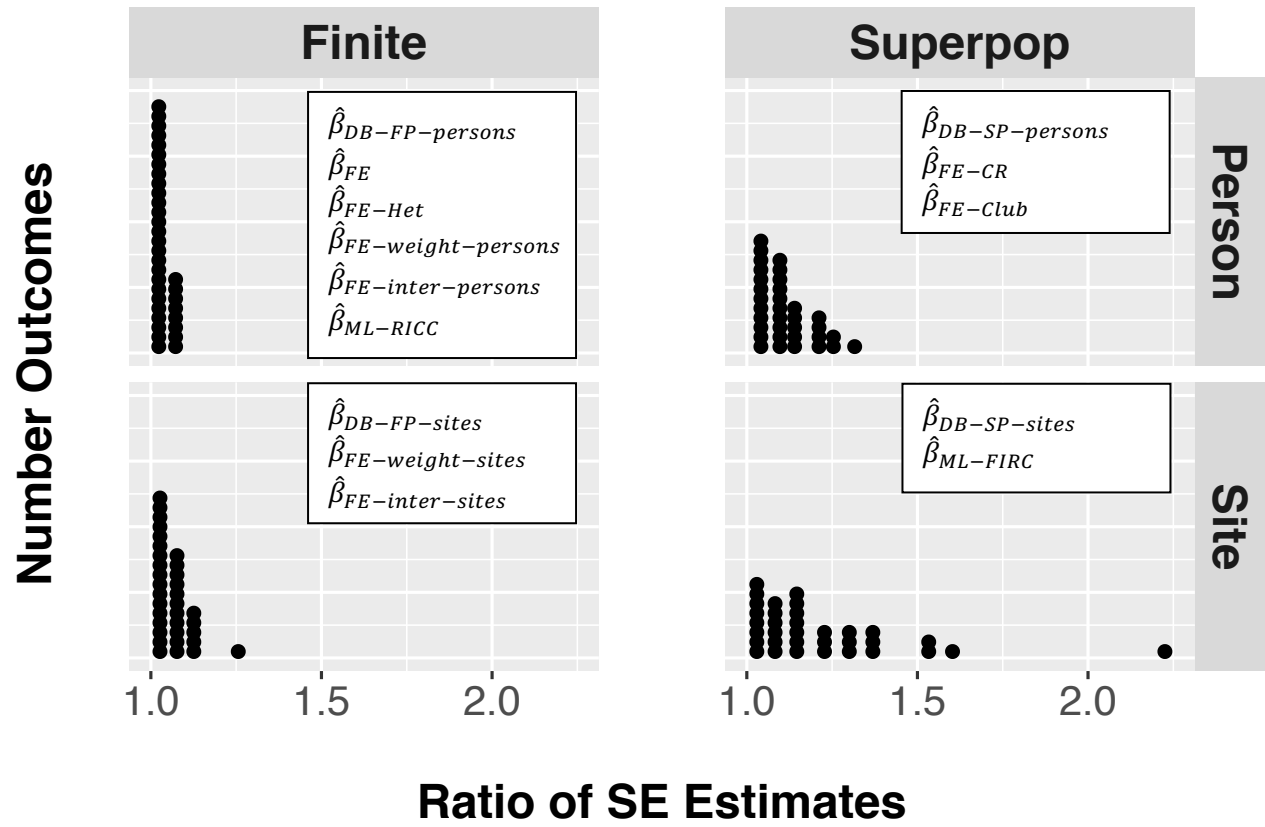
Table D.1. *Covariate Adjusted* Estimates of the ITT effect ($\hat{\beta}$) and its standard error ($\widehat{SE}(\hat{\beta})$).

	ESTIMATORS (BETA)													
	Design-based				Linear Regression								MLM	
Project/Outcome	FP Person	FP Site	SP Person	SP Site	FE	FE HW	FE CR	FE Club	FE-IPTW Person	FE-IPTW Site	FE-Inter Person	FE-Inter Site	RICC	FIRC
Early childhood-Elementary school														
Head Start Impact Study (HSIS)														
Externalizing behavior problems	-0.097	-0.057	-0.097	-0.057	-0.096	-0.096	-0.096	-0.096	-0.095	-0.055	-0.097	-0.057	-0.103	-0.096
	(0.033)	(0.038)	(0.034)	(0.038)	(0.034)	(0.034)	(0.035)	(0.035)	(0.032)	(0.036)	(0.034)	(0.04)	(0.034)	(0.034)
PPVT-III receptive vocabulary	0.158	0.173	0.158	0.173	0.158	0.158	0.158	0.158	0.159	0.179	0.158	0.173	0.160	0.159
	(0.024)	(0.028)	(0.024)	(0.028)	(0.024)	(0.025)	(0.025)	(0.03)	(0.024)	(0.026)	(0.023)	(0.027)	(0.024)	(0.025)
Self-regulation skills	-0.006	-0.010	-0.006	-0.010	-0.007	-0.007	-0.007	-0.007	-0.008	-0.010	-0.006	-0.010	-0.008	-0.008
	(0.034)	(0.039)	(0.035)	(0.048)	(0.033)	(0.034)	(0.036)	(0.035)	(0.033)	(0.04)	(0.031)	(0.037)	(0.034)	(0.034)
WJ-III AP early numeracy	0.136	0.142	0.136	0.142	0.133	0.133	0.133	0.133	0.137	0.153	0.136	0.142	0.143	0.133
	(0.03)	(0.034)	(0.031)	(0.035)	(0.03)	(0.031)	(0.03)	(0.033)	(0.029)	(0.032)	(0.029)	(0.034)	(0.03)	(0.031)
WJ-III LW early reading	0.235	0.224	0.235	0.224	0.229	0.229	0.229	0.229	0.230	0.225	0.235	0.224	0.241	0.225
	(0.032)	(0.036)	(0.039)	(0.04)	(0.034)	(0.034)	(0.041)	(0.041)	(0.032)	(0.035)	(0.033)	(0.038)	(0.033)	(0.039)
WJ-III OC oral comprehension	0.029	0.045	0.029	0.045	0.022	0.022	0.022	0.022	0.024	0.045	0.029	0.045	0.026	0.021
	(0.025)	(0.028)	(0.027)	(0.033)	(0.026)	(0.026)	(0.028)	(0.03)	(0.025)	(0.027)	(0.025)	(0.029)	(0.026)	(0.026)
After School Reading														
SAT-10 total reading	-0.014	-0.019	-0.014	-0.019	-0.013	-0.013	-0.013	-0.013	-0.012	-0.018	-0.014	-0.019	-0.013	-0.014
	(0.03)	(0.03)	(0.036)	(0.034)	(0.031)	(0.031)	(0.037)	(0.047)	(0.03)	(0.029)	(0.03)	(0.031)	(0.031)	(0.035)
After School Math														
SAT-10 total math	0.091	0.105	0.091	0.105	0.089	0.089	0.089	0.089	0.090	0.102	0.091	0.105	0.090	0.095
	(0.039)	(0.04)	(0.046)	(0.054)	(0.04)	(0.04)	(0.047)	(0.045)	(0.039)	(0.039)	(0.04)	(0.041)	(0.04)	(0.048)
High school														
Enhanced Reading Opportunities														
GRADE reading comprehension	0.085	0.092	0.085	0.092	0.083	0.083	0.083	0.083	0.083	0.091	0.085	0.092	0.083	0.085
	(0.029)	(0.03)	(0.038)	(0.038)	(0.029)	(0.029)	(0.037)	(0.035)	(0.029)	(0.029)	(0.029)	(0.03)	(0.029)	(0.038)
GRADE reading vocabulary	0.018	0.016	0.018	0.016	0.018	0.018	0.018	0.018	0.017	0.015	0.018	0.016	0.018	0.018
	(0.029)	(0.029)	(0.028)	(0.03)	(0.029)	(0.029)	(0.028)	(0.028)	(0.028)	(0.029)	(0.029)	(0.03)	(0.029)	(0.029)
% of required credits earned, yr 1	0.071	0.075	0.071	0.075	0.072	0.072	0.072	0.072	0.071	0.077	0.071	0.075	0.071	0.072
	(0.026)	(0.027)	(0.03)	(0.033)	(0.026)	(0.026)	(0.03)	(0.031)	(0.026)	(0.027)	(0.026)	(0.027)	(0.026)	(0.03)
% of required credits earned, yr 2	0.032	0.048	0.032	0.048	0.032	0.032	0.032	0.032	0.032	0.050	0.032	0.048	0.031	0.035
	(0.027)	(0.029)	(0.032)	(0.035)	(0.027)	(0.027)	(0.034)	(0.031)	(0.027)	(0.029)	(0.027)	(0.029)	(0.027)	(0.032)
Communities in Schools														
Chronic absenteeism	0.044	-0.025	0.044	-0.025	0.049	0.049	0.049	0.049	0.044	-0.025	0.044	-0.025	0.051	0.033
	(0.045)	(0.045)	(0.052)	(0.077)	(0.046)	(0.046)	(0.052)	(0.05)	(0.045)	(0.046)	(0.046)	(0.057)	(0.046)	(0.057)
Failed at least one course	0.033	-0.008	0.033	-0.008	0.036	0.036	0.036	0.036	0.034	-0.010	0.033	-0.008	0.041	0.036
	(0.039)	(0.046)	(0.037)	(0.046)	(0.039)	(0.039)	(0.038)	(0.035)	(0.039)	(0.044)	(0.039)	(0.05)	(0.039)	(0.04)
Early College High Schools														
On track in ninth grade	0.195	0.113	0.195	0.113	0.203	0.203	0.203	0.203	0.195	0.117	0.195	0.113	0.211	0.129
	(0.026)	(0.029)	(0.089)	(0.069)	(0.025)	(0.026)	(0.099)	(0.11)	(0.026)	(0.029)	(0.025)	(0.032)	(0.025)	(0.07)
Earned a high school diploma	0.095	0.137	0.095	0.137	0.102	0.102	0.102	0.102	0.099	0.134	0.095	0.137	0.107	0.103
	(0.038)	(0.049)	(0.029)	(0.049)	(0.037)	(0.038)	(0.035)	(0.029)	(0.038)	(0.045)	(0.038)	(0.05)	(0.036)	(0.038)
Career Academies														
Earned HS diploma or equivalent	0.004	0.018	0.004	0.018	0.004	0.004	0.004	0.004	0.004	0.024	0.004	0.018	0.009	0.004
	(0.049)	(0.057)	(0.035)	(0.038)	(0.049)	(0.049)	(0.032)	(0.03)	(0.048)	(0.057)	(0.049)	(0.056)	(0.049)	(0.049)
Enrolled in postsecondary	0.001	0.015	0.001	0.015	0.001	0.001	0.001	0.001	0.000	0.012	0.001	0.015	0.003	0.005
	(0.049)	(0.056)	(0.057)	(0.047)	(0.05)	(0.05)	(0.056)	(0.061)	(0.049)	(0.054)	(0.049)	(0.057)	(0.049)	(0.055)
Avg. annual earnings, yrs 1-4	0.159	0.124	0.159	0.124	0.160	0.160	0.160	0.160	0.159	0.128	0.159	0.124	0.156	0.158
	(0.055)	(0.061)	(0.049)	(0.06)	(0.056)	(0.056)	(0.048)	(0.048)	(0.055)	(0.062)	(0.056)	(0.064)	(0.056)	(0.056)
Avg. annual earnings, yrs 5-8	0.088	0.103	0.088	0.103	0.087	0.087	0.087	0.087	0.087	0.102	0.088	0.103	0.091	0.089
	(0.047)	(0.052)	(0.032)	(0.031)	(0.047)	(0.049)	(0.034)	(0.032)	(0.047)	(0.052)	(0.047)	(0.054)	(0.048)	(0.048)
Avg. months worked annually, yrs 1-4	0.099	0.075	0.099	0.075	0.100	0.100	0.100	0.100	0.099	0.081	0.099	0.075	0.096	0.100
	(0.05)	(0.059)	(0.046)	(0.056)	(0.051)	(0.051)	(0.042)	(0.043)	(0.05)	(0.057)	(0.051)	(0.057)	(0.051)	(0.052)
Avg. months worked annually, yrs 5-8	0.063	0.121	0.063	0.121	0.062	0.062	0.062	0.062	0.061	0.127	0.063	0.121	0.062	0.063
	(0.053)	(0.064)	(0.053)	(0.066)	(0.053)	(0.053)	(0.053)	(0.049)	(0.052)	(0.061)	(0.053)	(0.061)	(0.053)	(0.055)
Postsecondary education														
Learning Communities														
Targeted credits earned, sem 1	0.165	0.100	0.165	0.100	0.170	0.170	0.170	0.170	0.165	0.103	0.165	0.100	0.170	0.118
	(0.023)	(0.031)	(0.068)	(0.052)	(0.023)	(0.023)	(0.069)	(0.073)	(0.023)	(0.03)	(0.023)	(0.033)	(0.023)	(0.057)
Cumulative targeted credits earned, sem 3	0.084	0.034	0.084	0.034	0.086	0.086	0.086	0.086	0.084	0.036	0.084	0.034	0.086	0.056
	(0.023)	(0.031)	(0.042)	(0.035)	(0.023)	(0.023)	(0.042)	(0.047)	(0.022)	(0.03)	(0.023)	(0.032)	(0.023)	(0.039)
Total credits earned, sem 1	0.087	0.059	0.087	0.059	0.088	0.088	0.088	0.088	0.087	0.061	0.087	0.059	0.087	0.081
	(0.022)	(0.029)	(0.026)	(0.028)	(0.022)	(0.023)	(0.027)	(0.03)	(0.022)	(0.029)	(0.022)	(0.032)	(0.023)	(0.027)
Cumulative total credits earned, sem 3	0.030	0.002	0.030	0.002	0.030	0.030	0.030	0.030	0.030	0.003	0.030	0.002	0.028	0.030
	(0.022)	(0.028)	(0.015)	(0.023)	(0.022)	(0.022)	(0.015)	(0.018)	(0.022)	(0.027)	(0.022)	(0.031)	(0.022)	(0.022)
Performance-Based Scholarships														
Cumulative total credits earned, yr 1	0.115	0.068	0.115	0.068	0.114	0.114	0.114	0.114	0.114	0.071	0.115	0.068	0.113	0.116
	(0.023)	(0.038)	(0.032)	(0.053)	(0.023)	(0.023)	(0.032)	(0.033)	(0.023)	(0.037)	(0.023)	(0.036)	(0.023)	(0.033)
Cumulative total credits earned, yr 3	0.061	0.025	0.061	0.025	0.061	0.061	0.061	0.061	0.061	0.026	0.061	0.025	0.060	0.063
	(0.021)	(0.032)	(0.024)	(0.058)	(0.022)	(0.022)	(0.024)	(0.024)	(0.021)	(0.033)	(0.022)	(0.035)	(0.022)	(0.026)
Earned a degree, yr 3	0.046	0.039	0.046	0.039	0.046	0.046	0.046	0.046	0.047	0.042	0.046	0.039	0.048	0.050
	(0.024)	(0.04)	(0.028)	(0.042)	(0.024)	(0.024)	(0.028)	(0.029)	(0.024)	(0.039)	(0.024)	(0.039)	(0.024)	(0.027)
Encouraging Summer Enrollment 1														
Enrolled in summer	0.121	0.129	0.121	0.129	0.121	0.121	0.121	0.121	0.121	0.130	0.121	0.129	0.121	0.122
	(0.024)	(0.044)	(0.02)	(0.032)	(0.024)	(0.024)	(0.02)	(0.023)	(0.024)	(0.043)	(0.024)	(0.044)	(0.024)	(0.024)
Credits earned	0.079	0.061	0.079	0.061	0.079	0.079	0.079	0.079	0.079	0.064	0.079	0.061	0.079	0.079
	(0.024)	(0.045)	(0.02)	(0.03)	(0.024)	(0.024)	(0.02)	(0.023)	(0.024)	(0.045)	(0.024)	(0.044)	(0.024)	(0.025)
Encouraging Summer Enrollment 2														
Enrolled in summer	0.278	0.244	0.278	0.244	0.278	0.278	0.278	0.278	0.278	0.243	0.278	0.244	0.278	0.259
	(0.025)	(0.045)	(0.051)	(0.029)	(0.025)	(0.025)	(0.051)	(0.06)	(0.025)	(0.045)	(0.025)	(0.045)	(0.025)	(0.039)
Credits earned	0.184	0.130	0.184	0.130	0.184	0.184	0.184	0.184	0.184	0.128	0.184	0.130	0.184	0.160
	(0.025)	(0.045)	(0.044)	(0.038)	(0.025)	(0.025)	(0.043)	(0.053)	(0.025)	(0.045)	(0.025)	(0.045)	(0.025)	(0.037)
Labor/Workforce														
Welfare-to-Work Program														
Avg. annual earnings, quarters 1-8	0.099	0.102	0.099	0.102	0.090	0.090	0.090	0.090	0.099	0.102	0.099	0.102	0.093	0.098
	(0.008)	(0.012)	(0.014)	(0.017)	(0.008)	(0.008)	(0.013)	(0.013)	(0.008)	(0.012)	(0.008)	(0.012)	(0.008)	(0.015)

Note: Cells represent covariate adjusted estimated effects with standard errors in parentheses below.