



# DIFFERING PROGRAM ENVIRONMENTS AND LIMITED REPLICATIONS CONSTRAIN GENERALIZATION:

THE CASE OF PUBLISHED EVALUATIONS OF SCHOOL FINANCE POLICIES

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External Validity in Program Evaluation

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# THE “DOES MONEY MATTER DEBATE?” IN SCHOOL FINANCE

- What is impact of adding money to schools?
  - Separate funding from education policy
  - Legislative and court debate over fifty years
- Surprisingly controversial
  - Historic studies
  - Political aspect

# MODERN, WELL-IDENTIFIED STUDIES OF FUNDING IMPACT

- Various evaluation studies in last twenty years
  - 43 separate estimates of  $\delta_{\$}$
  - Different treatments/institutional environments
  - Different performance measures
- Take at face value
  - Publication bias
  - p-hacking
  - Study quality
- Standardize:  $\delta_{\$} = \Delta \text{outcome} / 10\% \text{ increase in } \$$

## QUESTIONS AND ANSWERS

1. How consistent are these estimates?

**Not very**

2. What explains heterogeneity?

**Hard to say**

3. What is needed to generalize?

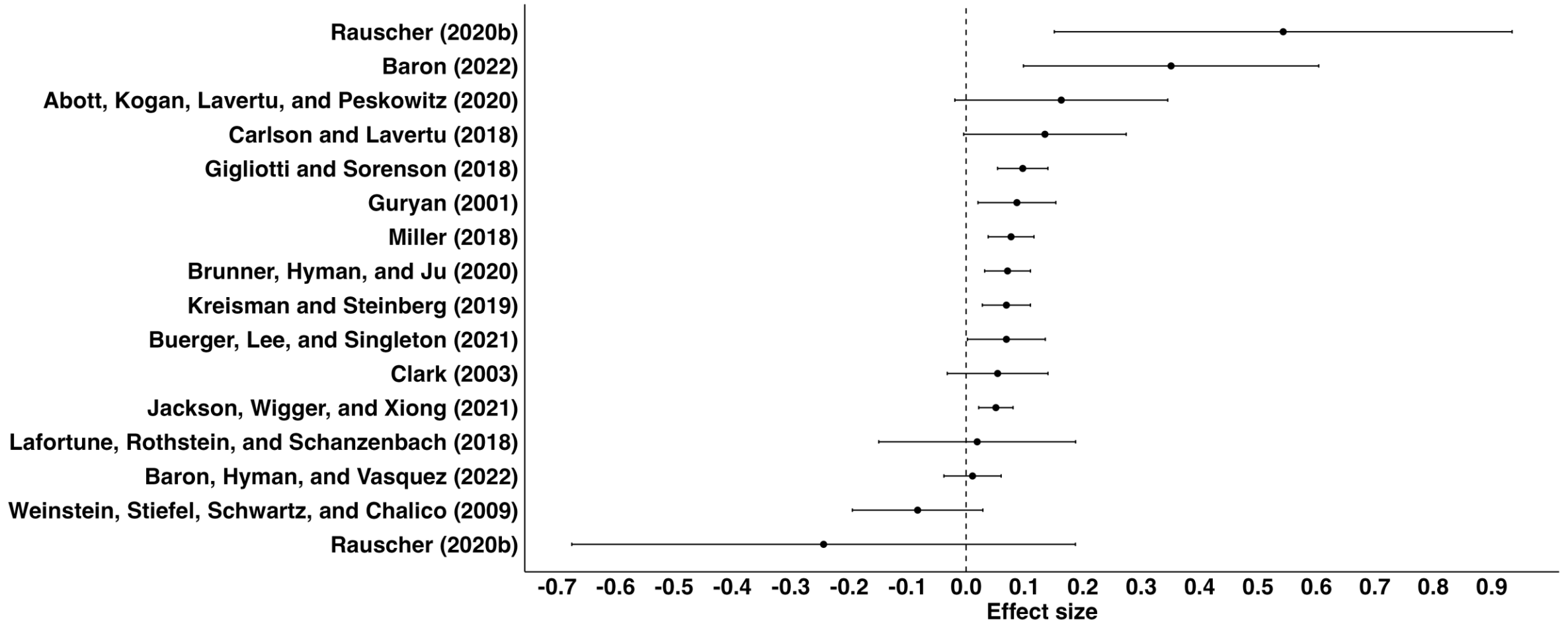
**Replication**

## STANDARDIZED SCHOOL SPENDING ESTIMATES

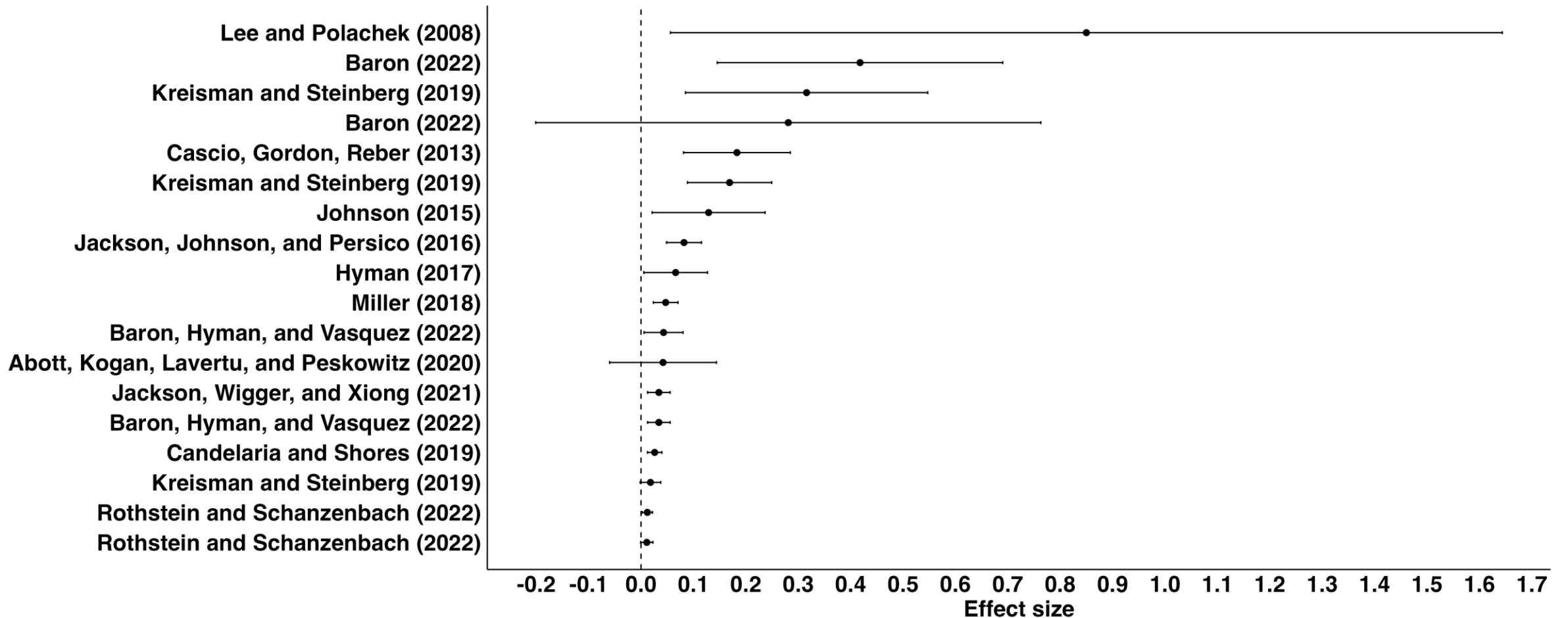
Outcome	Median	Min	Max	N	N pos.	N Significant
Panel A: All studies (N=43)						
Test scores	0.069	-0.244	0.543	23	18	10
Pass rates	0.056	0.054	0.059	2	2	2
Attainment	0.057	0.011	0.850	18	18	14

Panel B: US studies only (N=36)						
Test scores	0.070	-0.244	0.543	16	14	9
Pass rates	0.056	0.054	0.059	2	2	2
Attainment	0.057	0.011	0.850	18	18	14

# SCHOOL SPENDING IMPACTS ON TEST SCORES



# SCHOOL SPENDING IMPACTS ON ATTAINMENT

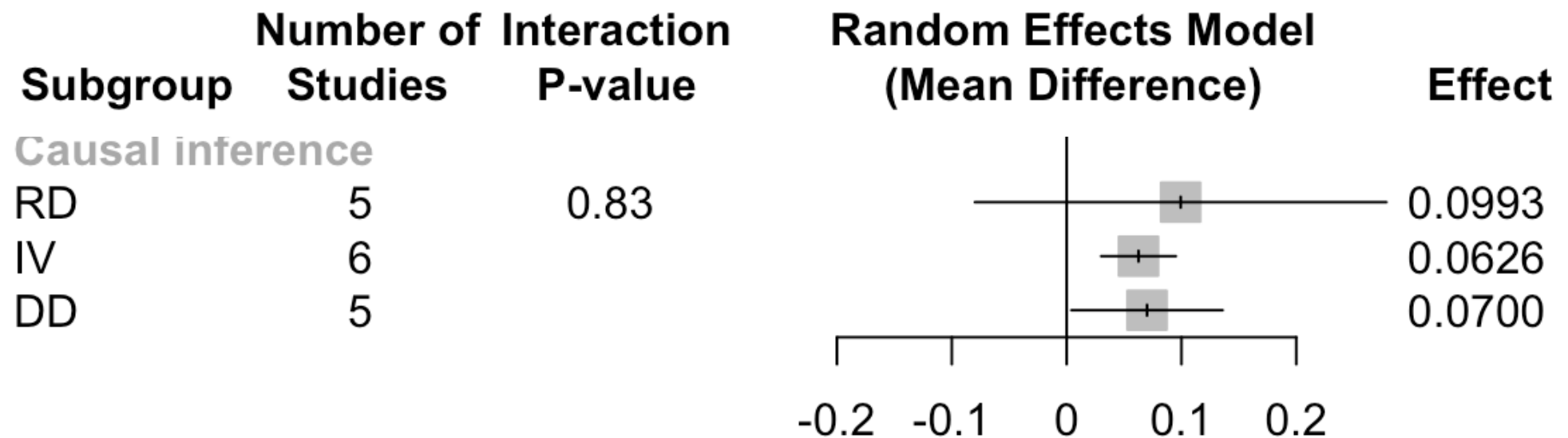


## META-ANALYTIC SUMMARY

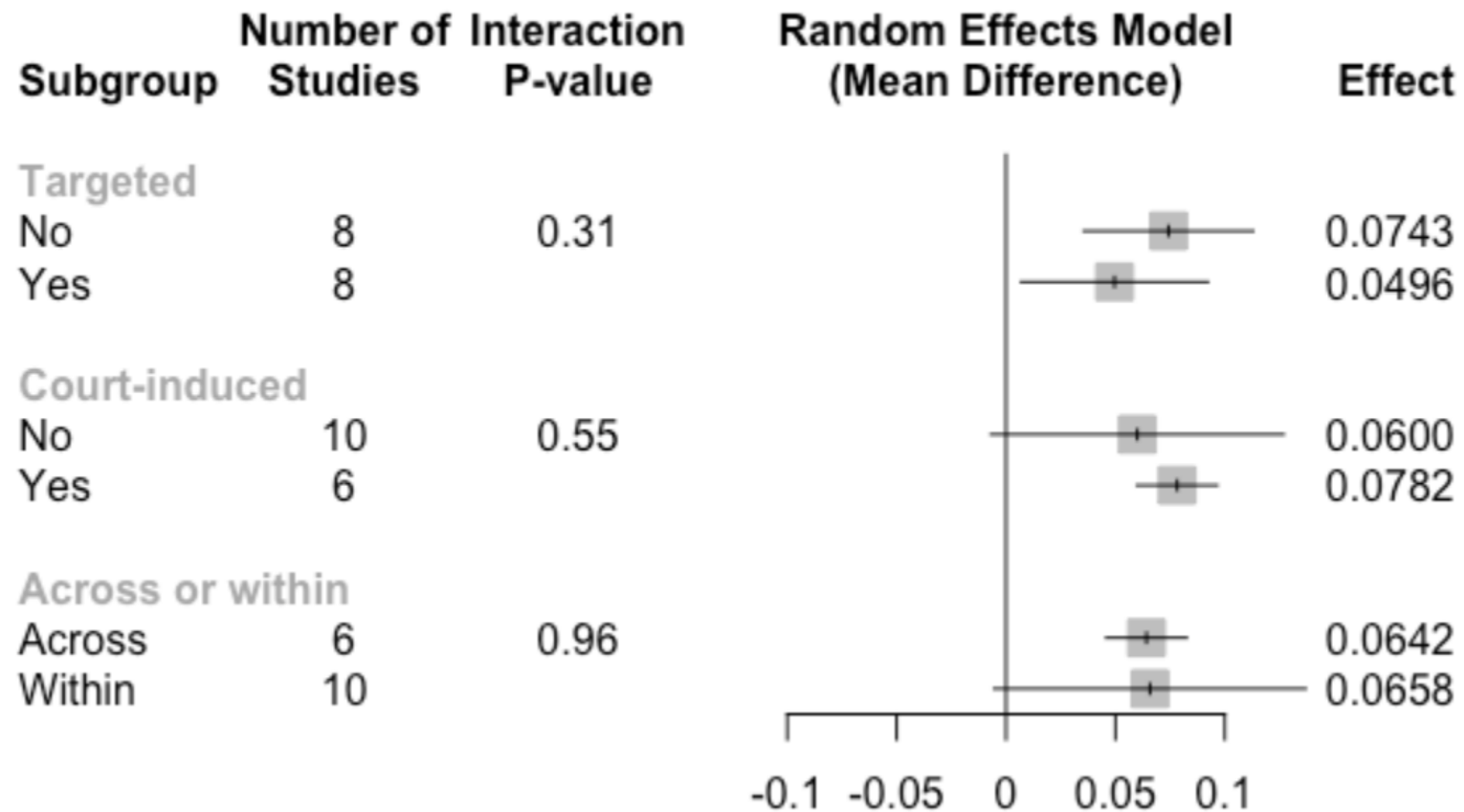
Outcome	N	MD	95% CI	p-value	$I^2$
Test scores	16	0.0647	[0.0394; 0.0900]	< 0.0001	50.5%
Attainment	18	0.0550	[0.0225; 0.0875]	0.0024	77.6%



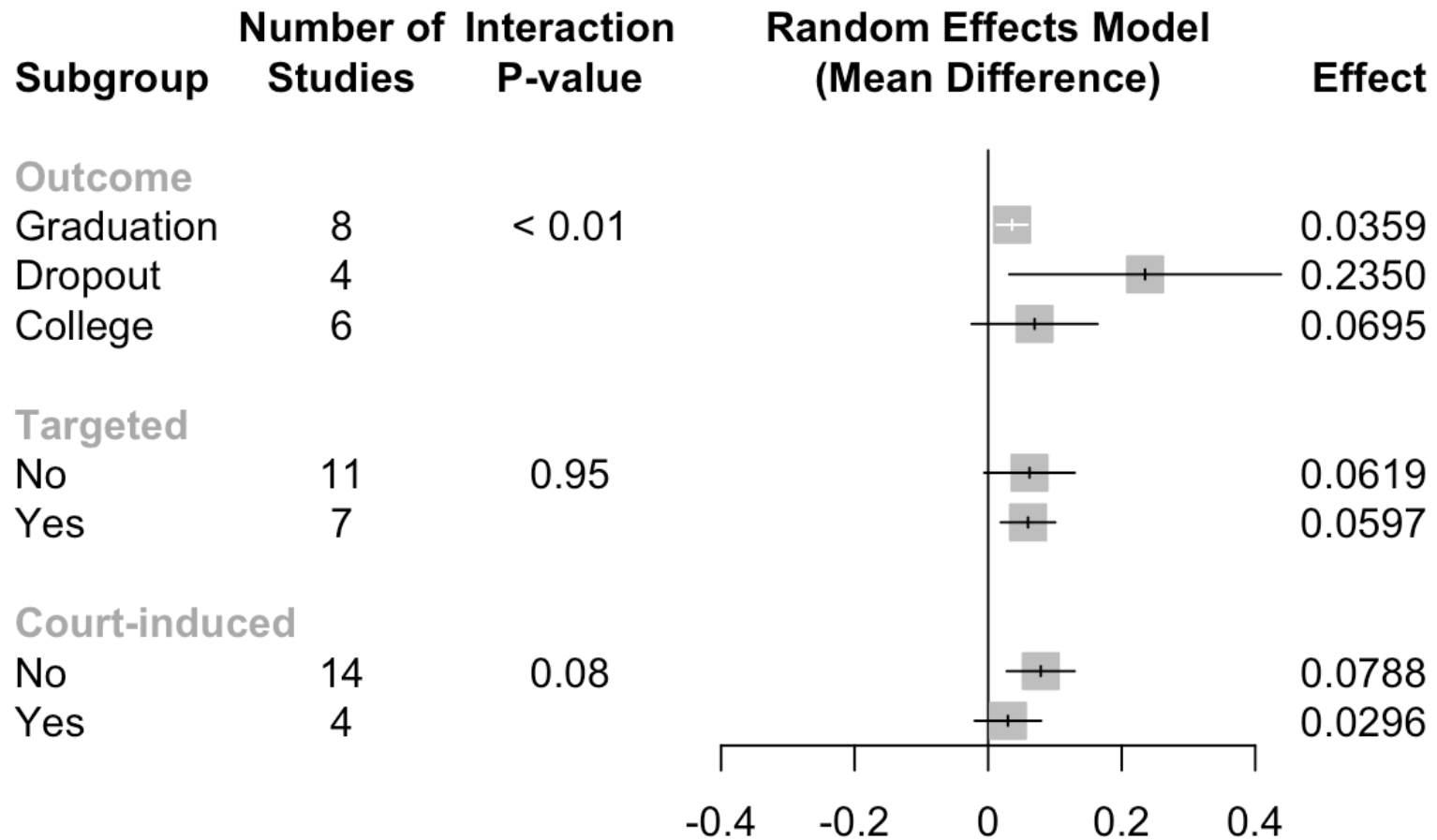
## EFFECT SIZES BY EMPIRICAL METHODOLOGY



# SUBGROUP ANALYSIS: TEST SCORES



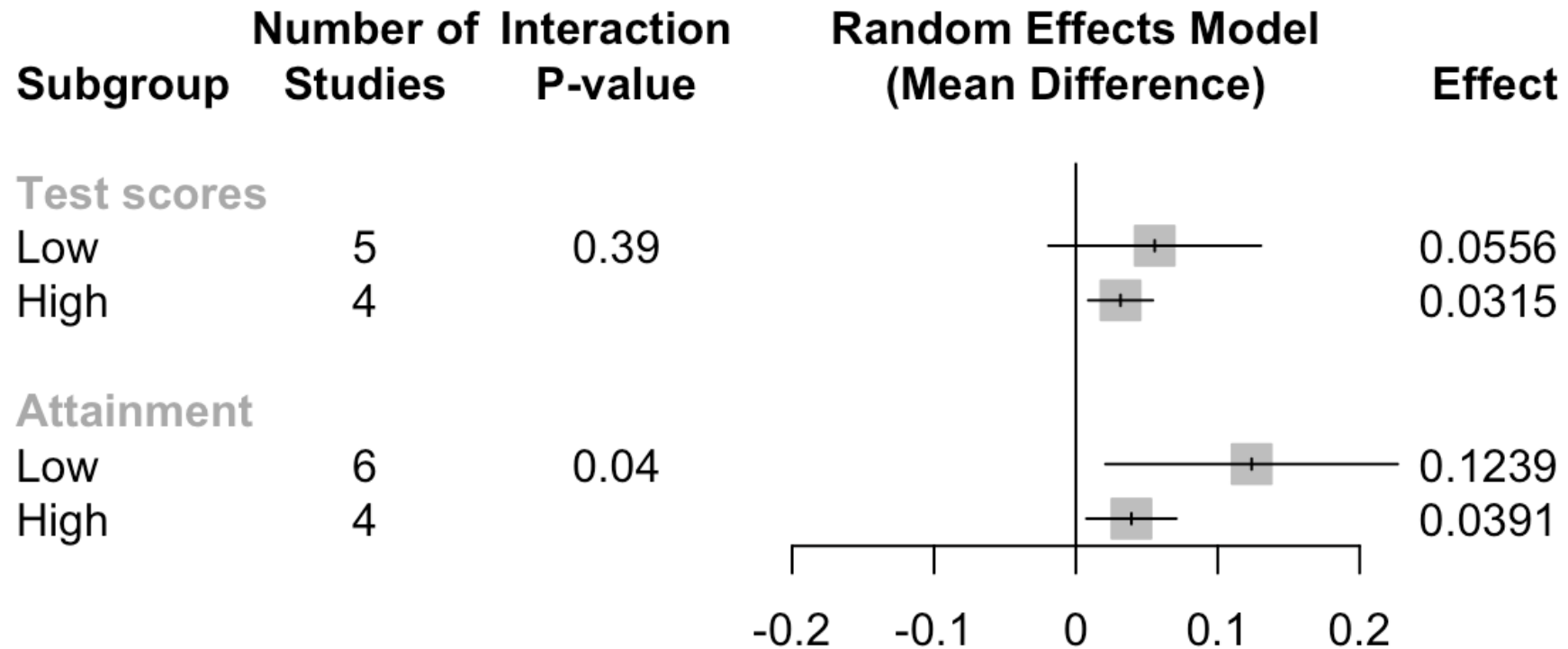
# SUBGROUP ANALYSIS: ATTAINMENT



## EFFECT SIZES BY SES

SES level	Median	Min	Max	N	N Significant
Panel A: Test scores (N=9)					
Low SES	0.069	0.005	0.354	5	3
High SES	0.046	0.021	0.054	4	1
Panel B: Attainment (N=10)					
Low SES	0.123	0.007	0.372	6	4
High SES	0.044	0.029	0.094	4	1

## SUBGROUP ANALYSIS: SES



# CONCLUSIONS

- Replication crisis
  - Methodology does not lend itself to replication
  - Incentives for replication are low
- Limited consideration of institutional environment
- Impact of specific interventions not clear
  - Class size
  - Capital spending
  - Teacher incentives

# THANK YOU!

- Handel, Danielle V., and Eric A. Hanushek. 2023. "U.S. School Finance: Resources and Outcomes." In *Handbook of the Economics of Education. Volume 7*, edited by Eric A Hanushek, Stephen Machin, and Ludger Woessmann. Amsterdam: North Holland.
- Handel, Danielle V., and Eric A. Hanushek. 2023. "U.S. School Finance: Resources and Outcomes." NBER Working Paper Series No. 30769 (revised). Cambridge, MA: National Bureau of Economic Research (February).