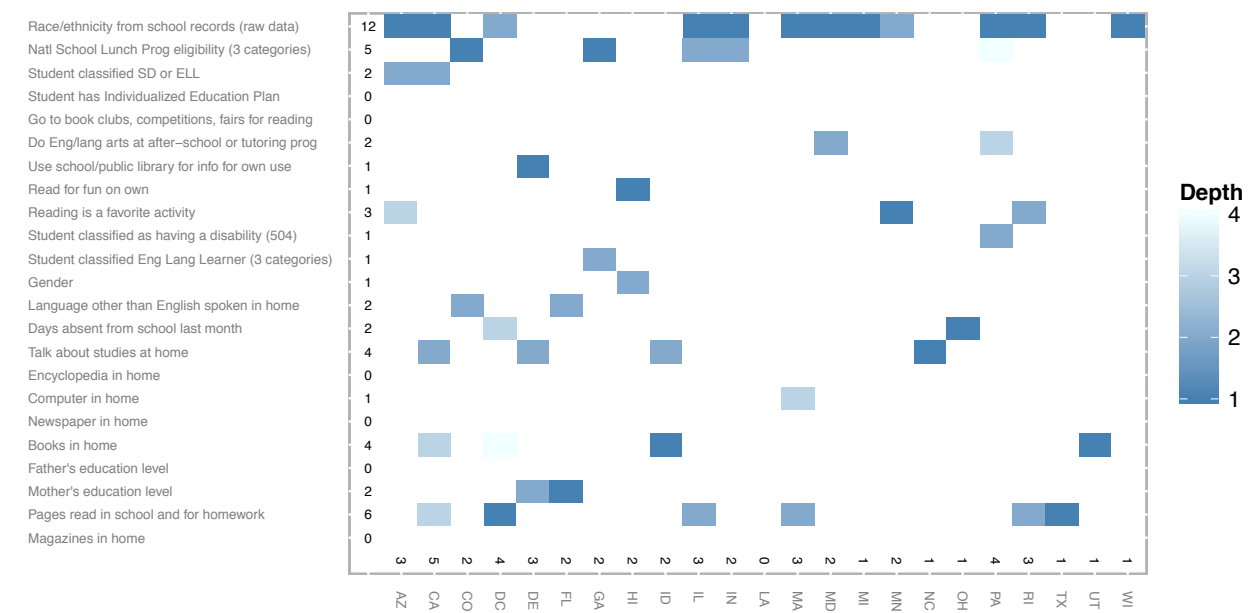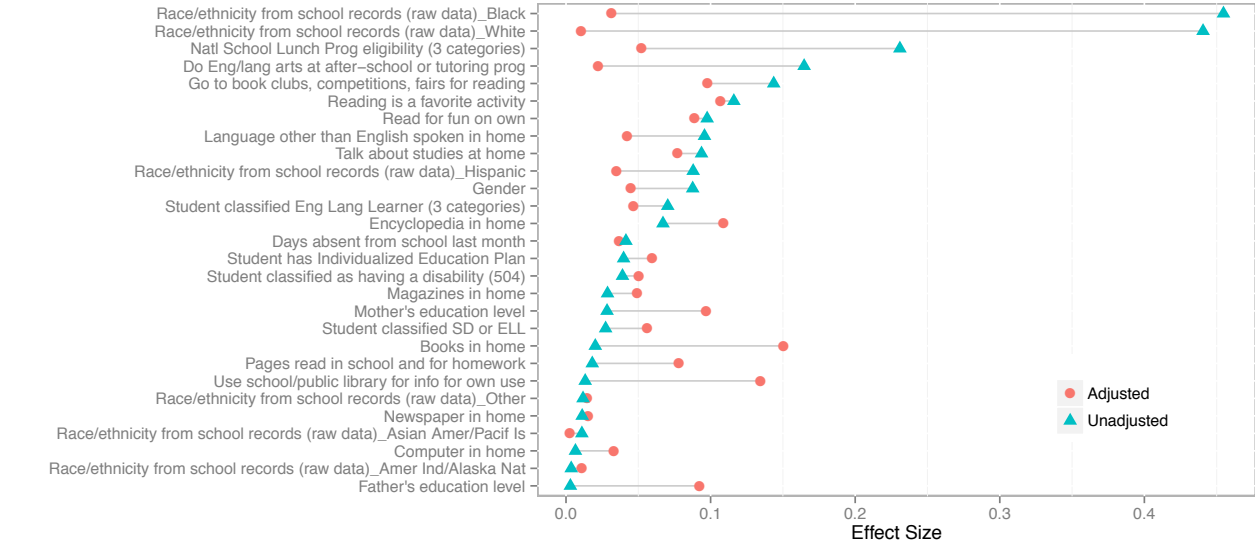# A National Study Comparing Charter and Traditional Public Schools Using Propensity Score Analysis
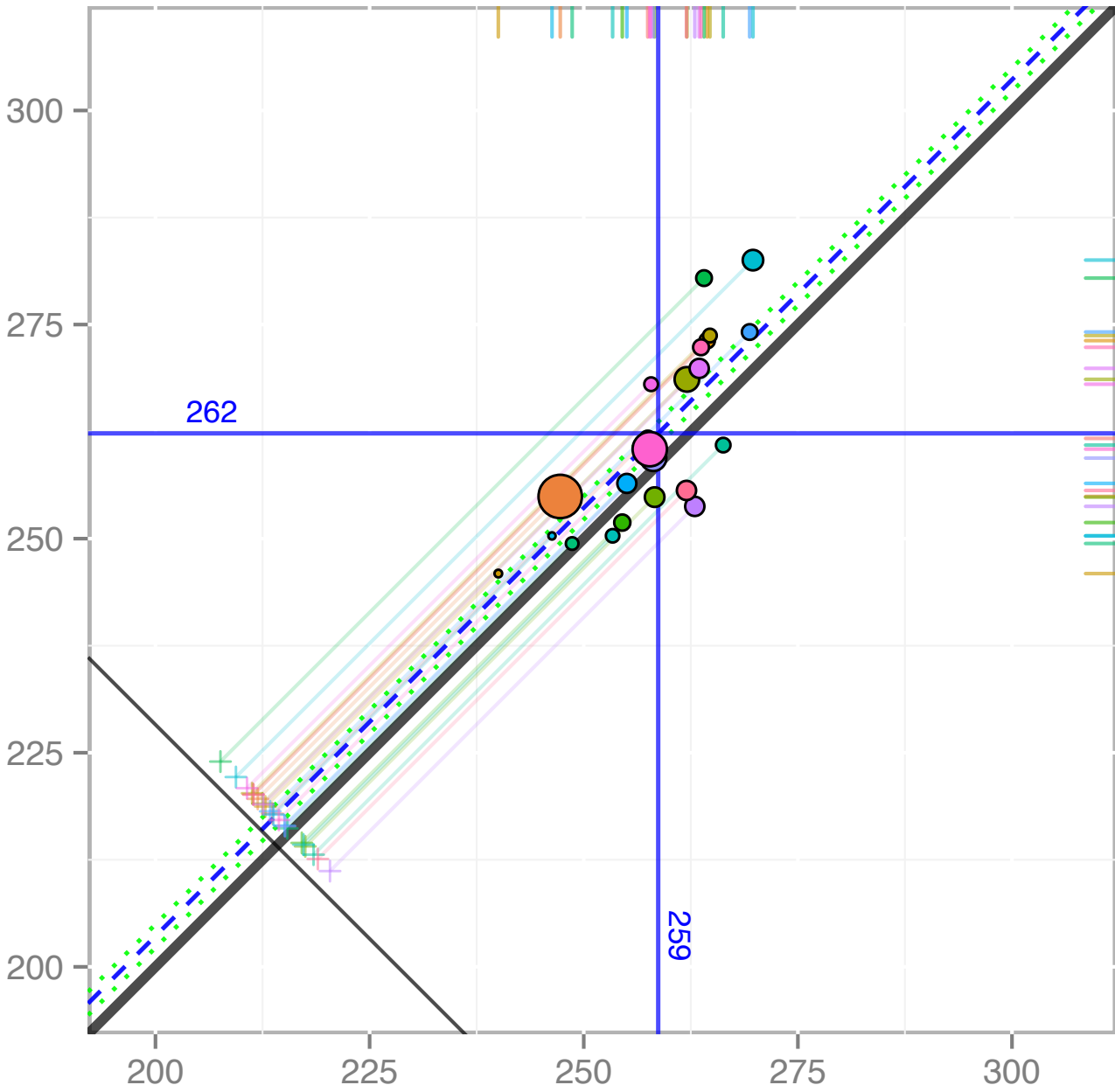
Covariate Heat Map

Race/ethnicity from school records (raw data)
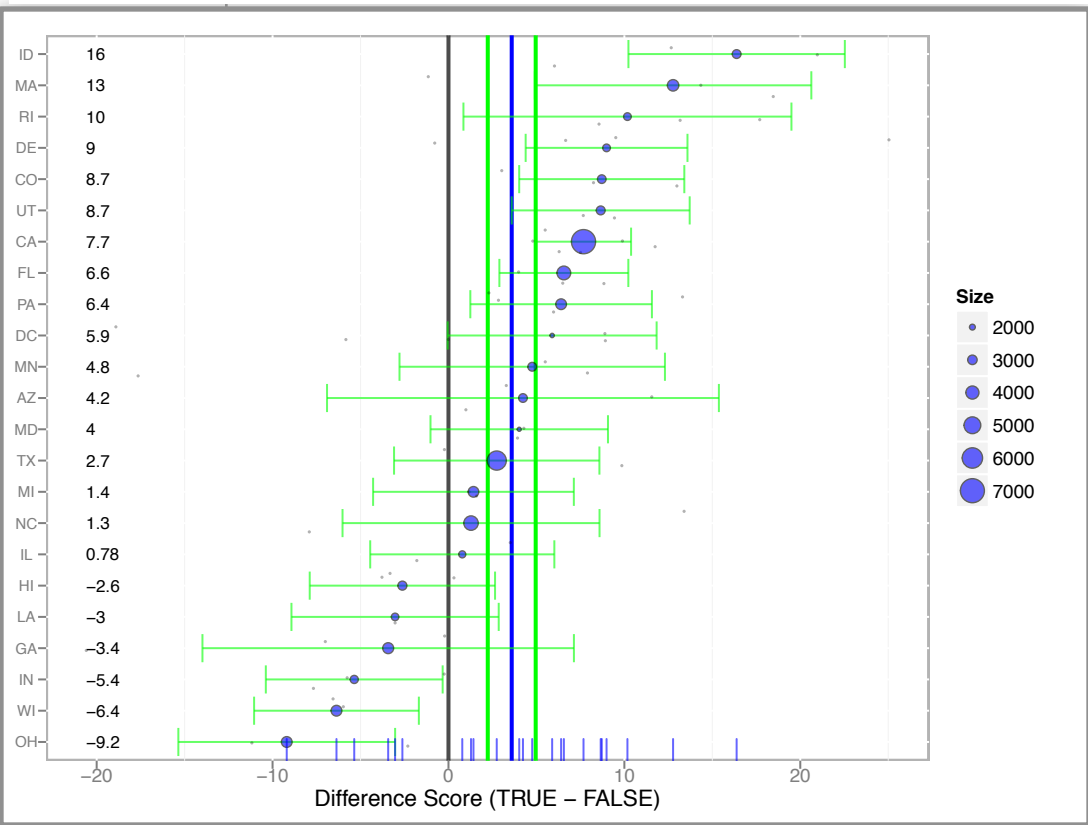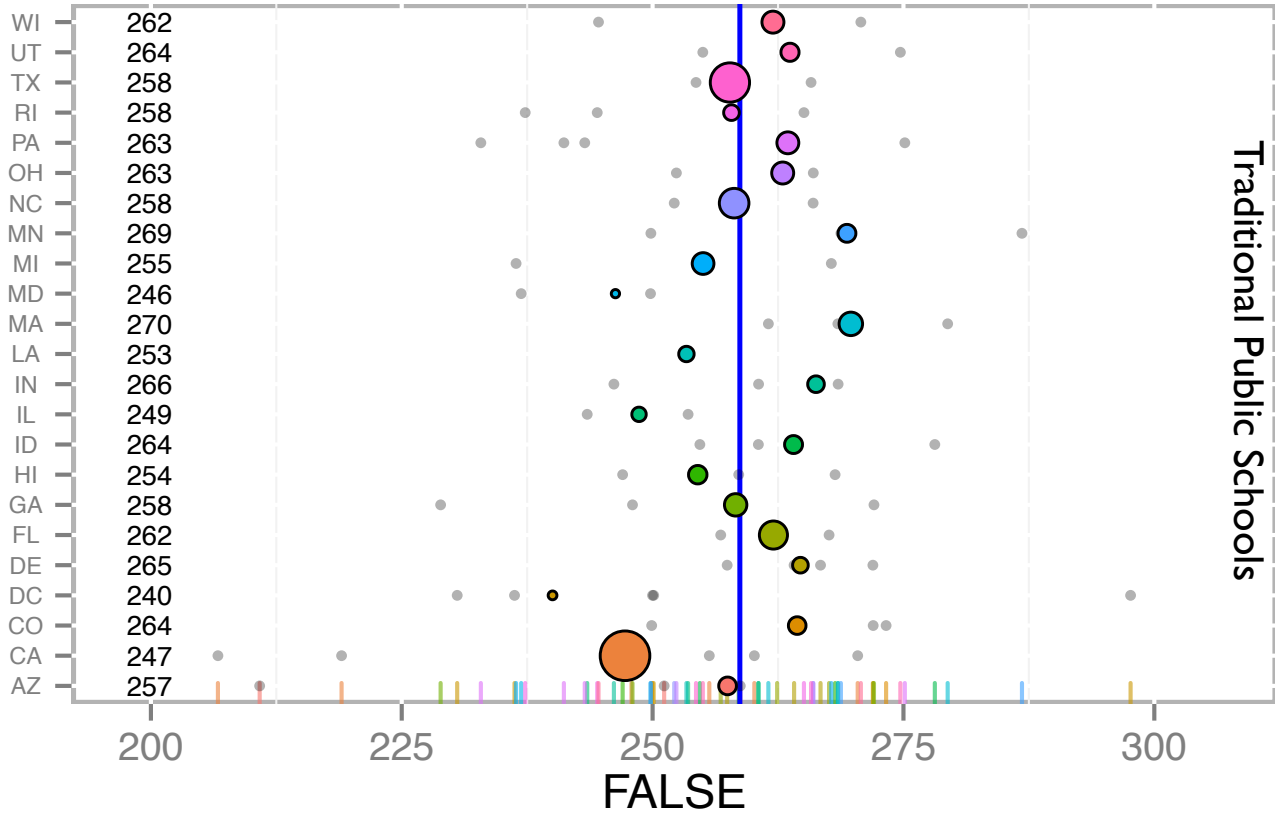Natl School Lunch Prog eligibility (3 categories)
Student classified SD or ELL
Student has Individualized Education Plan
Go to book clubs, competitions, fairs for reading
Do Eng/lang arts at after–school or tutoring prog
Use school/public library for info for own use
Read for fun on own
Reading is a favorite activity
Student classified as having a disability (504)
Student classified Eng Lang Learner (3 categories)
Gender
Language other than English spoken in home
Days absent from school last month
Talk about studies at home
Encyclopedia in home
Computer in home
Newspaper in home
Books in home
Father's education level
Mother's education level
Pages read in school and for homework
Magazines in home

Depth: 1 2 3 4

Covariate Balance Plot

Race/ethnicity from school records (raw data)_Black
Race/ethnicity from school records (raw data)_White
Natl School Lunch Prog eligibility (3 categories)
Do Eng/lang arts at after–school or tutoring prog
Go to book clubs, competitions, fairs for reading
Reading is a favorite activity
Read for fun on own
Language other than English spoken in home
Talk about studies at home
Race/ethnicity from school records (raw data)_Hispanic
Gender
Student classified Eng Lang Learner (3 categories)
Encyclopedia in home
Days absent from school last month
Student has Individualized Education Plan
Student classified as having a disability (504)
Magazines in home
Mother's education level
Student classified SD or ELL
Books in home
Pages read in school and for homework
Use school/public library for info for own use
Race/ethnicity from school records (raw data)_Other
Newspaper in home
Race/ethnicity from school records (raw data)_Asian Amer/Pacif Is
Computer in home
Race/ethnicity from school records (raw data)_Amer Ind/Alaska Nat
Father's education level

Effect Size: 0.0 0.1 0.2 0.3 0.4

Adjusted ● Unadjusted ▲

Charter Schools

TRUE: 300 275 250 225 200

262 255 273 246 274 269 255 252 280 249 261 250 283 250 256 274 259 254 270 268 260 272 256

AZ CA CO DC DE FL GA HI ID IL IN LA MA MD MI MN NC OH PA RI TX UT WI

262

259

300 275 250 225 200

200 225 275 300

Grade 8 Reading

Multilevel Propensity Score Analysis with Conditional Inference Trees

By Jason M. Bryer (jason@bryer.org) in support of a
dissertation submitted to the University at Albany in
partial fulfillment of the degree of Doctor of Philosophy
Data Source: National Assessment of Educational Progress
(NAEP; National Center for Educational Statistics, 2009)
Website: www.github.com/jbryer/Dissertation

UNIVERSITY AT ALBANY
State University of New York

Multilevel PSA Difference Plot

ID 16
MA 13
RI 10
DE 9
CO 8.7
UT 8.7
CA 7.7
FL 6.6
PA 6.4
DC 5.9
MN 4.8
AZ 4.2
MD 4
TX 2.7
MI 1.4
NC 1.3
IL 0.78
HI −2.6
LA −3
GA −3.4
IN −5.4
WI −6.4
OH −9.2

Size: 2000 3000 4000 5000 6000 7000

Difference Score (TRUE − FALSE): −20 −10 0 10 20

WI 262
UT 264
TX 258
RI 258
PA 263
OH 263
NC 258
MN 269
MI 255
MD 246
MA 270
LA 253
IN 266
IL 249
ID 264
HI 254
GA 258
FL 262
DE 265
DC 240
CO 264
CA 247
AZ 257

Traditional Public Schools

FALSE: 200 225 250 275 300