

Final Project (Exam 3): Project Star

Due: Thursday 29 April 2021 at 10:00 AM

Instructions: Turn in your R code and your write up (as comments) in the same .R file. You should be turning in two files, the .R script and a .pdf version of that same .R script.

Education policymakers disagree over the extent to which school resources can improve educational outcomes. The Tennessee Student/Teacher Achievement Ratio experiment, known as Project STAR, aimed to provide evidence on this issue by randomizing students and their teachers into three types of classrooms: small classes (13-17 students per teacher), regular classes (22-25 students), and regular classes with full-time teachers' aides (also 22-25 students). The experiment took place in the mid-1980s in Tennessee public schools. The dataset contains data on the test scores, background characteristics, and classroom characteristics of kindergarteners involved in the experiment. The questions below guide you through an analysis of the effects of classroom resources on student test scores.

1. The designers of the study did not keep the records of the initial assignment of the students to classrooms; the dataset only has information on the classroom type that students actually attended. Why might the initial assignment and the actual classroom attended differ? How would that difference affect the proper interpretation of the study's results?
2. To simplify the data analysis, drop regular classes with aides. (no need to put anything for this question in your writeup)
3. Summarize the data: What can you say about the characteristics of the population we are studying? How might the composition of the sample affect the policy implications of the experiment? Do not just give R output. Pretend that the reader of your answers doesn't know what the variable names are. Your job is to summarize only the important or surprising features of the data.
4. Estimate the effects of class size on reading and math scores. Discuss the results. Is being in a small class more beneficial for reading or for math?