UCLA Anderson School of Management

Prescriptive Models and Data Analytics
Problem Set #1

Setup

All questions below are based on the paper "Does Price Matter in Charitable Giving? Evidence from a Large-Scale Natural Field Experiment," by Karlan and List, *The American Economic Review* (2007).

1 Table 1

Question 1. Load the "`charitable_giving.csv`" dataset and run a regression to assess whether the average "Number of months since last donation" is significantly different between treatment and control. Interpret the relevant regression coefficients and compare the regression-based comparison to the group-specific means reported in Table 1 of the paper.

Question 2. Is the difference in "Number of month since last donation" between treatment and control statistically significant (at the usual 95% confidence level)? Is this the result you expected?

Question 3. More generally, describe the take-away from Table 1 in the paper.

2 Response rate regressions

Question 1. Run a linear regression of response rate (the donation dummy) on the treatment dummy (and an intercept). Interpret both coefficients and compare them to the results presented in the first row of Table 2a.

Question 2. Run a regression on three dummies for match ratio treatment (1:1, 2:1, and 3:1 and an intercept). Interpret all four regression coefficients.

Question 3. Calculate the response rate difference between the 1:1 and 2:1 match ratios.

Question 4. Based on the regressions you just ran and more generally the results in Table 2a, what do you conclude regarding the effectiveness of using matched donations?

3 Response rates in red/blue states

Question 1. Repeat the regression of response rate on treatment and an intercept (do not include separate match ratio dummies). But this time, base the regression only on respondents in blue states or red states. I.e. run two regressions, one on each of the two sub-samples of data. Interpret the coefficients in both regressions. Is the treatment more effective in red or blue states?

Question 2. States are of course not randomly assigned. Does the treatment coefficient have a causal interpretation in each of the two regressions? Does the difference in the treatment effect between states have a causal interpretation?

4 Response rates and donation amount

Question 1. Run a regression of dollars given on a treatment dummy and an intercept. Interpret the regression coefficients. Does the treatment coefficient have a causal interpretation?

Question 2. Next, regress dollars given on a treatment dummy and an intercept, but base the regression only on respondents that made a donation (i.e. `donation_dummy` is equal to 1). This regression allows you to analyze how much respondents donate *conditional* on donating some positive amount. Interpret the regression coefficients. Does the treatment coefficient have a causal interpretation?