

Problem Set 2  
EC140

**Randomized Controlled Trials (With a Little of Regression)**

Due Friday July 15th, 5pm on Gradescope

Watch [this video](#) from the great Econimate, and answer the following questions:

[You are not asked to read the paper, just focus on the the video and the tables in the paper and its appendix referred here

Each questions will be weight equally and assess according to the following criteria:

No Answer = 0, incorrect or unclear =1pt, correct but incomplete = 2pt, correct and complete = 3pt. ]

1. Describe the experiment. What is the treatment? What is the population?
2. What are the main outcome and treatment variables for the first part of the experiment, remember to define what are the observations in this data.
3. Imagine that we do not have an experiment, but we do have observational data of individuals that attended a workshop on sleeping well and individuals who did not attend. What would the simple difference in groups would show us (assuming that the underlying causal effect is constant across all individuals)? What are potential reasons why  $E(Y_0|D=1)$  might not equal to  $E(Y_0|D=0)$  in this case?
4. Examine Table A.1 in the [appendix](#) of the [paper](#) (both available in bCourses), choose one row (including its corresponding numbers in parentheses below) and provide a one line interpretation for each term. Provide the simplest formula for the numbers of parenthesis described in class.
5. Find the information for the first figure of treatment effects discussed on the video (~4min 10sec) in table A.VI of the appendix (specifically the 27 minutes). Interpret its corresponding confidence interval. Write down the regression equation that corresponds to this difference in means (assume no other control variables).
6. Explain in plain English the effects of the treatment “Devices+Incentives Only” on the index of cognition and on earnings in table A.VII of the appendix (these are part of the results behind the figure at 5mins 25secs).