Assignment #5

MACS 30000, Dr. Evans
Due Monday, Nov. 12 at 11:30am

1. **Experiments on Amazon Mechanical Turk (3 points)**. Go to the Amazon Mechanical Turk website. Either sign in as a worker, if you already have a Mechanical Turk account, or click "Get Started with Amazon Mechanical Turk" and then click "Create a Worker account" under the "Make Money" icon. This worker account will let you browse the different options currently available on MTurk. Once signed in, select "HITs" at the top of the window. These are "Human Intelligence Tasks". Most of these are jobs in which Amazon workers do some manual classification. A smaller number are surveys. The following questions have to do with experiments.

   (a) Search for an experiment on MTurk that interests you. (Hint: You might want to "Search all HITs" for a job or project that has the word "experiment" in it.)

   (b) Describe the full payment structure of this experiment. That is, the reward column says an amount, but there is a lot more information available as to what that amount means.

   (c) Describe any qualifications, eligibility requirements, or restrictions (or lack thereof).

   (d) How long does this job take? What is the implied hourly rate (dollars per hour)?

   (e) When does this job expire?

   (f) What is the most this project would cost the HIT experiment creator if 1 million people participated in the task?

2. **Costa and Kahn (2013) (4 points).** Read the paper Costa and Kahn (2013). This paper builds off of the electricity market studies of Schultz et al. (2007) and Alcott and Rogers (2014). Write your responses to the following questions as a one-to-two-page composition.

   (a) State the research question of this paper in the form of a question and in one sentence?

   (b) The data for this study came from at least two sources. Name the sources, and describe the data.

   (c) Define and describe the control group and the treatment group in this study. What was the treatment?

   (d) Beyond the previous work of Schultz et al. (2007), what extra layer of participant heterogeneity did Costa and Kahn control for in order to answer their research question?

   (e) What was Costa and Kahn's finding?

3. **Analytical exercise (3 points).** This is exercise #19 at the end of Salganik (2018, Ch. 4) with a slight addition. A good reference for how to answer this question is Salganik (2018, pp. 203-209), the sections entitled "Potential Outcomes Framework" and "Precision". A new experiment aims to estimate the effect of receiving text message reminders on vaccination uptake. One hundred and fifty clinics, each with 600 eligible patients, are willing to participate. There is a fixed cost of $100 for each clinic you want to work with, and it costs $1 for each text message that you want to send. Further, any clinics that you are working with will measure the outcome (whether someone received a vaccination) for free. Assume that you have a budget of $1,000.

   (a) Under what conditions might it be better to focus your resources on a small number of clinics and under what conditions might it be better to spread them more widely?

   (b) What factors would determine the smallest effect size that you will be able to reliably detect with your budget?

References

Alcott, Hunt and Todd Rogers, "The Short-run and Long-run Effects of Behavioral Interventions: Experimental Evidence from Energy Conservation," *American Economic Review*, 2014, *104* (10), 3003–3037.

Costa, Dora L. and Matthew E. Kahn, "Energy Conservation Nudges and Environmentalist Ideology: Evidence from a Randomized Residential Electricity Field Experiment," *Journal of the European Economic Association*, June 2013, *11* (3), 680–702.

Salganik, Matthew J., *Bit by Bit: Social Research in the Digital Age*, Princeton University Press, 2018.

Schultz, P. Wesley, Jessica M. Nolan, Robert B. Cialdini, Noah J. Goldsteinand, and Vladas Griskevicius, "The Constructive, Destructive, and Reconstructive Power of Social Norms," *Psychological Science*, 2007, *18* (5), 429–434.