Assignment 5

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1. Experiment on Amazon Mechanical Turk

(a)

I chose "Are you in a relationship? Relationship study - 3 to 5 minute psychology study".

(b)

Participants can get $0.5 as long as they finish the experiment and the experiment requester approves it.

(c)

Only those who are located in U.S. with HIT approval rate (%) not less than 95, and are in a committed relationship with someone, are eligible for this experiment.

(d)

This job takes around 4 miniutes. The implied hourly rate is $7.5/hour.

(e)

This job expires on 11/08/2018.

(f)

This project would cost the HIT experiment creator $500,000 if 1 million people participated in the task.

2. Costa and Kahn (2013)

The paper Costa and Kahn (2013) aimed to answer this research question: how does environmentalist ideology affect people's reaction to the electricity conservation "nudge" of "providing feedback to households on own and peers' home electricity usage in a home electricity report"(Costa, Kahn(2013): p.680)?

The primary data set for this study came from "residential billing data from January 2007 to October 2009"(Costa, Kahn(2013): p.685) provided by a large California utility district. This data set provided "information on kilowatt hours purchased per billing cycle, the length of the billing cycle (measured in days), whether the house uses electric heat, and whether the household is enrolled in the electric utility's program to purchase energy from renewable sources"(Costa,

Kahn(2013): p.685).

To study the affect of environmentalist ideology, the authors collected data on the households' ideology, including "the customer’s political party of registration, household donations to environmental organizations and household participation in renewable energy programs, and data on the characteristics of the local residential communities where the households live" (Costa, Kahn(2013): p.681).

In this study, households are divided into treatment and control groups. All the households were from "85 census tracts with a high density of single-family homes". They selected households that "have a current account with the electric utility that had been active for at least one year, could not be living in apartment buildings, and had to be living in a house with square footage between 250 and 99,998 square feet"(Costa, Kahn(2013): p.683). Then they alternatively assigned 5 contiguous census blocks into treatment and control groups until both had size of roughly 35000 households. "The remaining census blocks (about 14,000 homes) were assigned to the control group"(Costa, Kahn(2013): p.683). The treatment on the treatment group was that these households received monthly or quarterly Home Electricity Reports containing their own and peers' electricity usage, while the control group didn't receive them.

In the previous work of Schultz et al.(2007), only the "above- vs. -below average energy consumption dummy"(Schultz et al.(2007):p.430) was included as a control variable. Costa, Kahn(2013) further included month/year fixed effects, mean daily temperature within the billing cycle, whether the house is an electric house, block characteristics, house characteristics, the household’s electricity usage in 2006, and the age of the head of the household as control variables.

Finally they found that compared to conservatives, liberals reduce a larger proportion of their electricity consumption in response to receiving Home Electricity Reports. And conservatives are more likely to report that they don't like the reports and opt out of receiving the reports.

3. Analytical exercise

(a)

When there are many unobserved factors lying in the heterogeneity among clinics, it's better to spread my resources on a larger number of clinics. In this case, including more clinics increases randomness in these factors, so that these factors are balanced between the treatment group and the control group. When there are few unobserved factors that can affect the outcome, it's better to focus my resources on a small number of clinics to save the fixed cost on the clinics.

(b)

One factor is the precision level we desire. When we require higher level of precision, the standard error of the average treatment effect needs to be smaller, which requires the sample size to be larger.

Another factor is the absolute and relative variability of average outcome under treatment and control. When the absolute variability of them are large, or when they are not balanced, we need more samples to make our estimation more precise.

References

Costa, Dora L. and Matthew E. Kahn, “Energy Conservation Nudges and Envi- ronmentalist 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. Gold- steinand, and Vladas Griskevicius, “The Constructive, Destructive, and Re- constructive Power of Social Norms,” Psychological Science, 2007, 18 (5), 429–434.