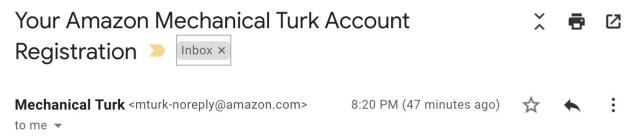
MACS Assignment 5 Neta Grossfeld November 12, 2018

Question 1: Experiments on Amazon Mechnical Turk

I was unable to successfully register with Amazon Mechanical Turk. I've included their email, which provides no reason as to why I was denied.



Greetings from Amazon Mechanical Turk,

We have completed our review of your Amazon Mechanical Turk Worker Account. We regret to inform you that you will not be permitted to work on Mechanical Turk.

Our account review criteria are proprietary and we cannot disclose the reason why an invitation to complete registration has been denied. If our criteria for invitation changes, you may be invited to complete registration in the future.

Thank you for your interest in Mechanical Turk.
Sincerely,
Amazon Mechanical Turk
https://www.mturk.com

Question 2: Costa and Kahn (2013)

Costa and Kahn put forth that, based on many previous studies by authors such as Cialdini et al. and Schultz et al., "nudges" could be a low-cost method in reducing energy consumption. But do "nudges", such as peer comparison via an effectively worded message, change an individual's behavior in regards to energy conservation across political party or ideology preference?

The primary source of data used for this study was residential billing data spanning from January 2007 to October 2009 and was provided by the electric utility company. This data included fields such as the number of days in the billing cycle, the amount of energy in kilowatt-hours purchased within the cycle, the status of enrollment in the renewable sources program, and the use of electric heat in the home.

Another source of data came from the treatment and control groups, which covered other details on the household such as square footage, the heating method used, the age of the

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house, and when the household began receiving the nudges. An additional source of data came from voter registration information, along with census block group data.

In this study, the treatment group includes approximately 35,000 households that received either a monthly or quarterly Home Electricity Report that presented them with information on their home electricity and natural gas usage compared to their peers. The control group consisted of the approximately 49,000 households who have never received a Home Electricity Report. Specifically, the households selected were in census tracts with majority single-family homes, were not within apartment buildings, and had active accounts with the electric utility company for at least a year.

While the impact of the Home Electricity Reports on individual behavior change and energy consumption had previously been studied by Schultz et al., Costa and Kahn additionally controlled for the individual's party ideology. They identified ideology based on political party affiliation as listed in the voter registration data, donations made to environmental organizations, or the purchase of green energy. The assumption behind the last two measures of ideology was that liberals are much more likely to donate to environmental causes and support renewable sources of energy.

Costa and Kahn found that the Home Electricity Nudges that utilized peer comparisons to individual household energy consumption had a greater effect in the reduction of energy consumption of liberals than conservatives. Additionally, households identified as liberal were 15% less likely to opt out of the reports and were 28% more likely to say within a survey that they liked the reports compared to conservatives in the treatment group.

Question 3: Analytical Exercise

The trade-off between a small or large number of clinics to focus on are bias and variance. That is, a smaller sample population of clinics would lead to greater bias, and a larger sample population of clinics would reduce bias but also increase the variance. Bias increases with the smaller sample because it is likely that the particular clinic's patients are similar to each other, especially if a patient's clinic choice is based on geographical factors. This would mean that a particular clinic's patient population isn't representative of all the patients for all the clinics. If the clinic's patients are homogenous, we would prefer to trade-off the bias for a variance by choosing to spread the number of clinics more widely.

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Our budget of \$1,000 is pretty small for the price of the clinic and the text messages. We could cluster two similar clinics, in which one clinic would be the control and the other clinic be the treatment group. Specifically, the cost of the two clinics would be \$200 and the cost of sending 600 \$1 text messages to the patients of the treatment clinic would total \$800. We would look at the rate of vaccinations in the control group and compare it to the rate of vaccinations in the treatment group after the text message reminders have been sent. I think that a single text message reminder would result in a very small average treatment effect. That is, the rate of vaccinations in the treatment group may not be significantly greater than the rate of vaccinations in the control group.