Pre-Analysis Plan

This experiment compares the efficacy of two behavioral approaches encouraging parents to redeem an online gift card. We plan to assign parents to two treatment groups and one control group. All groups will receive brief information through text messages and emails about the gift card with a link. Besides, one treatment group will receive a short sentence that encourages them to buy something for their children with the gift card. The other treatment group will receive a short sentence that phrases the gift card's value to an equivalent hourly wage. We will send these text messages and emails once a week for four consecutive weeks. This study aims to compare how different behavioral messaging increases the redemption rate of gift cards at the end of the intervention.

The analytical sample for estimation includes parents who:

(1) Have yet to redeem their gift cards at all

(2) Can be contacted by our documented phone number or email address

(3) Remain in the study until the end of the intervention or after redeeming their gift cards

The intent-to-treat (ITT) model is

$$Y_i = \beta_0 + \beta_1 T_{1i} + \beta_2 T_{2i} + \epsilon_i \tag{1}$$

where Y_i is a binary variable indicating the redemption status of parent i after sending each message and at the end of the intervention; T_{1i} is an indicator of parent i assigned to treatment arm 1; T_{2i} is an indicator of parent i assigned to treatment arm 2; and ϵ_i is a robust error term. We will cluster the error term by the balance of the gift card when estimating the pooled treatment effect of the intervention related to the hourly wage. Because the omitted group is the control group, the coefficients of T_{1i} and T_{2i} estimate the average treatment effects of treatment arms 1 and 2 for parent i. In the main regression specification, we also plan to control any unbalanced variables where an f-test of differences in means across conditions is significantly different at the .1 level at baseline. We can conduct randomization inference to impute empirical p-values as a robustness check.

Since we conducted a comprehensive survey on these parents, we plan to utilize survey measures to estimate heterogeneous treatment effects (HTE) in three categories of parental characteristics: (1) demographic information, including parental education and household income; (2) cognitive characteristics, including stress, present bias, and financial scarcity mindset; and (3) parenting belief. Specifically, we will divide the sample by whether parents have a BA degree. We will treat household income and stress both as continuous variables and divide them by the median of the distributions. We will construct binary variables for other baseline measures based on the structure of specific questions. The HTE model is

$$Y_i = \beta_0 + \beta_1 T_{1i} + \beta_2 T_{2i} + \theta_1 T_{1i} * Z_i + \theta_2 T_{2i} * Z_i + \alpha X_i + \epsilon_i \tag{2}$$

where Z_i is the baseline characteristic; the coefficients θ_1 and θ_2 show the difference in treatment effects by the baseline characteristic; X_i is a vector of controls including the indicated baseline characteristic, and the unbalanced variables.