ECON 35550 Assignment 2

Due: November 3rd, 2022

This assignment has two parts. In the first part of the assignment, you will be asked to conduct different types of randomization and perform balance checks with a dataset adapted from Buchmann et al (2022) on child marriage in Bangladesh. To get full credit on the coding questions, you will need to clearly describe each step that you take on the code.

The second part of the assignment will guide you to replicate a short survey on SurveyCTO. This exercise will help you get familiar with features like skip patterns, validating responses etc. SurveyCTO is one of the most commonly used tools for data collection, especially in field settings. For this exercise, you will need to register a free SurveyCTO account for 15 days.

You may choose to work individually or in a group of 2. **Your final submission should include your code (preferably in Stata or R), a printable version of your survey form, and a write-up.** If you work in a group, only one submission will be required.

Part I. Randomization and Balance Check [50 points]

1.1 [5 points] State the research question of Buchmann et al (2022).

1.2 [10 points] The authors ran a clustered randomized trial in 460 rural communities within six sub-districts. The dataset *main.csv* contains 23,521 women aged 15-17 (at the time of the baseline) from the 460 rural communities [1]. The sample communities were randomized to receive either i) the conditional incentive to delay marriage, ii) the basic empowerment program, iii) empowerment plus conditional incentive, or iv) the status quo. Using the data, perform a complete randomization with the allocation ratio of 1:1:1:1.[2]

1.3 [10 points] Produce a balance table for all married and unmarried women aged 15-17 at program start. The variables of interest are ever married (%), still in-school (%), and highest class passed. Your balance table should look similar to the first panel of Table A.1

[1] The dataset is a modified version of *Bangladesh_baseline_census.dta* from Buchmann et al (2022).

[2] There are packages in Stata and R that perform random treatment assignment. You may choose to use the package for this exercise. If you do, make sure you understand how the package works and explain how you apply it to this setting.

from the paper [3].

1.4 [15 points] In the paper, the authors use a stratified randomized design. They stratify by union, an administrative grouping of roughly 10-20 communities, and within union by community size. Using the data, perform a stratified randomization **on the union variable only** with the allocation ratio of 1:2:1:2.

1.5 [10 points] Repeat 1.3 and produce a balance table for the stratified randomization.

Part II. Survey Design with SurveyCTO [50 points]

Suppose you are part of the research team in Bangladesh and plan to conduct a follow-up survey in the 460 communities 6 months after the experiment started. The follow up survey aims to collect data on women's education and marriage.

2.1 [30 points] Design a survey on SurveyCTO using the script provided to you. Make sure you set the field type, constraints, and relevance conditions for each question correctly.

Download a printable version of your survey (design tab → download → printable version). **Make sure that the survey script includes relevance expressions and constraints.**

2.2 [20 points] The analysis sample in Buchmann et al (2022) includes all unmarried girls in the 460 communities aged 15-17 at program start. Apply this sample restriction to your dataset.

Then randomly select 5 unique member IDs from each of the 4 treatment arms (so you should have a list of 20 member IDs in total) and test your survey using these 20 IDs. Test it yourself and do not have others do it. We are not asking to run an experiment.

Looking at your data, what share of women is married by the time of the follow-up survey in each treatment arm? What share is currently enrolled in school?

[3] Since we are using a modified version of the dataset, your numbers should look different from those in Table A.1.