THAMMASAT

EE 461

Semester 2/2020

ASSIGNMENT I

This assignment has three parts. Each student needs to hand in your own answer via google classroom.

PART 1

Skim the paper:

Edward Miguel and Michael Kremer, "Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities," Econometrica 72, no. 1 (January 2004): 159–217."

You can find the paper in the google classroom or on bemoodle.

1. Explain the underlying selection bias problem that leads the authors to use RCT.

2. Explain briefly what the treatment and the outcome are.

3. Read the following sidebar from Tayler&Lybbert(2020) and explain what happened in Kremer and Miguel's worms study to confound the experiment. How did Kremer and Miguel argue about the treatment effect and externality?

> "Worms are bad (unless they're the garden variety). Hookworm and roundworm each infect approximately 1.3 billion people around the world; whipworm affects 900 million, and 200 million are infected with schistosomiasi. Intense worm infections keep kids from going to school and reduce their educational achievement. Could it be that a key to literacy is (getting rid of) worms? Edward Miguel and Michael Kremer analyzed an RCT experiment to raise school attendance in Kenya by treating children for worms. A clearly defined treatment for worms was administered to children in a randomly selected sample of schools (the treatment group) but not in other schools (the control group). This project had a simple and easily measured outcome: school attendance. The ex-post research question was whether or not children in the treated schools were more likely to attend school after the treatment. It seemed to be a squeaky clean experimental design. What could go wrong with it? Actually, something went too right, from an analytical point of view. The treated schools treated the control schools. Maybe treated kids played with control kids after school or had contact with others who, in turn, had contact with control kids. The study could not tell us why, but for whatever reason, kids in the control schools got better, too. Miguel and Kremer call this an "externality" of the treatment. (We'll learn about externalities in chapters 6 and 11.) In experimental jargon, it is called "control group contamination." Really, it is a linkage—in this case, an epidemiological one—that transmitted the benefits of the project from those directly affected (the kids in the treatment school) to others in the project's zone of influence. Not surprisingly, the authors found that the farther a treated school was from a control school, the lower the control group contamination and, therefore, the bigger the measured impact of the treatment based on comparing the two schools. Since kids in control schools got better, it was hard to find a positive effect on school attendance by comparing the treatment and control groups. It is ironic that a treatment potentially can be so successful that you cannot show it has any effect at all.

PART 2

Find one innovation product/service that helps the poor. Explain the purpose of that product/service and how it helps the poor. Provide your opinions on how the innovation can improve the well-being of the poor. Discuss if you have any suggestions to improve upon the design of the innovation. Please limit your answer to 2 pages.

The product/service or innovation should be different from your friends and not the same as the following examples: https://mashable.com/2016/10/17/poverty-innovations/#2Wge_i6prkqt

PART 3

Watch the clip below:

'FI2020 Global Forum: Sendhil Mullainathan (Professor of Economics, Harvard University)'

https://www.youtube.com/watch?v=b7uNHbpwKwI&feature=emb_title

Summarize what you watching/listening in your own words. Please limit your work to 1 page.