

## Final Class Project

The main purpose of the final project is for you to get to know a real randomized intervention and estimate its impact effect. The randomized intervention provided information to first-time mothers living in poverty in Nashville TN. The information to young mothers was included in books, called hereafter baby-books. Mothers in the intervention group received new baby-books every two-months. The hypotheses of the final project is to estimate whether the new information provided to mothers in the baby book group improve:

- 1) their parenting skills,
- 2) the nutritional practices with their babies,
- 3) post-partum depression,
- 4) work fewer hours,
- 5) face stress better, and
- 6) prevent un-intentionally baby injuries.

Overall, helping these first-time young women become better and healthier mothers.

Each group will estimate an intent to treat (ITT) and the treatment on the treated (TOT) effect of the randomized educational book intervention. To measure the effect of this intervention, first time mothers ( $n = 167$ ) were randomly assigned to one of three groups: 1) an educational book group (the intervention), 2) a non-educational book group, or 3) a no book group. Participants were interviewed by either phone (12 times) or personal interviews (7 times).

On the interviews, participants self-reported all the outcomes of interest such as type and occurrence of their child's unintentional injuries, knowledge learned by reading the given books, labor market outcomes, post-partum depression, stress, and many other important outcomes.

**Each one of the groups in class will examine the impact of this randomized intervention on one of the main outcomes of interest.**

Each group will write a 10-15 page report. In additions, each group will submit a do file, a log, a report in Word, and a power point presentation (about 15-20 slides). The report and power point presentation should include five sections: Introduction, Data description, Methodology, Main Results, Conclusions and Recommendations.

The group report should answer the following questions:

- 1) What is the intervention about? Explain the study design, sample size, recruitment place and the methodology proposed in the grant proposal. Write down the results chain describing the inputs, activities, outputs, and outcomes of this intervention.

- 2) At baseline: Describe the characteristics of each group. 10 points Does the intervention have a valid counterfactual? Explain why this step is important on your report.
- 3) Estimate the outcome of interest by subject, group, and time. (Suggestion: make sure you estimate the outcome of interest at baseline and create fixed time intervals, for instance, when the baby is 0, 6, 12 and 18 months old. Some outcomes were not asked at the exact desirable time intervals, but you can estimate the mean or sum of the outcomes at the nearest given time).
  - a. Identify all the variables you will use in your analysis and create two final datasets: 1) A wide cross-sectional dataset including household demographics, outcome of interest, and time fixed variables. 2) A panel dataset. **Outcomes of interest can be created at different times but the ideal times are based on the baby's own age at baseline (when baby was not even been born) and at 2, 6, 9, 12, and 18 months after the baby is born.**
  - b. Determine the participation rates by group at 2, 6, 9, 12, and 18 months. Explain concerns or strengths in terms of the internal and external validity of the intervention.
  - c. What is the ITT effect of the intervention on your outcome? Estimate the treatment effect by using a
    - 1) pre-post analysis,
    - 2) a randomized assignment, and
    - 3) a difference-in-difference methodology.Explain and compare your results.
  - d. For each estimation in c, explain: Did outcome improved or got worse? Was the outcome change linear or nonlinear?
  - e. Was the rate of change different by group? Interpret the results
- 4) What baseline factors correlate with the outcome of interest? For instance, are children's injuries a function of their own developmental growth (i.e. increasing as children grow older), children's gender (i.e. do boys have more injuries than girls?), mother's education? Mother's marital status.
- 5) Estimate the TOT intervention effect by using a pre-post, a randomized assignment, and a difference-in-difference methodology. Explain and compare your results with your previous ITT.

**Data and Documentation:** To do this final project, you will have the questionnaires use to gather the information, dataset, and codebooks. All these documents are available on BrightSpace.

**Due date:** The final report is due April 14<sup>th</sup>. The project presentations are due April 14 and 16<sup>th</sup>. Two group presentations per day.

**Assistance from Professor and TA:** I strongly advised to request meetings with your professor and TA but meetings are optional. Each group can request 15-30-minute one-to-one meetings with your Professor to either review questions you might have or show progress. These meetings will take place at Calhoun 212A during regular class time on TR 8:10-9:25am. Please meet with your TA on data management and analysis issues. If you do not have any questions or do not have any progress, you do not need to request these meeting. If you request a group meeting, please come prepare (never empty-handed) and have concrete questions and possible solutions.

**List of outcomes - randomly distributed among groups:**

1. Nutrition and Safety knowledge
2. Parenting and Development knowledge
3. Total Mother's knowledge
4. Mother's depression
5. Mother's stress
6. Unintentional children's injuries
7. Labor outcomes: working hours and labor participation (working or not)