Quiz Day 4

EGAP Latin America Hub Learning Days

10 August 2023

Question 1

- **Inquiry**: We seek to examine the claim that development interventions are most effective when multiple sectors are addressed at the same time.
- **Data (Assignment)**: We identify 200 villages and select 100 for a combination of interventions that includes both health and educational projects.
- **Data (Measurement)**: We gather outcome measures on health, education and income.
- **Analysis**: We estimate effects using simple differences in means between outcomes for children in treatment and control villages.
- **Assumptions**: We assume no spillovers.

Question 2

- **Inquiry:** We seek to assess the welfare gains of a community-driven development program in which communities can choose whether to implement education or health programs.
- **Data (Assignment):** We randomly select 200 out of 400 villages. In selected villages, development committees can choose projects in either education or health.
- **Data (Measurement):** We survey 5 subjects in each village and gather data on education and health outcomes.
- **Analysis:** We estimate effects of health interventions by comparing health outcomes in all treatment areas where communities chose health with control areas. We estimate effects of education interventions by comparing education outcomes in all treatment areas where communities chose education with control areas.

Question 3

- **Inquiry:** We are interested in whether agricultural extension workers lead to increases in productivity.
- **Data (Assignment):** 200 of 400 villages are randomly selected to receive visits from agricultural extension workers in post conflict Congo. Once the treatment villages are identified the extension workers assess whether any villages are too difficult to visit. If so, the treatment is not implemented in these areas.
- **Data (Measurement):** Outcome data is gathered in the all villages using satellite imagery.
- **Analysis:** Treatment effects are measured using simple differences in means of village average productivity comparing villages that extension workers visited to those that they did not.

Question 4

You are asked to advise an NGO on an impact evaluation design. The NGO has enough resources to implement a cash transfer program in 60 farmers and would like to know the impact of the program. A colleague did a power analysis based on a recent survey in a similar area and produced the table below.

	Mean	SD	MDE
Farm yield	0.35	0.70	0.36
Expenses on Mezcal	200	200	103
Income	600	2400	1237

a. Is the study adequately powered to detect an effect of 0.1 SD in farm yield?
b. What would you do which would increase statistical power in the following design?

Question 5

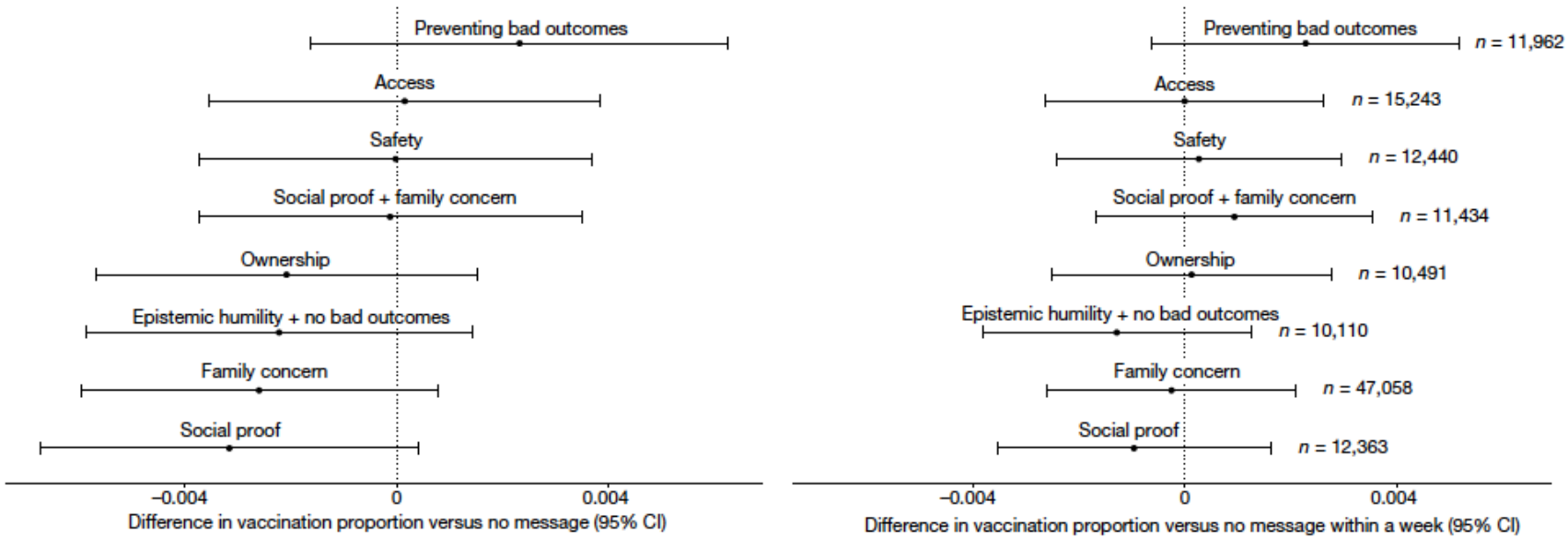
- What is the definition of a p-value

Question 6

- What do we want from a good hypothesis test?

Question 7

Matters arising



- What is the estimate of the ITT for Access messages?
- Interpret the 95% confidence interval

Question 8

Table 12: Intent-to-treat Estimates of Vaccination Rate of People Enumerated During Census

	(1)	(2)	(3)
Pooled Treatment	0.232***	0.252***	0.253***
	(0.015)	(0.016)	(0.021)
Had at least one dose of vaccine at baseline		0.785***	0.640***
		(0.019)	(0.097)
Female		0.056***	
		(0.011)	
Age		0.002***	
		(0.000)	
HH head has had any schooling		-0.016	
		(0.013)	
Household owns land		-0.014	
		(0.011)	
Observations	12113	6804	150
Bootstrapped P-Value	0.00	0.00	0.00
Mean in Control	0.06	0.06	0.06
No. of Villages	150	149	
R squared	0.41	0.42	0.76

Notes: This table presents Intent-To-Treat estimates corresponding to Figure 2. The dependent variable in Columns (1) and (2) is the individual level vaccination status at endline, with heteroskedasticity-robust standard errors clustered at the community level. The regression includes randomization fixed effects (ie for each triplet). In Column (3), the dependent variable is the proportion of adults vaccinated in each community. Included covariates are baseline vaccination status, gender, age, education and land ownership in Column (2). Bootstrapped P-Value is the p-value resulting from a wild bootstrap test of Pooled Treatment == 0, with 999 repetitions. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Question 8

- What is the estimand?
- What is the estimator?
- How large is the treatment effect?
- What is the vaccination rate on control villages?
- What is the sample size?
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