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AT URBANA-CHAMPAIGN

Final thoughts



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Overview

- Internal vs. external validity
- Summary of methods
- Creating a control group ex post
- Reflection exercise



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External validity



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Internal vs. external validity

- This week we've emphasized internal validity
- For policy, external validity is crucial
 - Rodrik 2008
 - Better policy to charge for malaria bednets or give them out for free? Study in W. Kenya
 - Find those who received them for free resulted in higher prevalence and a higher usage rate

Does this answer the question?



Bed net study

- Area where social marketers had been very active
—spread of information
- Bednets offered to women seeking prenatal care
in clinics
- Experiment supplied bednets to the clinics
- Difference between subsidized price and free was
very small



External validity

- We only know that this experiment worked in this setting
- We don't know which contextual factors are relevant
- Conduct experiments in other areas
- Put together systematic reviews of the evidence



What have we learned this week?

- What is impact assessment?
- Methods
 - Randomized Control Trials
 - Matching
 - Difference-in-Differences
 - Instrumental Variables

Econometric techniques for panel data

Different treatment effects



Planning an evaluation

- What is the experiment I would run if I could?
- Can I do an experiment?
- Can I get a counterfactual?
- Do I have more than one round of data for both treatment and control?
- Can I match? Can I assume selection was not driven by unobservables?
- Was there some rule or random aspect by which the program was allocated?



Randomized Control Trials

- Advantages
 - Solve selection problem through random assignment
 - Can be related to economic theory
 - Flexible
- Disadvantages
 - Must be planned in advance
 - Can be expensive



Randomized Control Trials

- Challenges for the researcher
 - Requires funding for baseline and followup
 - Achieving sufficient power
 - Addressing spillover effects
 - Getting NGO/government agency to randomize
 - And that they actually do randomize!



Matching

- Advantages
 - Can use existing data
 - Straightforward to do in Stata
 - Can be used with diff-in-diff
 - Can be used to match units for RCT
- Disadvantages
 - Usually does not solve selection problem by itself
 - Assumes that selection is on observables only



Matching--Challenges for researcher

- Think about how you want to match—within or across villages
- Results can be sensitive to choice of the bandwidth



Difference-in-Differences

- Advantages
 - Deals with selection problem when related to time-invariant error term
 - Can be done as a t-test or in a regression context
 - Can be combined with matching
- Disadvantages
 - Need a baseline
 - Need a control group
 - Biased if treatment correlated with time varying error term



DiD—Challenges for the researcher

- Parallel trends assumption
- Need to establish that treatment and control groups were similar and following the same trends
- Can't do this with a statistical test—need to make an argument
 - Data a period before the baseline
 - Graphing, etc.



Instrumental variables

- Advantages
 - Corrects for selection on time invariant and time variant variables
 - Can do this with just a cross section
- Disadvantages
 - Very difficult to find a valid instrument
 - Need to make a convincing argument about validity
 - IV has to be correlated with treatment, but not with the error term in the outcome regression



IV—Challenges for researchers

- Finding a convincing instrument
- Was there a random aspect to the policy implementation?
- For CGIAR center researchers especially—you can't let availability of a cool IV drive the work that you do.



What if you have no comparison group?

- White (2014)—You can use observational data to do impact evaluation
 - Unobservables can be observed with better measurement of trust, risk aversion, social capital
 - Matching can be used to construct a control group
 - Recreate a baseline ex post



Creating an ex post baseline/control

- White (2014) is optimistic
- Objections to recall data are “hugely overstated”
- Focus on control variables that change little over time (gender, year of birth, race, education)
- Be realistic about what people can remember
- Refer to major events, ask in chronological order
- Ask treatment group same recall questions for validation



Creating an ex post baseline/control

- Are there data from other sources that can be used that are accurate?
- Satellite data—deforestation
- Government data
 - Tax authority
 - Social programs



Take a moment to pair and share

- Please pair with somebody who is not from your center, perhaps somebody you haven't talked to yet this week.
- Give one example of how you will apply something that you learned this week when you return to your job
- Give at least one example of how we can build a community of impact evaluation practitioners (Facebook group? Linked in?)



Final thoughts

- Think about the audience for the impact assessment
- Plan for evaluation from the beginning of the project
 - Need to budget for control group, evaluation
- Qualitative data collection can be very useful
- Impact evaluation is an art as well as a science
 - Choosing appropriate method
 - Demonstrating that assumptions hold

