

Constructing a Competitive Research Proposal: 5 Tips

Christopher Woodruff (University of Oxford)

IGC Webinar, 18 August, 2021



How I spent my summer vacation...

(reading grant proposals...)

Tips for better proposals

1. Research is incremental: Focus your question and show us how you will advance the existing literature
2. Know the literature before you write the proposal
3. Pose a question your data will answer
4. If you want to make causal / policy claims, focus on a counterfactual
5. Sometimes a lot of data is not enough. Ask yourself: “What is the perfect experiment?”

1. Focus your question and show us how you will advance the existing literature

- Research is incremental: Focus your question and link it tightly to the existing literature
 - You are part of a team, even though you may not know your teammates personally. You don't need to answer all of the questions...
 - First impressions will matter... The initial paragraphs tell us why the topic is important, but also how the project will advance the literature.

Which is more compelling?

Proposal 1:

What are the revenue drivers for traders in the informal sector?

What self-employment skills are important in fostering the success of informal traders?

Proposal 2:

- a. What is the relationship between management practices and productivity, employment and growth in other remaining three provinces of Pakistan which have been so far been inaccessible to many researchers?
- b. What is the impact of management practices on productivity, employment and growth in Pakistan?

2. Know the literature before you write the proposal

- The first activity in your proposal should not be “*desk research*.”
- Funded proposals typically have many more citations in the introductory paragraphs.
 - Cites are codewords. They serve as shorthand for a set of ideas.
 - *Example:* In recent years, economists have started to pay attention to establishment-level management practices, attempting to move beyond selective case studies and into collecting systematic and reliable data on how firms are managed in order to empirically investigate the relationship between management and performance (Bloom et al, 2014). This emerging literature finds that large variations in management practices across firms and countries are also strongly associated with differences in performance across firms and countries (Ichniowski, Shaw, and Prennushi 1997; Bertrand and Schoar 2003; Black and Lynch 2001; Bloom and Van Reenen 2007, McKenzie and Woodruff 2015) and recent evidence suggests that this relationship may be causal (Bloom et al 2013).
- Links to the literature not only define the project’s contribution, but they reassure reviewers that the PIs are knowledgeable.

3. Pose a question your data will answer

- Usually for policy-relevant questions, we want to be able to make a causal claim: This policy causes that outcome.
 - Do accelerators lead to faster growth of firms?
- Machine learning is built around prediction:
 - Which entrepreneurs are most likely to succeed?
- Suppose I run a regression:

$$R_i = \alpha + \beta Sch_i + \varepsilon_i$$

- I find that an entrepreneur's schooling is positively associated with success of the enterprise. Is that useful?
- It depends on the question!
 - If an accelerator wants to pick winners, should they choose more educated applicants (all else equal)?
 - If a policymaker is deciding how they should allocate budgets, should they invest more in schools?

4. If you want to make causal / policy claims, focus on a counterfactual

- A famous (very!) early example of the power of a counterfactual comes from a report by “the father of epidemiology”, John Snow.
- London suffered from an outbreak of Cholera in Soho in 1854.
 - The perceived wisdom at the time was that cholera was transmitted through the air, and was an issue of “bad air”.
 - Snow thought it might be “bad water” instead, and wanted to show that.
 - But how?...
- Snow used information that is contained on this map:

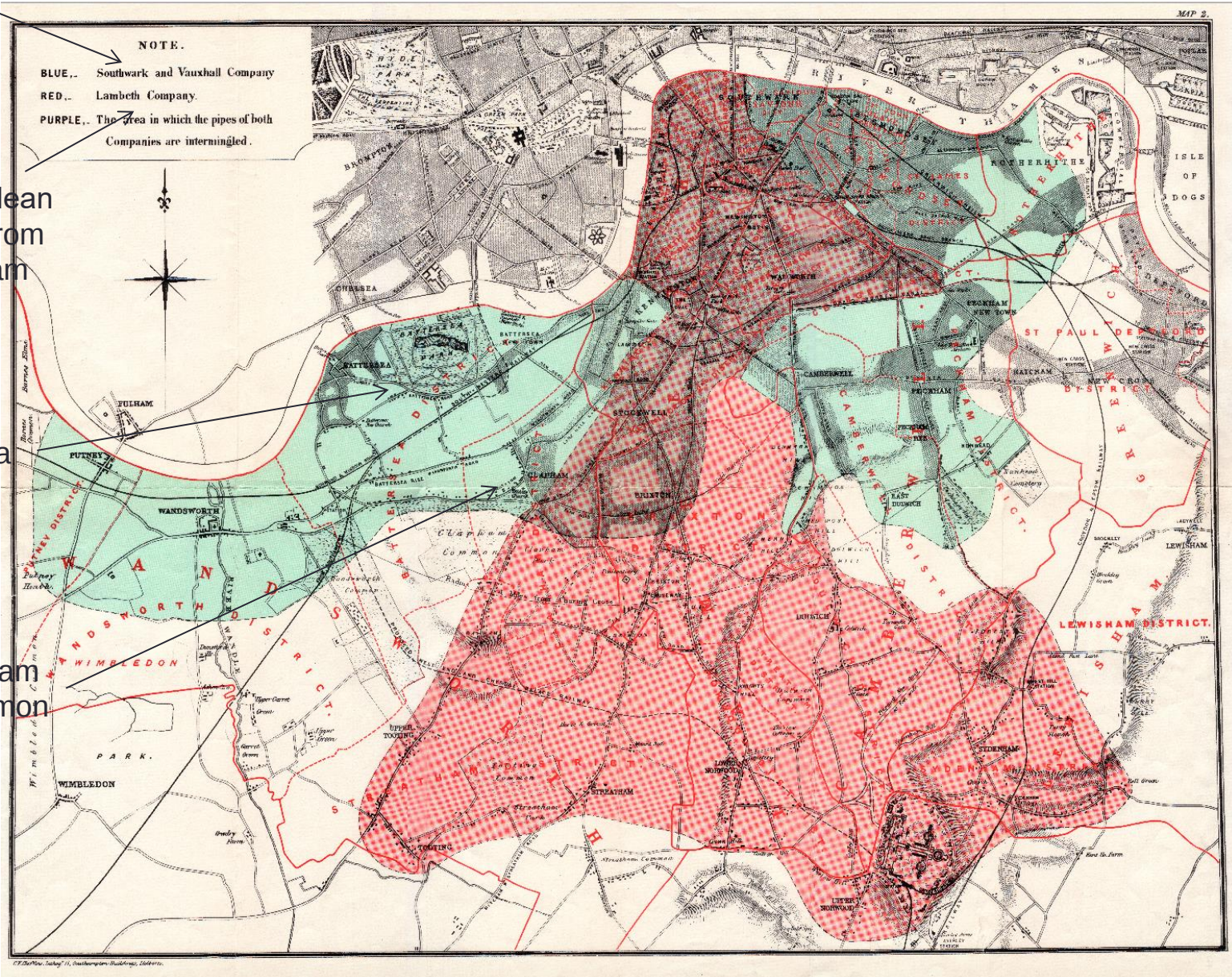
Cholera, London 1850s

Uses “dirty water” from downstream

Uses “clean water” from upstream

Battersea Park

Clapham Common



4. Creating a valid counterfactual

So many identification strategies on one map!

1. In the brownish area at the overlap: The pipes in the area were so intermingled that Snow had a near random sampling of neighbours, *virtually identical in every way except for their source of water*.
2. Near the border between the red and green areas: regression discontinuities.
3. Why limit the sample to the smaller areas? Why not compare all the red area to all the green area?
Not very convincing.
4. But we might be able to create a matched sample (e.g., PSM)
We will usually have to work hard to convince reviewers that matching on observables will create a valid counterfactual.

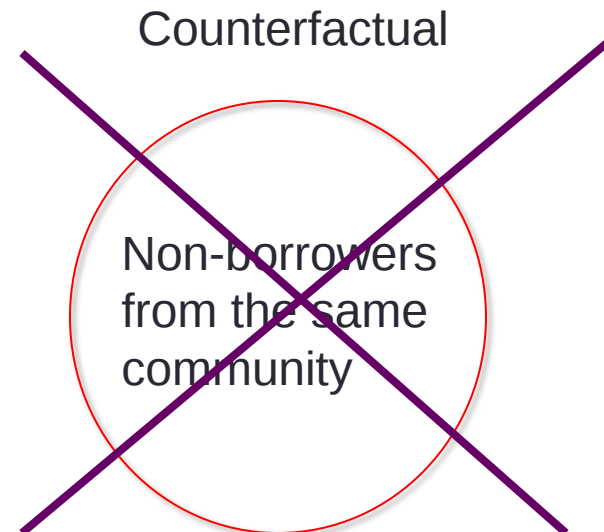
An example: Learning about micro-credit

- The Grameen model of microfinance is now 40 years old.
- The effectiveness of microfinance has been tested in many different ways.
 - Different ways of creating a counterfactual



An example: Learning about micro-credit

- The Grameen model of microfinance is now 40 years old.
- The effectiveness of microfinance has been tested in many different ways.
 - Borrowers are different from non-borrowers, both in ways we can measure and ways we cannot



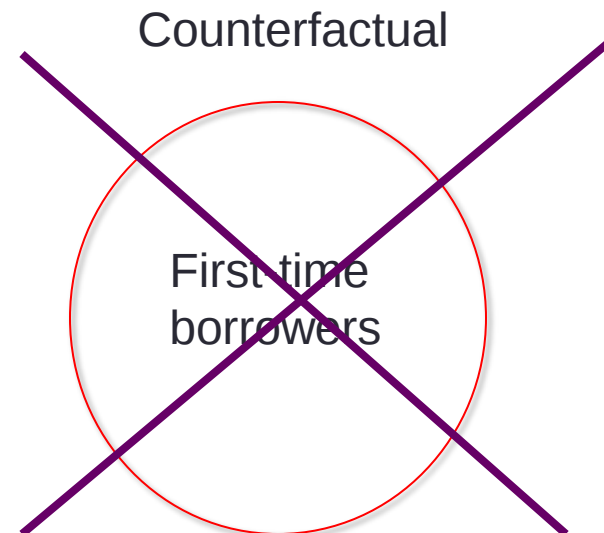
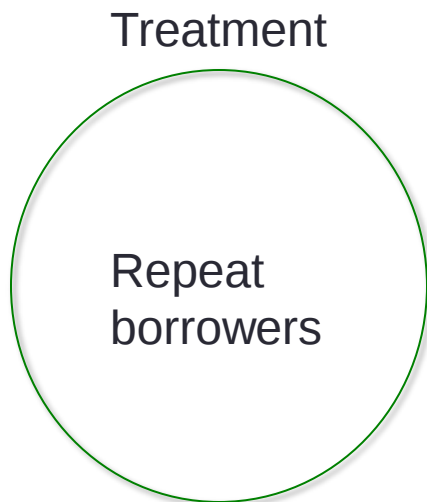
An example: Learning about micro-credit

- A different approach: Compare last year's first-time borrowers with this year's first-time borrowers.
 - This was USAID's standard evaluation method at one time.



An example: Learning about micro-credit

- A problem is dropouts: Only about 60 percent of borrowers choose to borrow a second time.
 - Even if we can find those other 40 percent, we might wonder why some applied this year but not last.

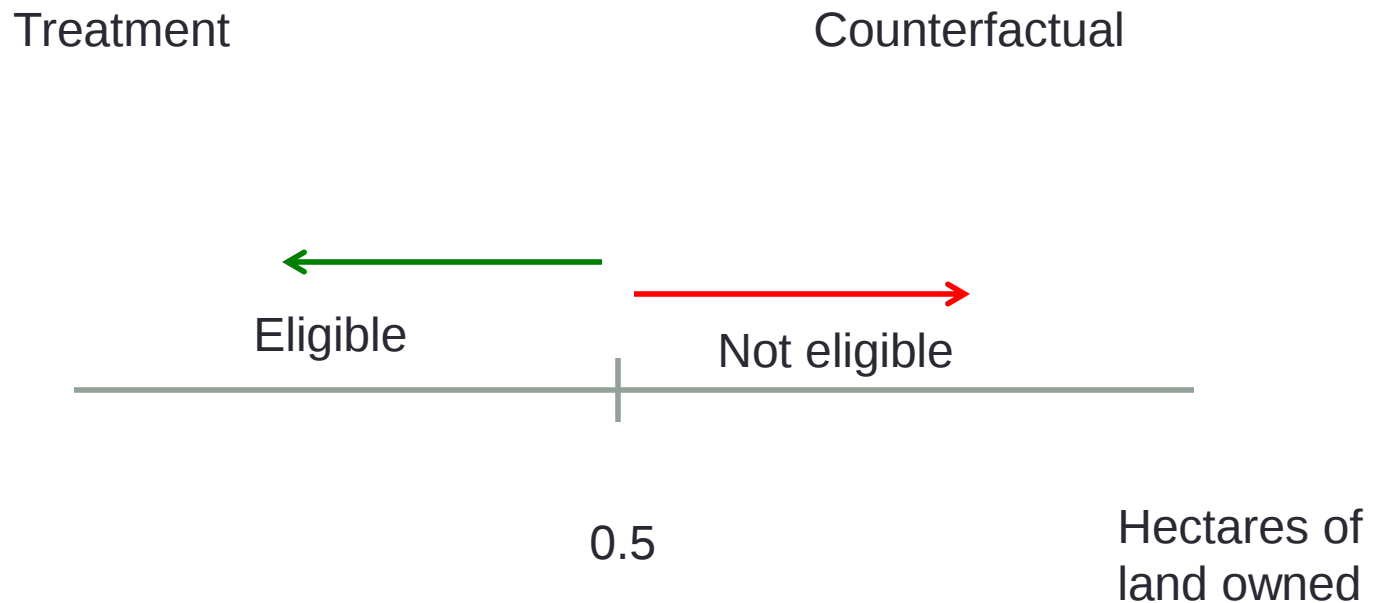


5. Sometimes a lot of data is not enough

- The initial attempts at measuring the impact of microfinance were very clever, but in the end, not very convincing.
- We will never be able to measure all of the reasons that one person asks for a loan and another does not.
- What we need here is the *right data*, not more data.
- A good question to ask yourself: What is the perfect experiment to answer my question?
 - Often you won't be able to conduct the perfect experiment but the question will help you think through the threats to identification.

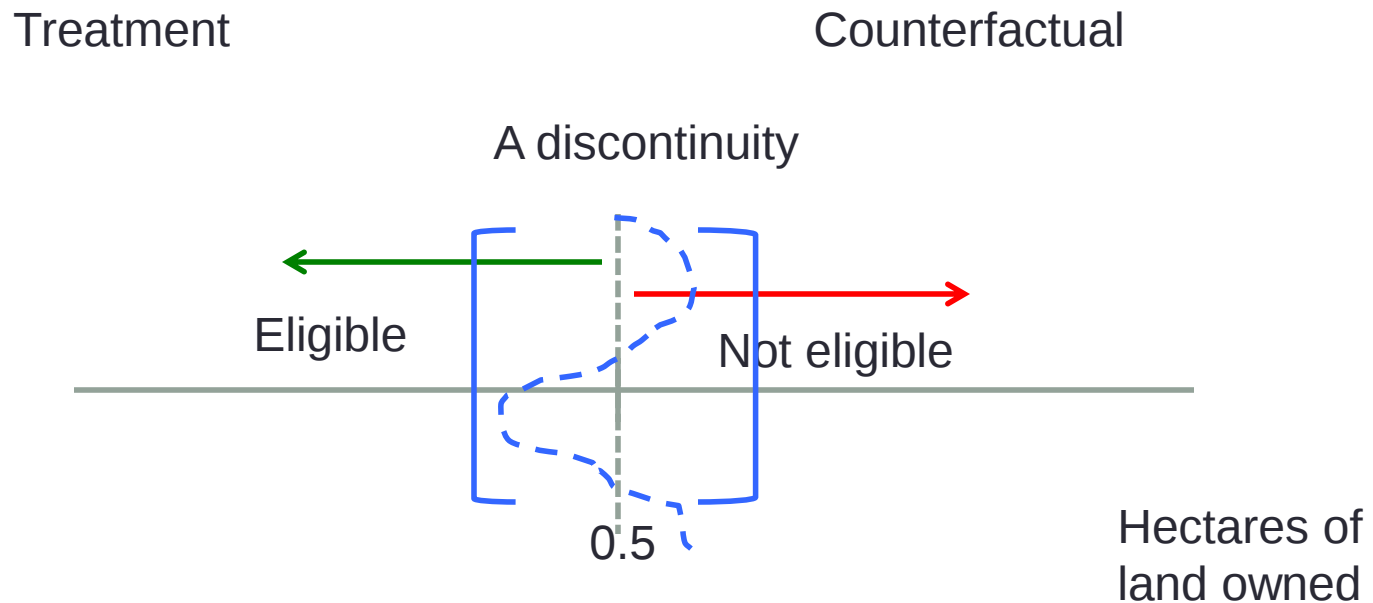
Learning about micro-credit: The right data?

- The Grameen model of microfinance is now 40 years old.
- The effectiveness of microfinance has been tested in many different ways.
 - Different ways of creating a counterfactual



Learning about micro-credit: The right data?

- The Grameen model of microfinance is now 40 years old.
- The effectiveness of microfinance has been tested in many different ways.
 - Different ways of creating a counterfactual



Learning about micro-credit: the right data?

- More recently, several randomized control trials created counterfactuals by randomly allocating potential clients to receive micro-credit.
 - This was the right data, at least for the question of the value of microfinance at the margin...

5 tips for better proposals

Tips for better proposals

1. Research is incremental: Focus your question and show us how you will advance the existing literature
2. Do the desk research before you write the proposal!
3. Pose a question your data will answer
4. If you want to make causal / policy claims, focus on a counterfactual
5. Sometimes a lot of data is not enough. Ask yourself: “What is the perfect experiment?”