



# Randomized evaluations in development economics

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# What are impact evaluations?

- Evaluations that tell you whether a particular intervention has an impact on the particular outcomes it is supposed to affect.
  - Does giving children textbooks raise test scores?
- As against a process evaluations which tell you whether the intervention was actually implemented the way it was supposed to
  - Did the textbooks arrive? Were they given to the children? Did anyone read them?

# Why do evaluations?

- How else would we know if something works?
  - With toothpaste there is a market test. If people do not like the flavor it will not sell and the company that makes it will go bankrupt
  - With social policy interventions there is no such test because
    - No choice (only one system of public schools)
    - Governments often need to deliver unwanted things

# What are randomized evaluations?

- Randomized evaluations are the social science equivalent of medical trials
- The basic idea is that you are trying to assess the efficacy of a particular intervention.
- We randomly choose units to receive the intervention
- We then compare the outcomes from the units that received the intervention (treatment) with those that did not (control) to estimate the “treatment” effect.

# Why go through all that trouble?

- The traditional answer:
  - How else will you do an impact evaluation?
  - Compare units that have the intervention with units that do not
    - Why do we believe that they would have had the same outcome absent the intervention?
  - Compare units before and after it got the intervention
    - How do we know whether it would stayed unchanged absent the intervention?
- Randomized evaluations solve this problem by randomly choosing the comparison group

# The beauty of randomized trials

- They are not only reliable, they are simple
- No fancy statistics are required to interpret the results
- Therefore it is relatively hard to simply refuse to engage with the results
  - Makes them politically very powerful
  - The Progresas story

# Is randomization practical?

- Where it works best is to work with a new program or a program that is expanding: it will take a long time before it reaches the whole target population
- Therefore we can simply randomize the order in which it reaches different parts of the target population
- This is usually also the ethical solution.
- It is also the best time to do the evaluation because we can still stop it before it goes to

# Looking back

- This was how we saw randomized trials till about six years ago
- And if it had been just this randomized trials would have been a useful tool but no more
- But the last half dozen years have entirely changed our understanding of what these trials are good for

# In recent years

- Randomized trials have changed the way we do economics by
  1. Encouraging innovations in measurement
  2. Allowing a different set of questions to be asked.
  3. Refining our questions
  4. Challenging our theories

# Innovation in measurement

- One advantage of randomized trials is that we know pretty well who got treated
- As against knowing that this change in policy caused some schools in this area to get extra textbooks but not knowing which ones: characteristic of traditional policy research
- Therefore it is possible to focus data collection on a relatively small group of people
- You can therefore be innovative in the data you collect.

# Post-Conflict Reconciliation in Sierra Leone

- **In post-conflict Sierra Leone, a lot of money is going into helping people in local communities learn to live together.**
- **Through dialogues, joint projects, etc.**
- **Do these things work?**
- **Two lab-members are starting a randomized evaluation?**

# Post-Conflict Reconciliation in Sierra Leone

- **How do you measure reconciliation?**
- **You ask questions about attitudes but you worry that you get canned answers.**
- **Another strategy they are considering is to actually give them something useful (ostensibly independently of the reconciliation efforts) that is meant to be shared**
- **A cassava grater (no one needs one all the time)**
- **Then observe who they share with.**
- **Measurement demands creativity, but most things can be measured**

# Allowing us to ask different questions

- Another advantage of randomized trials is that we control the treatment
- As against when the treatment we are interested in is a part of broader policy change
  - not just textbooks but also teacher training
- As a result we can try out ideas that are unlikely to work
  - If they work we have an important innovation

# Everyone loves immunization

- Except the people?
- In rural Udaipur district immunization rates are around 4%.
- Two theories:
  - The government immunization system has collapsed
  - People do not want to be immunized
- In one experiment, the NGO made a commitment to deliver immunization on a fixed date every month through immunization camp.
- In the other, in addition, the NGO offered a kilo of dried beans to every mother who got her child immunized at the camp.

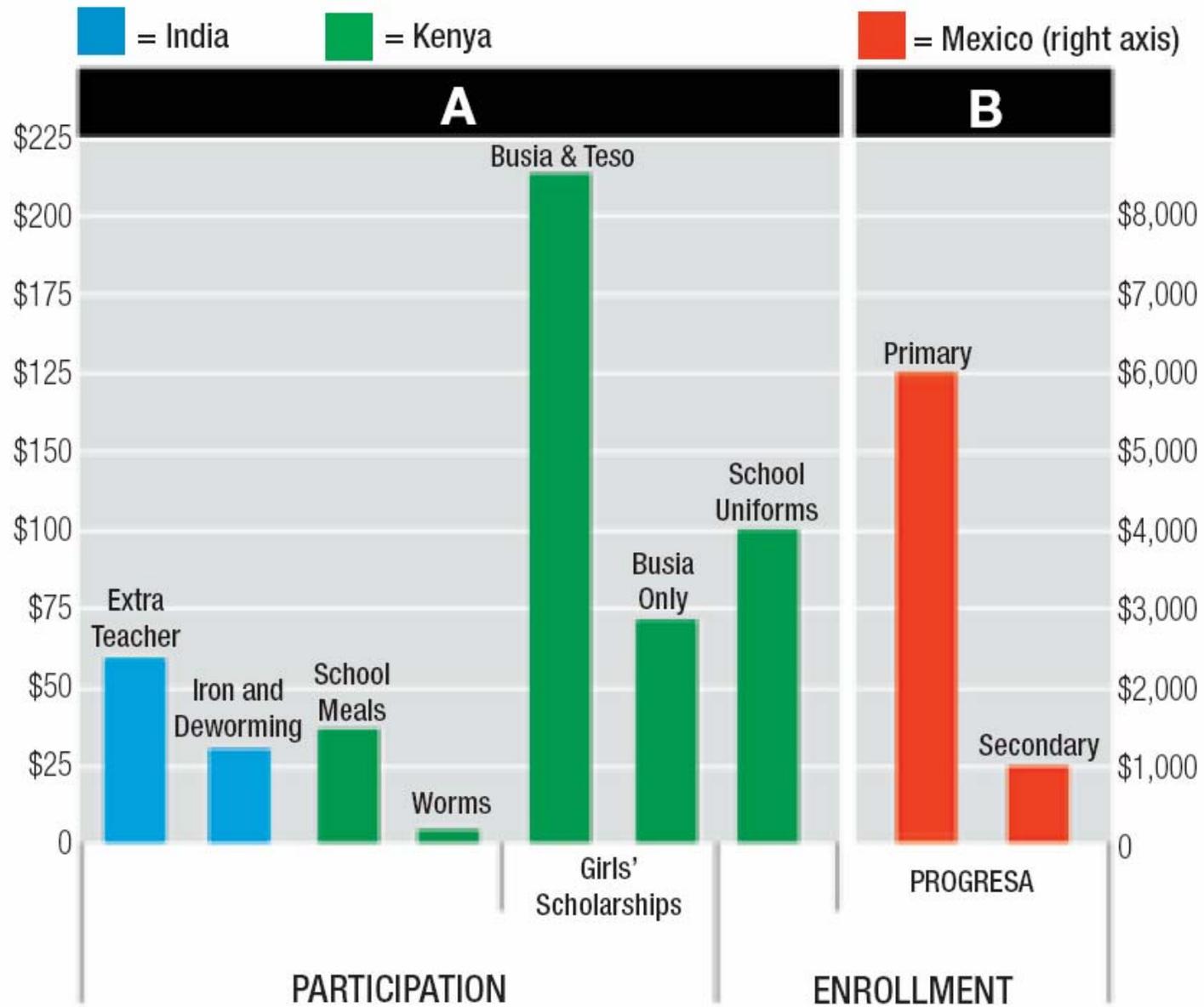
# Results

- The camps got the immunization rate from 4% to 15%
- The beans took them from 15% to 45% (or more)
- No one expected the magnitude of the response
- We would not have tried it had it not been for the fact that an experimental setting makes it easy to try additional treatments

# Refining the question

- What allows us to be innovative also allows us to be nit-picky
- If textbooks plus teacher training appear to work, we can ask which of them actually does the job
- If it is teacher training, we can ask what kind of training
- Do such details matter?
  - Or are most standard options equally useful to invest in?

# Cost Per Extra Year of Education Induced



# Challenging our theories

- One great advantage of experiments is that the validity of our treatment control comparison does not rely any theory
- Therefore it can be used to challenge even the most fundamental of our theories.

# Fertile thinking about Fertilizer

- Duflo, Kremer and Robinson (DKR, 2006) do this exactly this
- They start with an experiment showing that in Western Kenya fertilizers are very profitable. Also very divisible: anyone can use them.
- But only about a quarter of the population uses it: Ignorance?
- Information about these results does not help much.
- Even those who participated in the very successful demonstration experiment do not use it. Say that they do not have money: Problems with saving?
- DKR offered them a deal: if you buy fertilizer at harvest time, we will deliver it at sowing time
- Very popular. But they want delivery right away. And seem to have no trouble holding it: what is going on here?

# A wonderful learning tool