Randomization in Practice

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Quick Summary: What is Randomization?

Finding Opportunities to Randomize

Decide on Unit of Randomization

Learn more with multiple treatment arms

Should you conduct a randomized evaluation?
1. Did the Millennium Villages Succeed in Decreasing Child Mortality?

“In the African Millennium Villages, the mortality rate among children under the age of five dropped by 22% ... over a period of three years. “

But Mortality rates fell across Africa over the same period
2. Is going to the hospital bad for your health?

<table>
<thead>
<tr>
<th>Self-reported Health Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recently Visited Hospital</td>
</tr>
<tr>
<td>Did not recently visit hospital</td>
</tr>
</tbody>
</table>

Source: Angirst and Pischke (2004)
Problem: Selection Bias

WHAT IF THOSE WHO CHOSE NOT TO ENROL ARE DIFFERENT?
Randomization: Creates similar groups

With large sample, two groups have **SIMILAR** characteristics **ON AVERAGE**

**TREATMENT GROUP**

**COMPARISON GROUP**
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Should you conduct a randomized evaluation?
Opportunities to Randomize when Resources are Limited

I.e. Always
Finding Opportunities to Randomize
Lottery when Oversubscription

More are eligible than can be served by the program
Youth Group Support Uganda

535 groups apply
Grants available to 265
Discussion

• Who is your target group?
• How many are eligible?
• How many can you reach?
Targeted Lottery

Exclude some from the lottery

Include others
Targeted Lottery

Randomize the rest of the eligible population
Randomly vary *when* to receive program
Randomly vary when to receive the program: Preschools in Cambodia
Discussion

Are you planning on expanding to a new area / to new people?
Randomly vary program strength
Discussion

Which challenges does your organization face in conducting an Impact Evaluation?
Summary: opportunities to randomize

Consider

1. **Targeting rules**: Who is eligible for the program? Is program participation restricted, widely open, some combination?

2. **Resources**: Sufficient program resources to reach all eligible beneficiaries?

3. **Timing**: How are potential beneficiaries enrolled in the program – all at once or in phases over time?
Summary: Most possible when...

- Starting a new program
- Provides a new service on an existing program,
- Branches out to service new areas and new people.
Summary: Design your Impact Evaluation in *Conjunction* with your program

Design your Impact Evaluation in *Conjunction* with your program
Lecture Plan

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Should you conduct a randomized evaluation?
Which level of randomization?

**INDIVIDUAL unit:**
- e.g. pupil, mother, father, household

**CLUSTER unit:**
- e.g. class, health clinic, village
Which level of randomization?

Individual or Cluster?
Which level of randomization?

Individual
Which level of randomization?

Cluster (group)
Randomization at higher level often more ethical and fair

Everybody in the same village/community/school have an opportunity to receive the program

For example, treatment of malnutrition
Lecture Plan

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Should you conduct a randomized evaluation?
Learn More with Multiple Treatment Arms
Medical Supply Chain in Zambia

- 16 Districts: Commodity Planner
- 16 Districts: facilities order directly from government
- 16 Districts: business as usual
Supply of Malaria Medicine

<table>
<thead>
<tr>
<th>CONTROL</th>
<th>COMMODITY PLANNER</th>
<th>DIRECT PURCHASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>52%</td>
<td>78%</td>
<td>94%</td>
</tr>
</tbody>
</table>
Discussion

Do you have difficult choices to make between different programs?
Lecture Plan

- Quick Summary: What is Randomization?
- Finding Opportunities to Randomize
- Decide on Unit of Randomization
- Learn more with multiple treatment arms
- Should you conduct a randomized evaluation?
Does this need a Randomized Evaluation?

Maximize learning

Consider

1. Are we learning something we didn’t already know?
2. Is it policy relevant?
   a) Is this a program that an NGO or government could scale up and/or expand if it is successful?
   b) Is it strategically relevant for reducing poverty?
3. Is the program ready for an impact evaluation?
   a) Good M&E first.
Discussion – Should you conduct IE?
Now is your chance to integrate an impact evaluation in your own program.
Thank you!