

Measurement and Accessing Existing Data

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Measurement: Overview

- ▶ Before programs begin, need to think very hard about constructing measures of outcomes that treatments are likely to affect.
- ▶ Many programs could potentially affect multiple dimensions, and care must be taken to choose the relevant indicators.
- ▶ Often programs have big, long-term goals. Difficult to measure directly.
- ▶ Shorter-term, more immediate outcomes are good to examine.

Measurement: Politician Report Cards

- ▶ Think about the information delivery treatment. What's the ultimate goal of the project?
- ▶ **Ultimate Goals:** Better governance, better politician performance, better citizenship.
- ▶ **Intermediate Steps / Initial Outcomes:** Better knowledge about politicians.

Measurement: Politician Report Cards

- ▶ What survey questions would you ask?
- ▶ **Initial Outcomes:**
 - ▶ Voter knowledge of politician characteristics / performance.
 - ▶ Politician performance.
- ▶ **Long-term Outcomes:**
 - ▶ Voting turnout in the next election
 - ▶ Re-election rates.
 - ▶ Politician performance.
 - ▶ Better public goods outcomes for treated areas. (after next election)

Measurement: Job Training Example

- ▶ Think about a worker training program, to improve technical skills.
- ▶ Computer training: learning to type and use Word and Excel.
- ▶ What are the short-term and long-term outcomes over which we'd expect to find effects?

Measurement: Job Training Example

- ▶ What's the ultimate goal of the project?
- ▶ **Ultimate Goals:** Having a job, or better jobs. Job satisfaction. Better wages.
- ▶ **Intermediate Steps / Initial Outcomes:** Better technical expertise.

Measurement: Job Training Example

- ▶ What survey questions would you ask?
- ▶ **Initial Outcomes:**
 - ▶ Tests that are designed to measure competency in skills.
 - ▶ Initial steps to obtain employment.
- ▶ **Long-term Outcomes:**
 - ▶ Voting turnout in the next election
 - ▶ Re-election rates.
 - ▶ Politician performance.
 - ▶ Better public goods outcomes for treated areas. (after next election)

Surveys: Implementation

- ▶ Now that we've talked about different types of outcomes, how do we measure them?
- ▶ Even more important: when do we measure outcomes?
- ▶ **Baseline Surveys:** collection of data on all the relevant characteristics of subjects that we think might either affect how treatment works or might affect the outcomes we're interested in.
- ▶ **Followup Surveys:** Often, the same set of variables as baseline. Look for changes in outcomes.

Measurement: Job Training Baseline

- ▶ We have 1000 people who are eligible for job training.
- ▶ Randomly assign $1/2$ of them to a job training program.
- ▶ What variables do we collect in our baseline survey?
- ▶ Important point: collect *the same* data for both treated and control groups.

Measurement: Job Training Post-Intervention

- ▶ The two-week program finished. Want a quick survey to see if outcomes changed.
- ▶ What variables do we collect in our post-intervention survey?
- ▶ Quick survey: probably only measure skills.
- ▶ Should we survey both treatment and control groups?

Measurement: Job Training Follow-up

- ▶ 6-months to 10 years after the program. Want to know if the benefits are long-lasting.
- ▶ What variables do we collect in our follow-up survey?

Existing Data Sources: Why do we care?

1. Useful for identifying the population of interest.
2. Source of knowledge about population baseline characteristics.
3. When we randomize, we pick from some sample (or stratify on certain characteristics).
4. Context for grant writing and evaluation writeups.
5. Using existing data is cheaper than creating your own.

Census Data

- ▶ Every 10 years, demographic characteristics
- ▶ Age / gender
- ▶ Locations
- ▶ Ethnicities
- ▶ Religion
- ▶ Migrant populations

Demographic and Health Surveys

- ▶ BMI
- ▶ Height for weight z-scores
- ▶ Recent illnesses
- ▶ HIV / sexual activity
- ▶ Contraceptive use
- ▶ Fertility / infant mortality

Firm Surveys

Example: Indonesia's Statistik Industri (SI)

- ▶ Designed as a complete enumeration of all manufacturing establishments with more than 20 employees.
- ▶ Annual data, 1985-present. Identifiers enable tracking of establishments over time.
- ▶ A number of rich variables:
 - ▶ Book and estimated land values
 - ▶ Cost of capital (buildings, machines, vehicles)
 - ▶ Number of employees, total wage bill
 - ▶ Percentage of production exported

Worker Surveys

Example: Indonesia's SAKERNAS

- ▶ Basic demographic characteristics (age, sex, gender)
- ▶ Highest level of education completed
- ▶ Type of employment (industry)
- ▶ Working? Unemployed?
- ▶ Average wages

Geography

- ▶ Most statistical agencies will have maps of administrative boundaries.
- ▶ Programs that can be randomized across villages or districts
⇒ good idea to make use of these maps.
- ▶ Useful in impact evaluations to have maps of treatment and control areas, to show visually that areas were randomly selected for treatment.

Villages (Desa) of Sumatra



► 24,405 desa