ABDUL LATIF JAMEEL
Poverty Action Lab

TRANSLATING RESEARCH INTO ACTION

Measurement

Jennifer Peck

Swarthmore College

Course Overview

1. What is Evaluation?
2. **Outcomes, Impact, and Indicators**
3. Why Randomize?
4. How to Randomize?
5. Project from Start to Finish
6. Generalizability

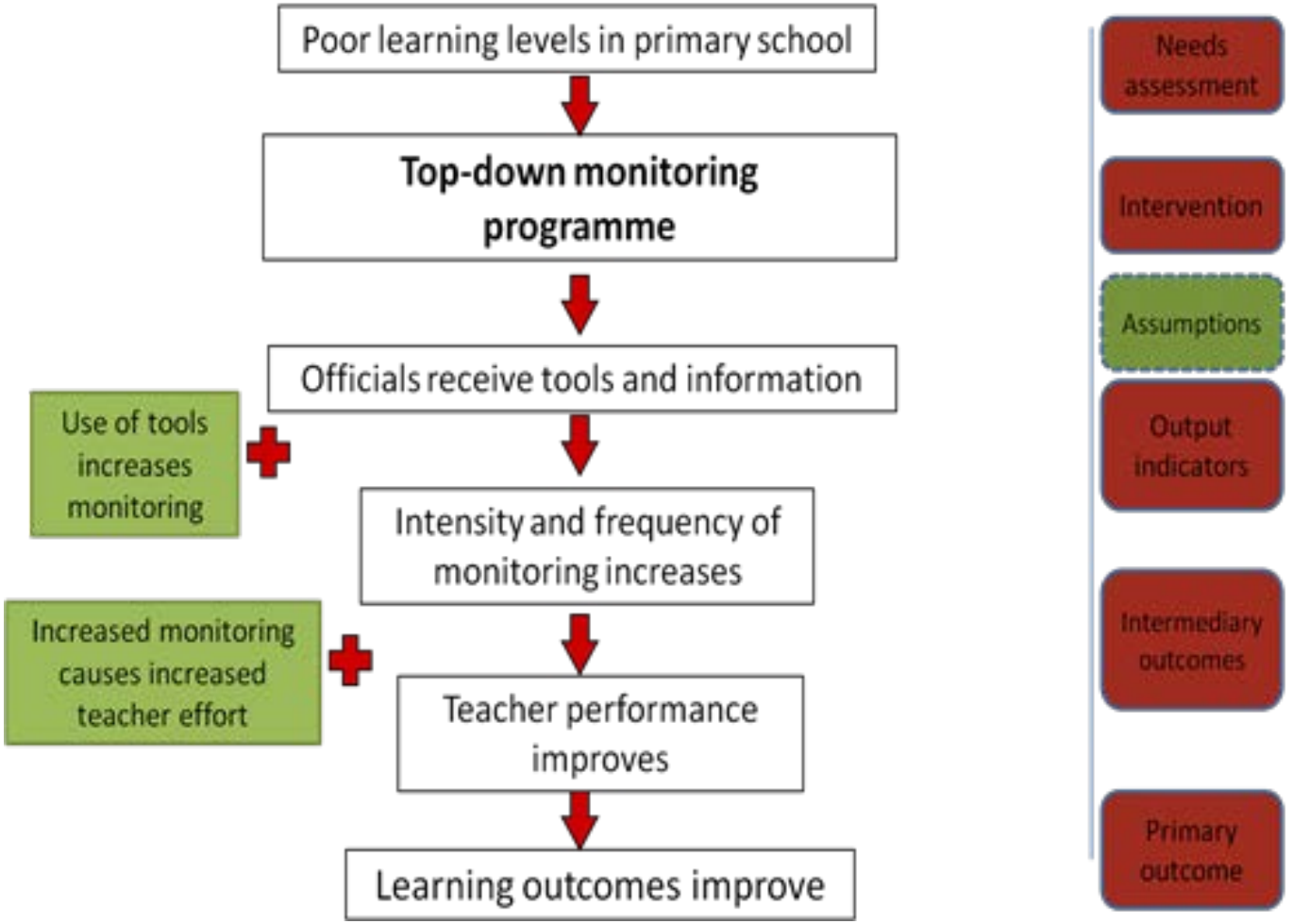
Lecture Overview

1. What to Measure
   - Theory of Change, Outcomes, Indicators
     - Women as Policymakers Case Study
2. How to Measure It (Well)
   - Indicators: validity and reliability
   - Hard-to-measure outcomes
   - Sources of Data
   - Collecting Data

Reforming School
Monitoring

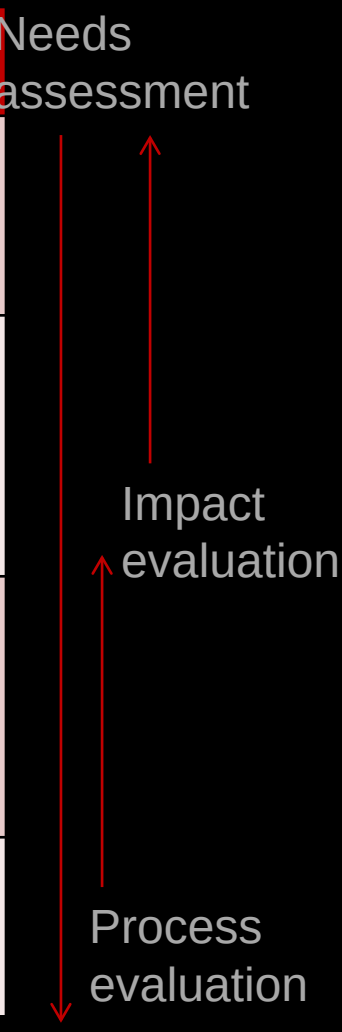
CASE STUDY

Theory of Change: Top-down Monitoring

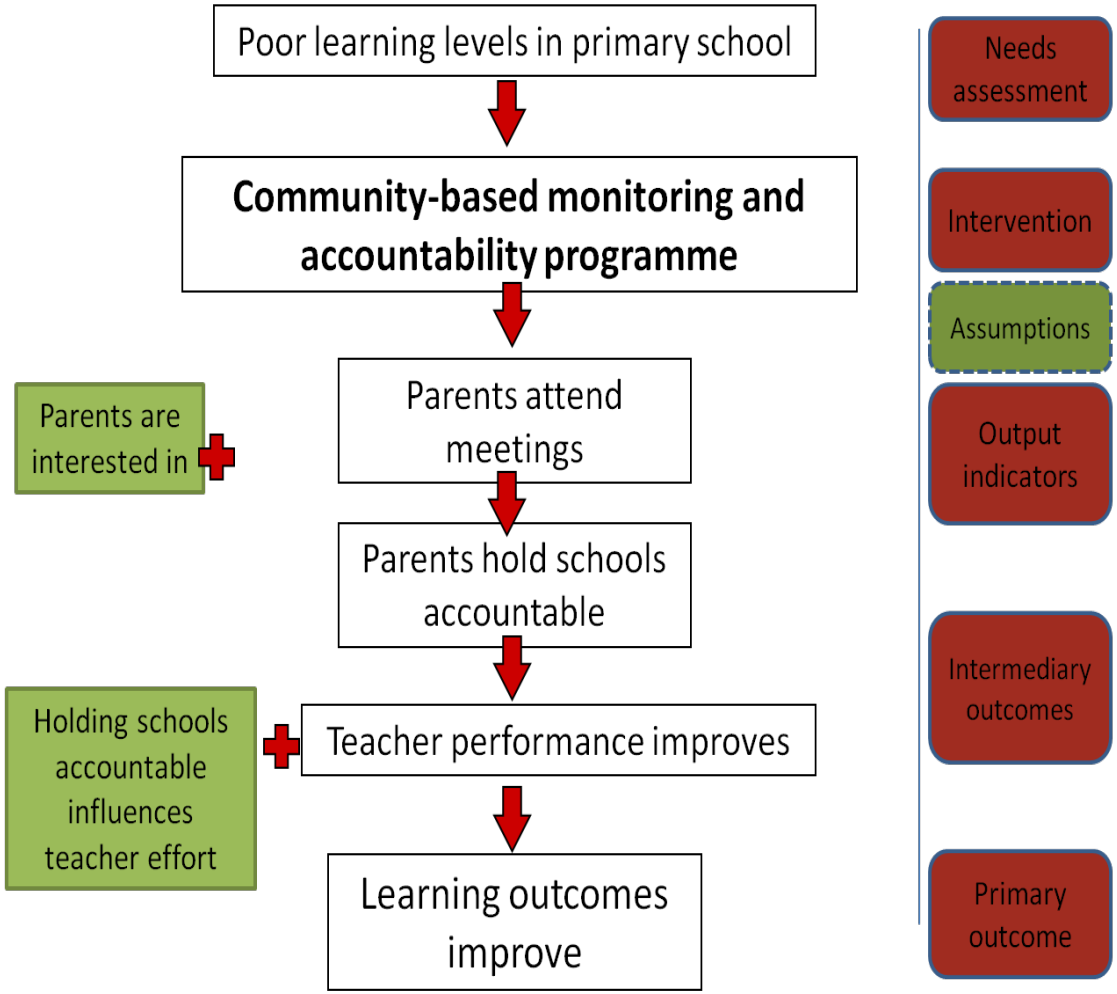


Log Frame: Top-down Monitoring

	Objectives Hierarchy	Indicators	Sources of Verification	Assumptions / Threats
Impact (Goal/ Overall objective)	Learning outcomes improve	Student attendance, Test scores	Surveys, Testing	Poor teacher performance is primary cause of poor learning outcomes
Outcome (Project Objective)	Teacher performance improves	Attendance, Lesson plans, Frequency & quality of evaluations	Survey, Admin data, spot checks, testing	Teacher effort is dependent on monitoring
Outputs	Intensity & frequency of monitoring increases	No. of visits to schools, allocation of time and budget	Surveys, admin data, spot checks	Use of tools increases monitoring
Inputs (Activities)	Officials receive tools & information	Self-reported receipt & usage rates	Surveys	Sufficient materials, funding, manpower



Theory of Change: Community-based Monitoring



Log Frame: Community-based monitoring

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Outcome (Project Objective)	Teacher performance improves	Attendance, Lesson plans, Frequency & quality of evaluations	Survey, Admin data, spot checks, testing	Teacher effort is dependent on parent accountability
Outputs	Parents holds teacher accountable	Participation of parents, Interaction between parents & teachers	Surveys	Parents care about their children's education
Inputs (Activities)	Meetings happen, Parents attend meetings	No. of meetings, attendance	Surveys, observations	Sufficient funding, manpower

Use in analysis

INDICATORS

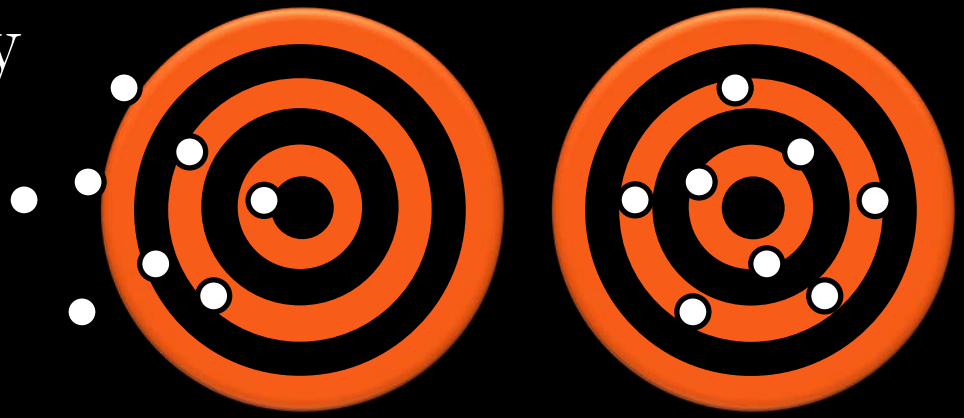
CENSUS EXAMPLE

The Basics

- Lesson: don't be complacent even about "easy" data
  - e.g. Age, # of rooms in house, # in hh
- What is the survey question identifying?
  - E.g. Are hh members people who are related to the household head? People who eat in the household? People who sleep in the household? **Bobcats?**

The main challenge in measurement

- Accuracy



- Precision

The main challenge in measurement

- Validity

- Reliability

Validity

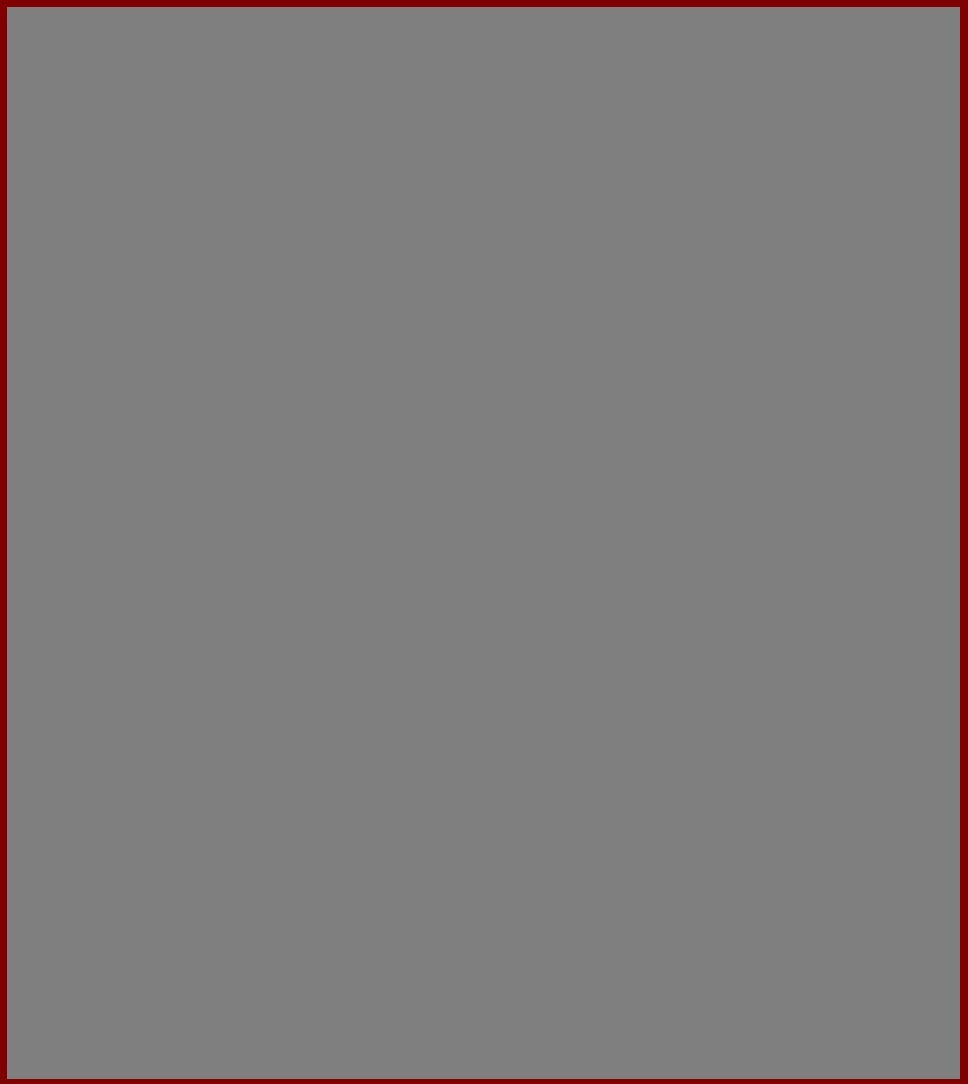
- In theory:
  - How well does the indicator map to the outcome? (e.g. IQ tests → intelligence)
- In practice: are you getting unbiased answers?
  - Social desirability bias
  - Framing effect
  - Recall bias
  - Anchoring bias

Reliability

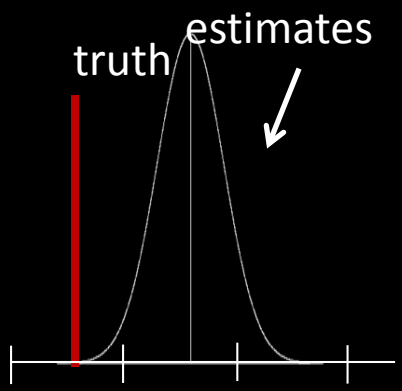
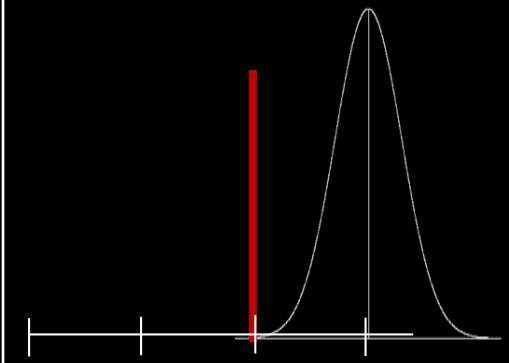
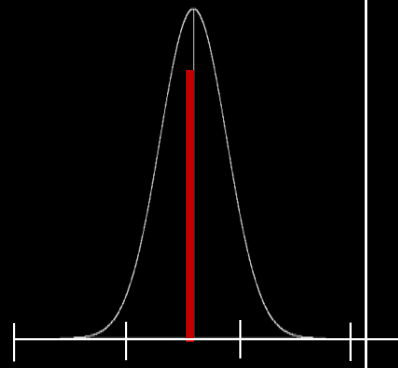
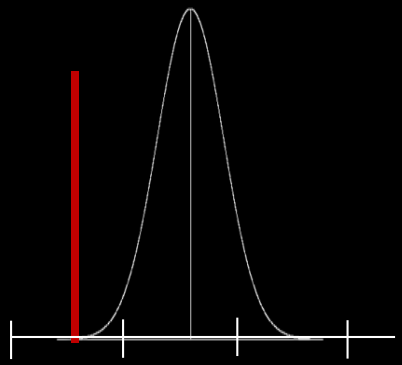
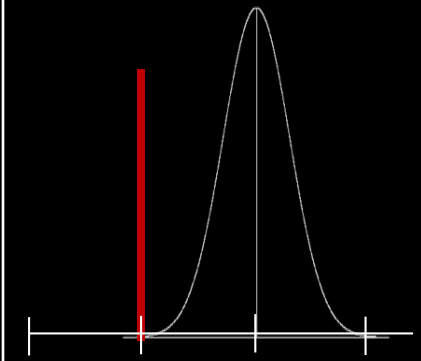
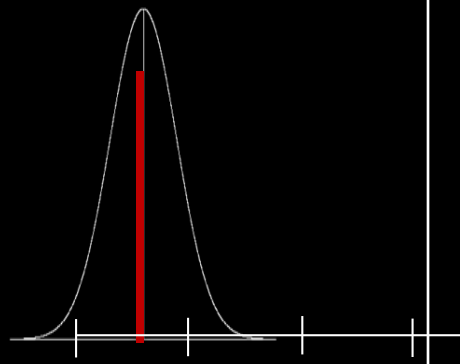
- In theory:
  - The measure is consistent and precise vs. "noisy"
- In practice: many things can reduce reliability
  - Length, fatigue
  - "How much did you spend on broccoli yesterday?" (as a measure of annual broccoli spending)
  - Ambiguous wording (definitions, relationships, recall period)
  - Answer choice (open/closed, Likert, ranked)

Which is worse?

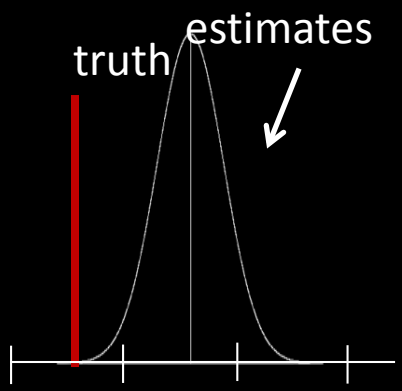
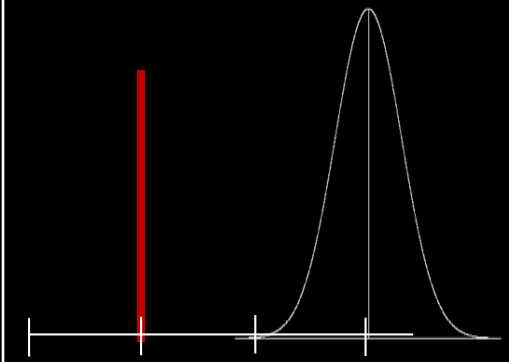
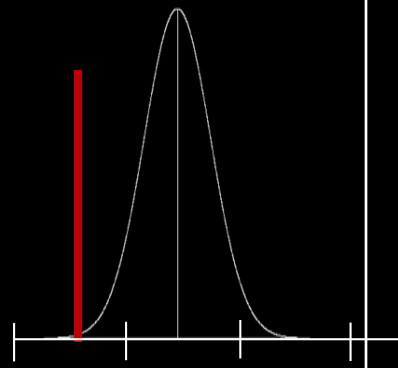
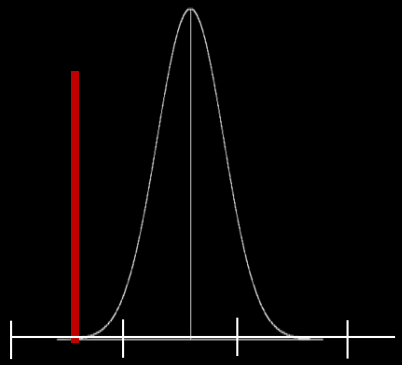
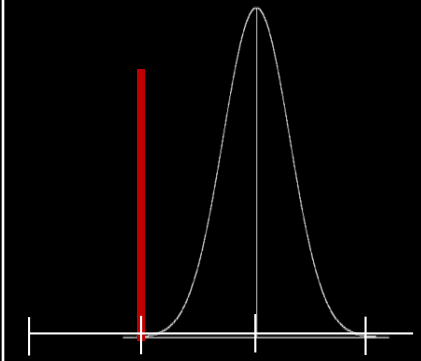
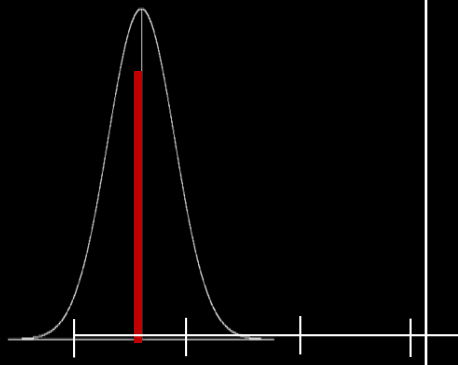
A. Poor Validity
B. Poor Reliability
C. Equally bad
D. Depends
E. Don't know/can't say



“Consistently Biased”

	Baseline	Endline	Difference
Treatment			
Control			

Bias is correlated with treatment

	Baseline	Endline	Difference
Treatment			
Control			

Things to Think About

- Question wording, definitions, recall period
- Answer choice
  - Open/closed, single v. multiple options, units
- Surveyor training/quality
- Data entry
- Length, fatigue
- Translation
  - Back-translate and pretest in local languages

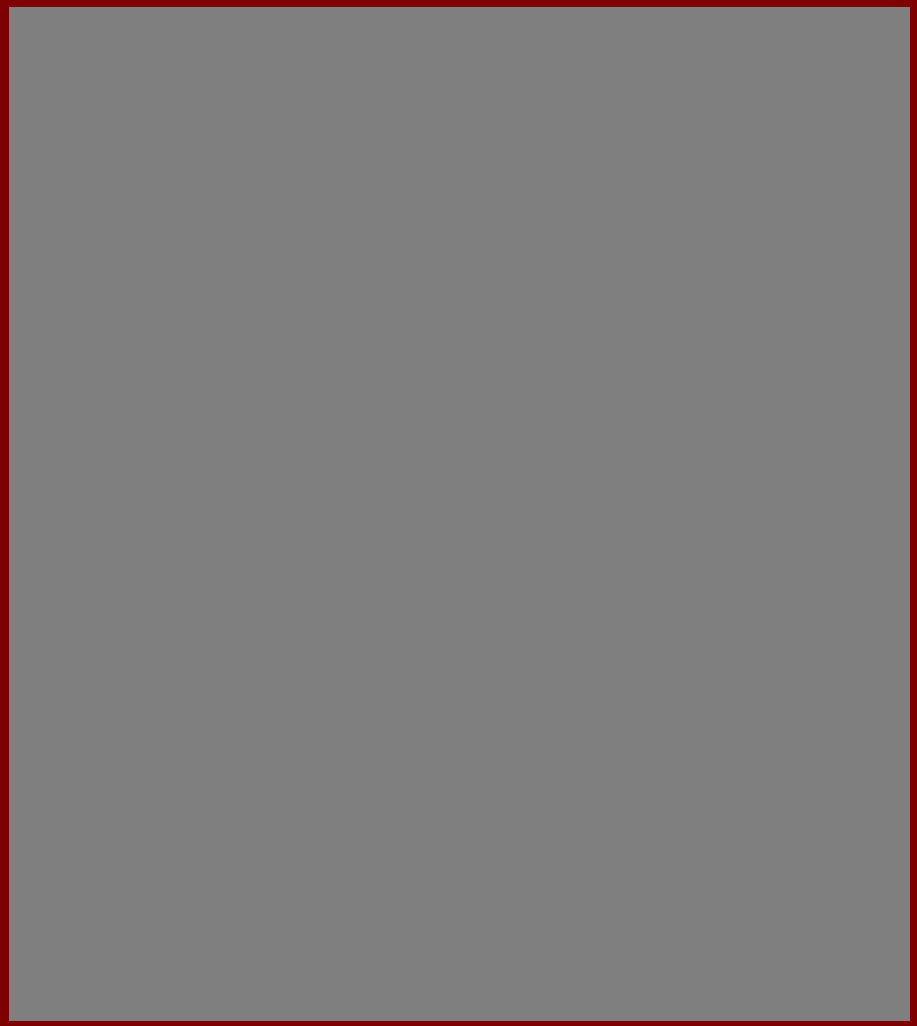
The problem

- With the following questions…

Outcome: annual consumption

Indicator: food expenditure in last week

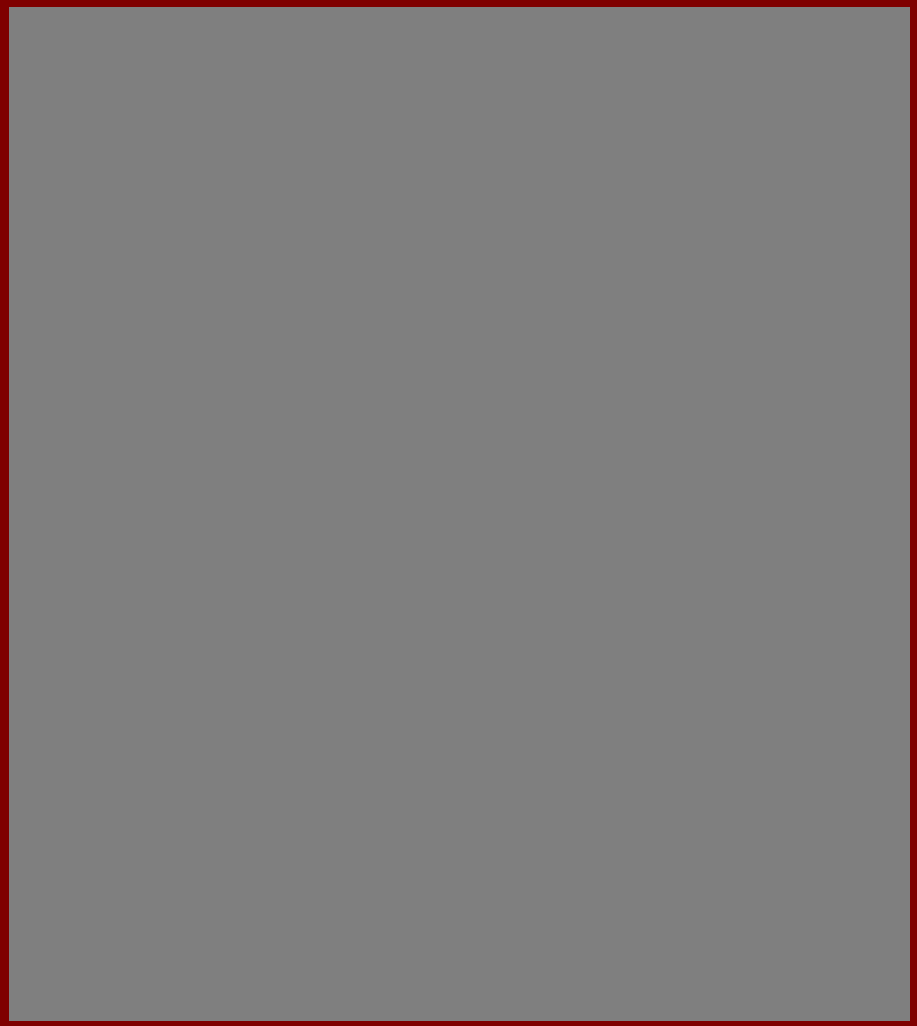
A. Validity
B. Reliability
C. Both
D. Neither



Outcome: annual consumption

Indicator: food expenditure in last three months

A. Validity
B. Reliability
C. Both
D. Neither



HARD-TO-MEASURE INDICATORS

What is hard to measure?

(1) Things people do not know very well

(2) Things people do not want to talk about

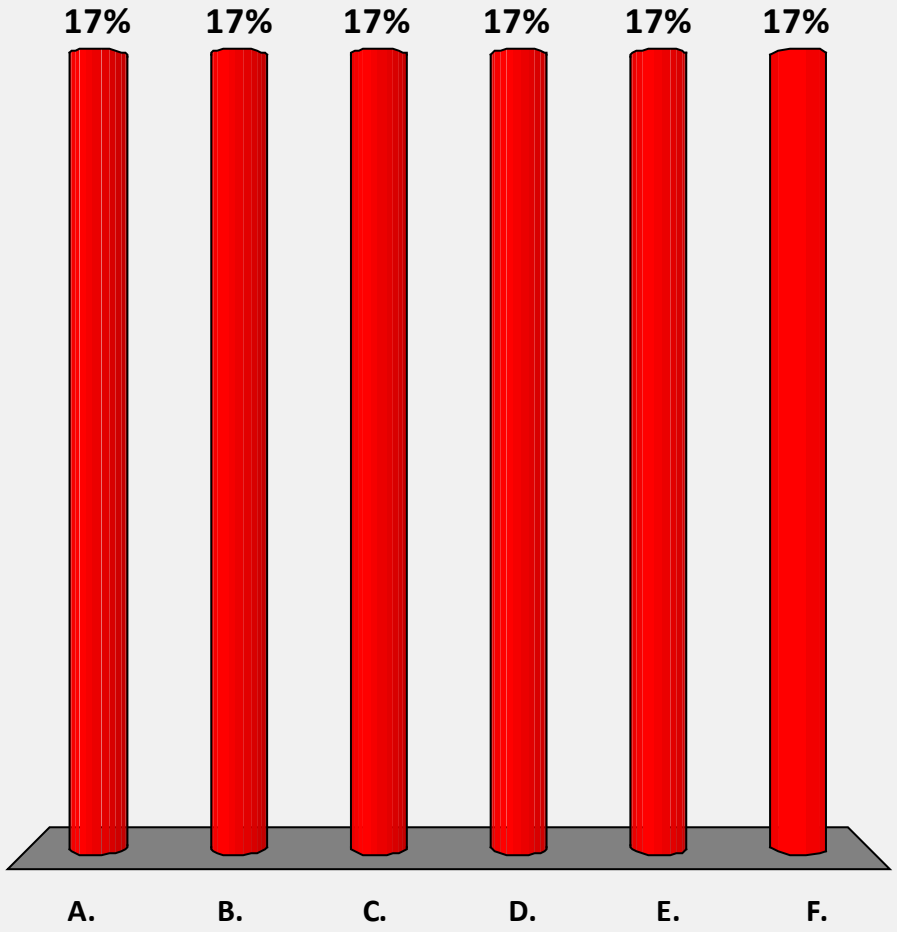
(3) Abstract concepts

(4) Things that are not (always) directly observable

(5) Things that are best directly observed

How much money did you spend on coffee in the past two weeks?

- < $5
- $6-$10
- $11-15
- $16-$20
- >$21



1. Things people do not know very well

What: Anything to estimate, particularly across time. Prone to recall error and poor estimation

- **Examples:** distance to health center, profit, consumption, income, plot size

Strategies:

- Consistency checks – How much did you spend in the last week on x? How much did you spend in the last 4 weeks on x?
- Multiple measurements of same indicator – How many minutes does it take to walk to the health center? How many kilometers away is the health center?

2. Things people don't want to talk about

What: Anything socially "risky" or something painful

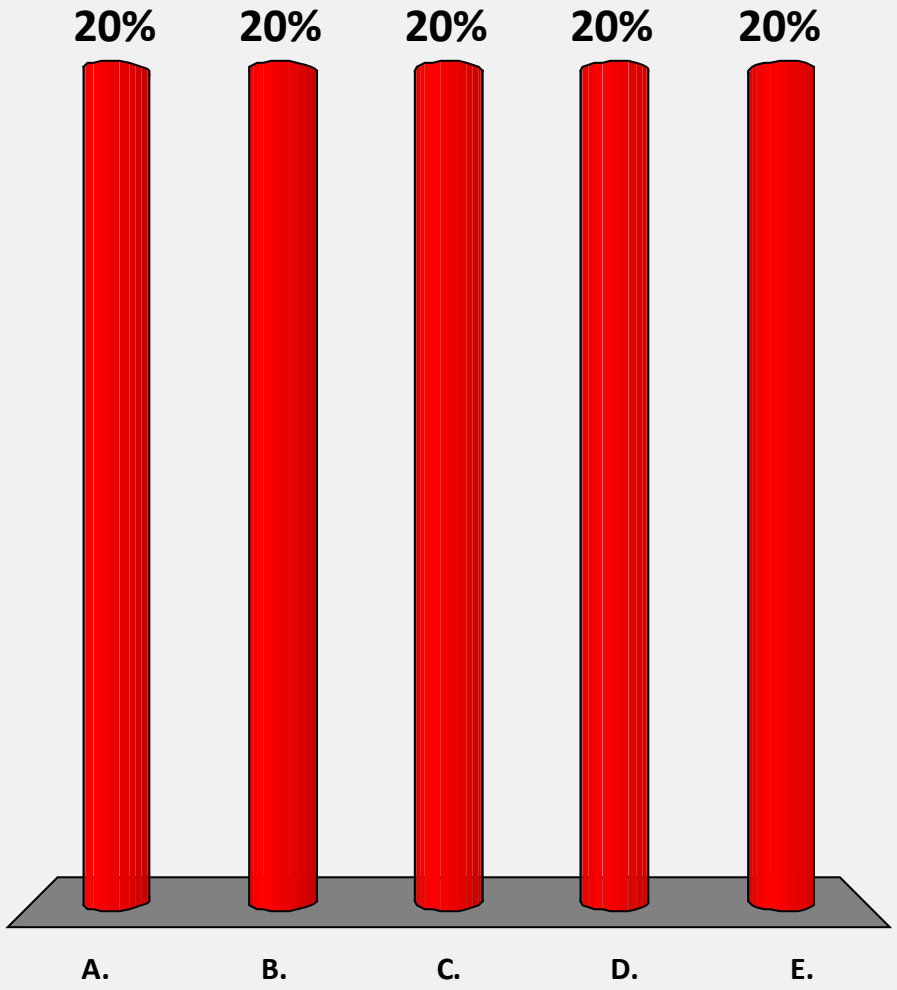
Examples: sexual activity, alcohol and drug use, domestic violence, conduct during wartime, mental health

Strategies:

- Don't start with the hard stuff!
- Consider asking question in third person
- Always ensure comfort and privacy of respondent
- Get information indirectly, if possible
- List randomization

“I am a risk-taker.”

A. Strongly disagree
B. Disagree
C. Neither agree nor disagree
D. Agree
E. Strongly agree



3. Abstract concepts

What: Potentially the most challenging and interesting type of difficult-to-measure indicators

- **Examples:** empowerment, bargaining power, social cohesion, risk aversion

– **Strategies:**

- Three key steps when measuring "abstract concepts"
  - Define what you mean by your abstract concept
  - Choose the outcome that you want to serve as the measurement of your concept
  - Design a good question to measure that outcome

– Often choice between choosing a self-reported measure and a behavioral measure – both can add value!

4. Things that aren't directly observable

What: You may want to measure outcomes that you can't ask directly about or directly observe

- **Examples:** corruption, fraud, discrimination

Strategies:

- Sometimes you just have to be clever…
- Don't worry – there have already been lots of clever people before you – so do literature reviews!

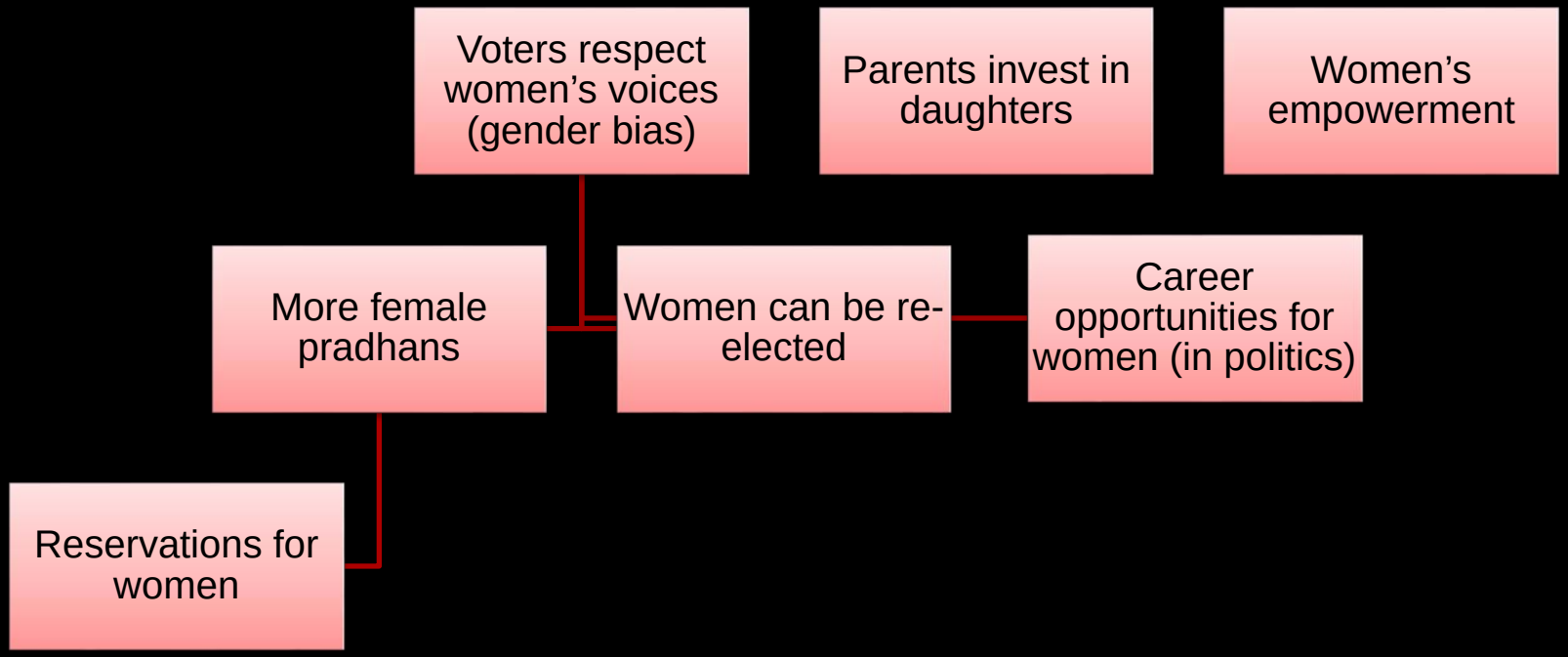
5. Things that are best directly observed

What: Behavioral preferences, anything that is more believable when done than said

Strategies:

- Develop detailed protocols
- Ensure data collection of behavioral measures done under the same circumstances for all individuals

Women's Empowerment?



Perceptions and Attitudes

- "How effective is your leader?" (ineffective, somewhat effective, effective, very…)
- Listen to a Vignette (Male v. Female)
- Revealed preference – voting behavior
- Implicit Association Tests
  - https://implicit.harvard.edu

Implicit Association Test

ASHOK

Results on Women's Empowerment

- Significant electoral gains for women in subsequent unreserved elections
- Changed perceptions of women's ability to lead effectively
- Heightened career aspirations of adolescent girls and increased level of educational attainment

SOURCES OF DATA

Where can we get data?

- Administrative Data
- Other Secondary Data
- Primary Data

Primary Data Collection

- Surveys
- Exams, tests, etc
- Games
- Vignettes
- Direct Observation
- Diaries/Logs

Modules

- Income, consumption, expenditure
- Perceptions, expectations, aspirations
- Bargaining power
- Patience, risk
- Behavior (time use)
- Anthropometric
- Cognitive, Learning
- Yields

Considerations

DATA COLLECTION

Data Collection Considerations

- Quality Control
- Surveyor training
- Surveyor (gender) composition
- Human subjects
- Data Security
- Electronic vs paper
- Costs

When to collect Data

- Baseline
- During the intervention
- Endline
- Scale-up, intervention

QUESTIONS?