Survey Development and Execution: An Overview

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MORS Symposium
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Design
Sample
Good Surveys
Analyze
Good Surveys
"Good" survey: Can do formal inference from sample to population
Design

Instrument and Question Design
- Goal is to collect accurate information
- Questions should be clear and unbiased

Fielding Design and Execution
- Ensures all respondents are included and areComfortable with the survey
- Selects a survey method and determines the sample size
- Goal is to have a representative sample with minimal chance of bias

Use Proven Methods
- Utilizes established survey techniques and tools
- Incorporates feedback and refinement processes

Images:
- One showing a checklist
- One showing a survey in progress
- One showing a book cover
Instrument and Question Design

- Goal is to collect accurate information
- Encourage honest response and minimize bias
Fielding Design and Execution

- How will respondents be contacted and complete the survey?
- There is always a trade-off between design and cost
- Goal is to maximize response rate (to minimize chance of bias)
Use Proven Methods
Real-World Surveys Often Require Complex Sampling
• Specification and execution of sampling
• Cost and operational considerations often drive sampling requirements
• Good is affordable, representative sample where each respondent has a known, non-zero probability of selection

Census Rarely Better Than Sampling
• Sampling uncertainty often much less than non-response bias
• Continuously surveying everyone contributes to survey burn-out!

Rigorous Sampling Minimizes All Types of Bias

Sample
Real-World Surveys Often Require Complex Sampling

- Stratification and/or cluster sampling
- Cost and operational considerations often drive sampling requirements
- Goal is affordable, representative sample where each respondent has a known, non-zero probability of selection
Census Rarely Better Than Sampling

- Sampling uncertainty often (much) less than non-response bias
- Continually surveying everyone contributes to survey burn-out!

Attempted census with 15% response rate

Sample with 3% margin of error and 75% response rate
Rigorous Sampling Minimizes All Types of Bias
Analyze
Need to know how sample collected to do correct analysis.
Correct Statistical Analysis
More Complicated

- Weights for correct point estimates
- S.E.s must account for complex sampling
- Post-stratification adjustments
- Imputation for missing data
- Etc, etc...

\[
\bar{x} \neq \frac{1}{n} \sum x_i \quad \text{and} \quad s_{\bar{x}} \neq \frac{s_x}{\sqrt{n}}
\]
References and Tools
Design

Sample

Good Surveys

Analyze