Surveys
- Systematic method of data collection
- Usually use samples
- Designed to measure things
  - Attitudes
  - Behaviors
- Create statistics
  - Descriptive
  - Analytic

Overview of Research Process

Research Theories → Survey Methods → Reporting And Analysis

Types of Surveys
- Original survey you designed yourself
- Non-distributed private survey
- Archived survey
- Survey data
  - Paper (or electronic) report
  - Questions from database

Surveys and the Research Process
Samples and Populations

Survey Sampling
- A census attempts to collect data from all members of a population.
- Random samples let you use collect data from a portion of a population and use sampling statistics to generalize your findings to a large population.

Survey Sampling
- Population
  - Coverage Error
  - Sample Frame
    - Nonresponse Error
    - Respondents

Probability Samples
- Based on Probability Theory
- Allow Inference to Sample Frame
- Sample Variance and Error Can Be Calculated
  - Sample records are drawn from a well-specified frame
  - Sample records are drawn according to well-specified procedures with known properties
  - Each sample record has a known non-zero probability of selection
  - Data are adjusted (weighted) as required to reflect sample design

Non-Probability Samples
- Availability Samples
  - Convenience Samples
  - Volunteer Cases

- Purposive Cases
  - Typical Cases
  - Critical Cases
  - Snowball Samples

- Quota Samples

Sample Frames
- List or a set of procedures
- Sometimes requires two or more stages of selection
- Designed to cover target population
Stratified Samples

- Divide sample records into similar groups
  - Proportionate Stratification represents each stratum in proportion to its prevalence in the population
  - Disproportionate Stratification samples groups with non-proportionate probabilities
    - Some groups are oversampled
    - Stratification might need to be adjusted or weighted for total population estimates

Sampling Procedures

- Multi-stage cluster samples
  - Select a Primary Sampling Unit (PSU) and then conduct further sampling
- Systematic samples (sample every n'th person in the frame)
- Simple random samples or Equal Probability Selection Method (EPSEM) samples give each sample record an equal probability of being selected.

Samples and Units

- Does sample record correspond to population unit?
  - Household versus person
  - Telephone household versus household
  - Organization versus employee
- How are reporting units selected?
  - All interviewed
  - Random selection
  - Convenience selection
- Nature of Information
  - Sometimes information is collected from administrative records
  - Sometimes, multiple respondents are needed to answer questionnaires
  - Sometimes, proxy respondents are used

Sample Error

- Based on Statistical Theory
- Describes Variability
- Applies From Respondents to Sample Frame

Coverage Error

- People excluded from sample frame
- Typical sampling statistics assume no coverage error
- Bias:
  - Proportion Excluded
  - Differences Between Excluded and Included

Nonresponse Error

- Sample Members Who Do Not Respond
  - Reasons:
    - Unable
    - Unavailable
    - Unwilling
  - Bias:
    - Proportion Excluded
    - Differences Between Excluded and Included
Response and Nonresponse

- Percentage of Valid Sample Records that Are Included in Statistic
  - Unit Nonresponse = Missing Respondents
  - Item Nonresponse = Missing Answers

Evaluating Coverage and Nonresponse Bias

- Evaluate magnitude of exclusion
  - Percent of population excluded from sample frame
  - Percent of sample frame non-responding

- Evaluate or discuss potential differences on key variables
  - Measurement of survey variables non-covered/responders is difficult
  - Compare with population or sample frame statistics if known
  - Adjusting or weighting data is possible
  - Reasonably discuss potential differences if exclusion is large

Measuring Levels of Nonresponse

- Response Rates
  - The percentage of eligible members of your sample who completed your survey

- Coöperation Rate
  - The percentage of (eligible) people you contacted who participated in your survey.

Outcome Rate Standards

- American Association for Public Opinion Research (AAPOR)
  - Standard Definitions, Final Dispositions of Case Codes and Outcome Rates for Surveys, 4th Edition
    (Kenexa, KS: Feb. 2006)
  - Different Specific Rates for:
    - RDD Telephone Surveys
    - In-Person Household Surveys
    - Mail Surveys of Specifically Named Persons
    - Internet Surveys of Specifically Named Persons
  - Guidelines for Similar Surveys

Field Procedures

- Modes
  - Interviewer Administered Questionnaire
    - Face-to-face
    - Telephone
  - Self-Administered Questionnaire
    - Mail
    - Web (or other computer)
    - Intercept (describe role of interviewer)
  - Multiple Modes
    - For same respondent
    - For different respondents
Field Protocols

- What rules or procedures were used to collect data?
- How were respondents contacted?
- Who contacted the respondents (if by mail or telephone)
- When were respondents contacted? (Time period of survey)
- What happened when sampled units were unavailable or refused?
- How many times were respondents contacted?

Field Protocols

- What instructions were given to interviewers? (if used)
- What instructions were given to respondents?

Protocol Clarification

- Respondent questions
- Interviewer questions
- What incentives or inducements were used?

Questions and Measures

- Concepts (Theoretical Ideas)
- Measures (Questions or Scales)
- Statistics (i.e. Data)

Theories and Surveys

Concepts

- Broad Theories
- Meaningful
- Rich

Measures

- Specifically Operationalized
- Bounded by
  - Content
  - Scope
**Types of Measures**

- Factual
  - Behavior
  - Dates and Duration
  - Demographic
- Attitudes
  - Values
  - Judgments
  - Opinions

**Measuring Attitudes**

- Latent Construct
  - Can consist of several facets or aspects
  - Questions are often scaled
  - Scales can be created from multiple batteries of questions

**Reliability and Validity**

- Reliability
  - The ability of a question to produce consistent results over repeated trials
  - Different times
  - Different surveys
- Validity
  - The ability of a measure to accurately measure what it is trying to measure
  - Construct validity measures the extent that a question measures the underlying construct it is intended to measure

**Types of Questions**

- Open End
- Closed End
- Discrete (yes/no)
- Rating Scale

**Types of Measures**

- Interval / Continuous
  - Every possible value included
- Ordinal
  - All values can be placed above or below one another
- Nominal
  - Unique discrete categories

**Questions**

- Should your percentages include or exclude people who say “don’t know” from the base?
- Should your percentages include or exclude people who didn’t answer the question from the base?
Response Effects

- Social desirability
  - Tendency varies across cultures
  - Topic Sensitivity varies across cultures

- Acquiescence
  - Tendency to always say "yes"

- Use of scale extremes
  - Giving extremely high or low answers

- Use of "no opinion" options

Response Effects

- Primacy effect
  - Respondents focusing on initial items or response choices
  - Typical in self-administered surveys

- Recency Effect
  - Respondents focusing on most recent thing they heard
  - More common in interviewer-administered surveys.

Analyzing Attitude Questions

- Percentage
  - One category
  - Two Collapsed Categories

- Numeric
  - "Mean number"
  - Realize this is an ordinal mean
  - Numeric scale

Creating Scales from Multiple Questions

- Possible to create scales from multiple questions
- Can measure activities or attitudes
- Often treated as interval data
  - Mean or Median can be reported
- Sometimes scaled to 1, 10, or 100

Documentation

- Best to discuss all decisions either in text or in appendix.
- Full question wording should be given, either in text or appendix.
- Additional documents:
  - Full questionnaire
  - Pre-notification and contact letters
  - Specialized interviewer instructions

Essential Elements

- Mode or method of data collection
- Dates and geography of data collection
- Description of target population
- Description of sample frame and sample methods
- Characteristics of respondents
Sample Documentation

- Universe study is intended to represent
- Description of sample frame and source
- Description of sample design:
  - Cluster size
  - Number of callbacks
  - Eligibility criteria and screening procedures
  - Other pertinent information

Respondents and Response Rates

- Size of samples and number of respondents
- Demographic profiles of respondents
- Response or completion rates
- Comparison of respondent characteristics to sample or population characteristics

Questionnaire Elements

- Methods for developing questionnaire
- Sources of questions if appropriate
- Full wording of all questions
  - Include visual exhibits
  - Include preceding instructions
  - Include explanation to the interviewer or respondents
- Description of data adjustment or indexing
- Description of coding methods and categories if appropriate

Resources at Harvard

- General Resources:
  http://www.iq.harvard.edu/psr/internet_resources
- Specific Resources at Harvard:
  http://www.iq.harvard.edu/psr/psr_resources_tips

How to Frame and Explain the Survey Data in your Honors Thesis

Questions and Discussion