Survey Nonresponse

Survey Research Laboratory
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Outline

I. Unit nonresponse (UN)
   A. Definition
   B. Causes
   C. Impact on data
   D. Strategies for minimizing
   E. Correcting for UN
   F. Reporting issues & UN

II. Item nonresponse (IN)
   A. Definition
   B. Causes
   C. Impact on data
   D. Strategies for minimizing
   E. Correcting for IN
   F. Reporting issues & IN

I. Unit nonresponse

A. **Definition:** “Nonresponse occurs when a sampled unit does not respond to the request to be surveyed…” (Groves et al., 2002)
   * increasing concern, especially in telephone surveys

B. Causes of unit nonresponse
   * noncontact
   * noncooperation
Failure to contact

- Non-contact patterns vary by survey mode & across different subgroups
  - Restricted-access buildings & communities
  - Telephone numbers connected to answering machines, caller ID...

Failure to gain cooperation (refusals)

- Survey requests commonly misclassified
- Repeated callbacks distinguish surveys
Evidence that survey requests are misclassified

- Refusals made quickly (<30 seconds)
- Many refusers reconsider later
- Persons apparently focus on a small number of factors when making the decision.

Factors typically considered by respondents

- Burden
- Saliency (topic importance)
- Incentive
- Authority of sponsor

Implications

- Many different reasons for refusals
- No single introduction may be suitable for all
- Interviewers must tailor introductions
  - Information from initial refusal or contact attempt
C. Impact of UN on data

- UN will result in nonresponse bias to the extent that respondents & nonrespondents differ on variables of interest
  - types of nonresponse bias
    - representativeness
    - data quality
    - distribution of responses
  - strategies for estimating nonresponse bias
    - number of calls or refusal conversions & data
    - data from studies with different response rates
    - using census data to compare respondents & nonrespondents

Nonresponse bias as function of response rate ($f_0$)

Empirical research in general finds no response rate effect

- Keeter et al. (2000)
- Curtin, Presser and Singer (2000)
Example of no relationship between nonresponse & measurement error


D. Strategies for reducing UN

• Mode
• Increase benefits
  • Incentives
  • Convince potential respondents of importance
    • introduction
    • publicity
    • trusted source or sponsor
• Reduce perceived burden
• Initial contact before interview (advance letter)

• Persistence:
  • refusal conversions
  • follow-ups
  • change societal perceptions
  • mode changes
  • interviewer changes

E. Correcting for UN

• Post data-collection weighting
• Assumptions
  • respondents & nonrespondents in a particular category (e.g., African Americans) are interchangeable
  • known population parameters of relevant characteristics
### Reporting of response rates

- AAPOR standards
- Examination of reporting in recent journal articles done by Johnson et al. (2003)

#### AAPOR response rates

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<th>+Partials</th>
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<table>
<thead>
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<th>Numerator</th>
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<td>Completes</td>
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</tbody>
</table>

- Standards can be found at www.aapor.org
- Disposition codes
  - Known eligible
  - Known ineligible
  - Always busy
  - Disconnected numbers
  - Ring, no answers
  - Unknown eligibility

### F. Reporting Issues and UN

- AAPOR response rates
- Examination of reporting in recent journal articles done by Johnson et al. (2003)
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**Journal article audit**

- Sample of 95 papers selected from same set of 18 journals
- Published January 2000 or more recent
- Unit of analysis = individual
- Noninstitutional population
- Reporting primary survey data (no secondary analyses)

**Journals**

**Health science journals**
- Amer J Psychiatry
- Amer Jour Preventive Medicine
- Amer J Public Health
- Annals of Epidemiology
- JAMA
- J Studies on Alcohol
- Medical Care
- Preventive Medicine
- Substance Use & Misuse

**Social science journals**
- Amer J Community Psychology
- Amer J Political Science
- Amer Political Science Review
- International J Public Opinion Research
- J Community Psychology
- J Health & Soc Behavior
- Public Administration Review
- Public Opinion Quarterly
- Social Forces

**Disclosure typology**

1. Report no information (5.3%)
2. Report other information only (23.2%)
3. Report non-AAPOR response rate (26.3%)
4. Report AAPOR-consistent response rate (24.2%)
5. Report summary of sample dispositions (21.1%)
Disclosure typology II

• Mail surveys are most likely to provide AAPOR response rate and/or full sample disposition information (88%).
• Telephone, face-to-face surveys are most likely to provide response rate information (44% and 43%).
• $p < .001$

Other observations

• Some argue that “no definitive formula for response rate estimates exists”
• No papers underestimate response rates
• Many appear to be overestimating response rates

II. Item nonresponse

A. Definition: When a given unit does not provide a substantive response to a particular question.
  • Sometimes called “missing data”

B. Causes of IN
  • Ability to provide information
  • Willingness to provide information
  • Privacy and anonymity concerns
C. Impact of IN on data

- IN introduces nonresponse bias if it is associated with key variables
- Examine associations between IN & key variables
  - representativeness (demographics)
  - other substantive variables

D. Strategies for minimizing IN

- reassurance of anonymity
- follow-up question(s)
- sometimes ask for less specific information (e.g., income)

E. Correcting for IN

- dropping variables
- dropping observations
- pairwise deletion
- imputation of values for missing data
- person mean substitution (scales)
- item mean substitution
- impact on central tendency
**F. Reporting issues and IN**

- Steps to deal with IN should be reported
- If a correction strategy is used, the impact of that strategy should be reported (comparison of analysis with & without correction strategy)

**Summary**

- Ideally, reduce nonresponse
- Correct for nonresponse
- Distinction between nonresponse & nonresponse bias
- Test for nonresponse bias
- Report nonresponse issues & correction strategies