Survey Research: Designing an Instrument

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Section A

Choice of Method
Characteristics of a Survey

- It applies systematic methodology
- It involves obtaining information directly from individuals
- It involves selecting a subgroup from a larger group
- It is done for the purpose of . . .
  - Description
  - Exploration
  - Explanation
Tailored Survey Design

Sampling Issues

- Whether to use probability sampling
  - The sampling frame
  - Size of the sample
  - Sampling design/strategy
  - Expected response rate

Sampling Issues

- Question design issues
  - Reliability and validity of items
  - Pre-testing or pilot work

- Interviewing issues
  - Selection of interviewers
  - Supervision
Quantitative surveys in health services research
Traditional Survey Model

A carefully standardized
*physical stimulus* (i.e., question)

Interviewer → Respondent

A *response* (i.e., answer)
expressed in terms of a standardized
format provided by the researcher
Symbolic Interactionist View

**Interviewer**
- Encodes question
  - Own purposes
  - Perceptions of respondent

**Respondent**
- Decodes question
  - Own purposes
  - Perceptions of Interviewer

**Interviewer**
- Decodes answer
  - Own presumptions
  - Perceptions of respondent

**Respondent**
- Encodes answer
  - Own presumptions
  - Perceptions of interviewer
Methods of Data Collection

- Self-administered
  - Individually
  - By mail
  - In groups
  - Internet or email
- Interviewer-administered
  - By telephone
  - In person
Methods of Data Collection

Combinations

- Self-administered with interviewer instructions
- Mail with telephone follow-up
- Interviewer-administered with embedded self-administered section
Factors in Choice of Method

- Characteristics of study population
  - Literacy
  - Physical and mental abilities
  - Motivation
Factors in Choice of Method

- Access to sample
  - Location
  - Time available for data collection
  - Infrastructure available (telephones, mail service, internet access)
Factors in Choice of Method

- Availability of information about study population
  - Telephone numbers
  - Completeness of addresses
  - Tracing information
Factors in Choice of Method

- Survey objectives
  - Complexity of questioning
  - Difficulty of reporting task
  - Topic sensitivity
Factors in Choice of Method

- Question forms to be used
  - Open-ended
    - Fill in a number
    - Write in text
  - Closed-ended
    - Multiple choice
    - Scalar (likert-type)
    - Dichotomous (yes/no)
Factors in Choice of Method

- Expected response rates
- Example (assume a group with interest):
  - Mail survey with no follow-up—30%
  - Mail survey with mail follow-up—50%
  - Mail survey with telephone follow-up—60% to 80%
Section B

Guidelines for Writing Questions
Guidelines for Writing Questions

- Restrain the impulse to write specific questions until you have thought through your research questions
- Write down your research questions and keep them handy when you are working on the questionnaire
- Every time you write a question, ask yourself . . .
  - “Why do I want to know this?”
  - “How will it help answer a research question?”
Open-Ended or Closed-Ended Questions?

- Type of information sought
  - Facts
  - Opinions or attitudes
  - Exploratory

- Complexity of the information or difficulty of the reporting task
Open-Ended or Closed-Ended Questions?

- Feasibility
  - Range of possible answers
  - Coding capabilities
  - Sample size
  - Data collection method
Advantages of Open-Ended Items

- Can get unanticipated answers
- May describe the respondent’s real views better
- Respondents can answer in their own words
- Appropriate when the range of possible answers is long
Advantages of Closed-Ended Items

- Task of answering is easier
- Interpretation of the answer is easier
- Avoids rare answers
Seek out appropriate scales, indices, questionnaires that have been used and tested by others

Examples

- Health status scales
- Quality of life
- Mental health status
- Health services utilization
- Satisfaction ratings
Scales, Indices, and Questionnaires

- Can combine several in one questionnaire
- Be careful about copyrighted instruments
Writing Questions

- Fully scripted, so that as written, the question prepares the respondent to answer
- The question means the same thing to every respondent
- The respondent understands what an appropriate answer should be
Common Pitfalls

Fuzzy Wording
- Vague and general questions produce vague and general answers
- Bad—What do you like best about this neighborhood? We’re interested in anything, like houses, the people, the parks, or whatever
Bad

- “I would like you to rate different features of your neighborhood as very good, good, fair, or poor. Please think carefully about each item as I read it. Public schools. Parks. Other.”
“I am going to ask you to rate different features of your neighborhood. I want you to think carefully about your answers. How would you rate the public schools—would you say very good, good, fair, or poor?

How would you rate the parks, would you say very good, good, fair or poor?”
Difficult Words

- Risk miscommunication with respondent
- Example:
  - “Do you think TV programs are impartial about politics?”
Of 56 Respondents . . .

- 26—interpreted “impartial” correctly
- 10—overlooked the word altogether
- 9—thought it meant “tending to spend too much time on politics”
- 5—thought it meant unfair or biased
- 2—thought it meant giving too little time to politics
- 7—had no idea
Negatives and Sneaky Double Negatives

Bad

- “What is your view about the statement that conservationists should not be so uncooperative with the government?”
Negatives and Sneaky Double Negatives

**Better**

- “What is your view about the statement that conservationists should be cooperative with the government?”
Asking Two or More Questions at Once

Bad

- “When riding in the back seat of a car, do you wear a seat belt all of the time, most of the time, some of the time, once in a while, or never?”
### Backseat Belt Question

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of the time</td>
<td>30%</td>
</tr>
<tr>
<td>Most of the time</td>
<td>17%</td>
</tr>
<tr>
<td>Some of the time</td>
<td>13%</td>
</tr>
<tr>
<td>Once in a while</td>
<td>8%</td>
</tr>
<tr>
<td>Never</td>
<td>24%</td>
</tr>
<tr>
<td>Don’t ride in back seat</td>
<td>8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
<tr>
<td><em>(n=77)</em></td>
<td></td>
</tr>
</tbody>
</table>
Asking Two or More Questions at Once

**Better**
- “In the past year, have you ridden in the back seat of a car?”
- “When you are riding in the back seat of a car, do you wear a seat belt all of the time, most of the time, some of the time, once in a while, or not at all?”
### Backseat Belt Question

<table>
<thead>
<tr>
<th></th>
<th>Original</th>
<th>Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of the time</td>
<td>30%</td>
<td>42%</td>
</tr>
<tr>
<td>Most of the time</td>
<td>17%</td>
<td>16%</td>
</tr>
<tr>
<td>Some of the time</td>
<td>13%</td>
<td>8%</td>
</tr>
<tr>
<td>Once in a while</td>
<td>8%</td>
<td>10%</td>
</tr>
<tr>
<td>Never</td>
<td>24%</td>
<td>4%</td>
</tr>
<tr>
<td>Don’t ride in back seat</td>
<td>8%</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

\[ X^2 = 19.23, \ p \leq 0.002 \]

(n=77)  (n=79)
Section C

Questionnaire Construction and Critique
Putting the Questionnaire Together

Item Order

- Self-administration—capture respondent’s interest
- Interviewer—allow for practice with question/response format (information interviewer needs to know)
Putting the Questionnaire Together

**Ideal Length**
- Self-administration—15–20 minutes
- Interviewer—20–30 minutes

**Testing**
- Read it aloud to yourself
- Read it aloud to co-workers, friends
- Ask two to three others to fill it out themselves
Systematic Pilot Testing

- Small sample (10–15)
- Similar to study population
- Use all study procedures
- Discussion of problem questions
Standard 10-Step Critique

- Use simple unambiguous language that can be understood in the same way by all respondents
- Avoid long and complex sentences
- Avoid hypothetical questions
- Avoid “double-barreled” questions (asking two questions at once and questions that include assumptions)
Standard 10-Step Critique

- Do not ask questions that ask respondents for information they do not have
- Avoid questions that ask about causality
- The time frame referred to in the question should be unambiguous and explicit
For fixed response questions, response categories must be exhaustive and mutually exclusive

Make sure the context of the question does not inappropriately affect its meaning

Define terms as needed (complex definitions and instructions should be given in a preamble or introduction, not in the question itself)