

An Introduction to Survey Methodology

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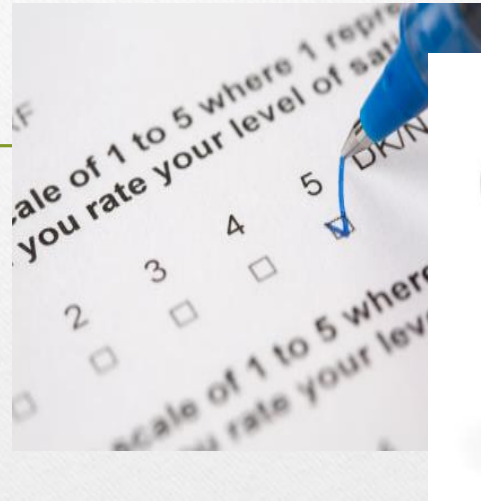
Agenda

- **Characteristics of a survey**
- **Steps in survey research**
- **Mode of data collection**
- **Develop / adapt survey items**
- **Construct survey**
- **Pilot testing**
- **Administer survey**

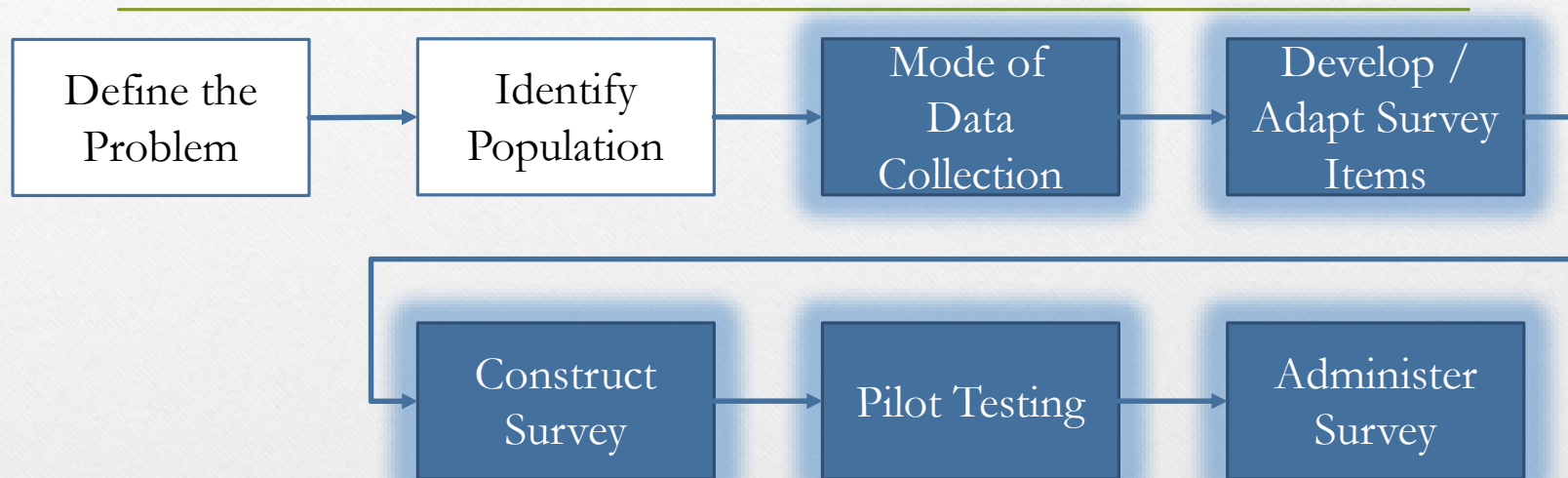


Characteristics of a Survey

- A "survey" may include anything from a short paper-and-pencil or electronic feedback, to an intensive one-on-one in-depth interview.



Steps in Survey Research



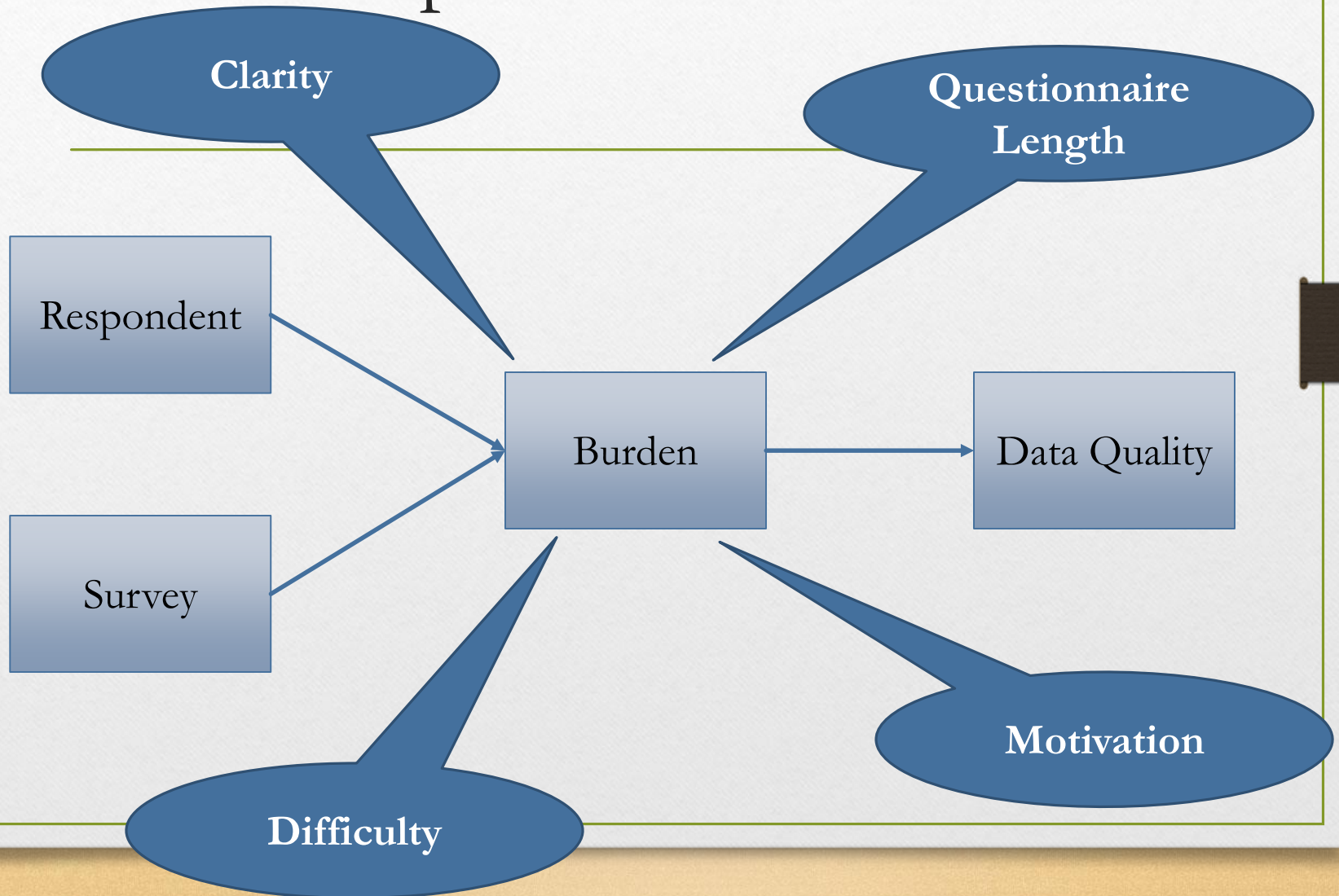
Mode of data collection

- Direct administration to a group
 - Physical location, data collector issues, confidentiality
- Telephone surveys
 - Time consuming, Interviewer fatigue
- Internet surveys
 - Commitment of participant, differences between desktop, laptop, iPad, cell phone
- Personal interviews
 - Confidentiality, interviewer bias, cost

Develop / Adapt Survey Items

- Define the data / constructs to be gathered or measured
 - Focus groups of potential participants, or convene expert panel
 - Delphi technique – Potential items are nominated and rated by experts until consensus is reached
 - Content Validity Index (CVI) – Popular in nursing research
 - Not relevant - Somewhat relevant - Quite relevant - Highly relevant

Respondent Burden



Respondent Burden

- Questionnaire length
(Subar et al., 2001)
 - Clarity
 - Ease of administration
 - Cognitive load
 - Motivation



Components of an Item

- Each item composed of a “stem” & “response format”
 - Stem – Question or statement to which participant provides a response.
 - Short, simple sentence or statement (less than 20 words)
 - Response Format – Framework for participant’s answers

Alternating Stated Stems

- Much debate
- Advantages to Alternating
 - Reducing acquiescent bias and extreme response bias
- Disadvantages to Alternating
 - Misinterpret by participant, Miscode by researcher
- Sauro and Lewis (2011), found no difference in acquiescent bias or extreme response bias when comparing positively stated questionnaire with an alternating questionnaire.

Stem Example - Modifiers

Use of Modifiers

- In the opinion of most people, the consumption of alcoholic beverages may be in some cases detrimental to the overall emotional and physical well-being of the consumer.

Revised

- Drinking alcohol is harmful to my health

Stem Example – One Variable

Multiple variables

- How many articles and book chapters did you read last month?

Revised

- How many articles did you read last month?
- How many book chapters did you read last month?

Be careful using word such as *always & never*

- People who sell cannabis should *always* be prosecuted. SD – D – A – SA
 - Participant response = SD (Strongly disagree)
 - What does SD response mean?
 - Disagree to prosecuting all dealers
 - or
 - Thinks dealers should never be prosecuted

Response Formats

Closed-Ended

Open-Ended

Advantages

- | | |
|--|--|
| <ul style="list-style-type: none">• Enhance consistency of response across respondents• Easier and faster to tabulate• More popular with respondents | <ul style="list-style-type: none">• Allow more freedom of response• Easier to construct• Permit follow-up by interviewer |
|--|--|

Disadvantages

- | | |
|---|--|
| <ul style="list-style-type: none">• May limit breadth of responses• Take more time to construct• Require more questions to cover the research topic | <ul style="list-style-type: none">• Tend to produce responses that are inconsistent in length and content across respondents• Both questions and responses subject to misinterpretation• Harder to tabulate and synthesize |
|---|--|

Closed Response Formats

*Also founded
participative
management*

- Likert Scales (*lick-ert*)
 - Responses are scored along a range
 - (SD) Strongly disagree
 - (D) Disagree
 - (U) Undecided
 - (A) Agree
 - (SA) Strongly agree



RENSIS
LIKERT

1903 - 1981

Closed Response Formats

- Middle category (neutral option) in odd-number response options
 - Much debate, and may depend on research question
 - Kulas and Stachowski, 2009
 - High response latency, an “it depends” connotation
 - Strong negative relationship with item clarity and understanding

Closed Response Formats

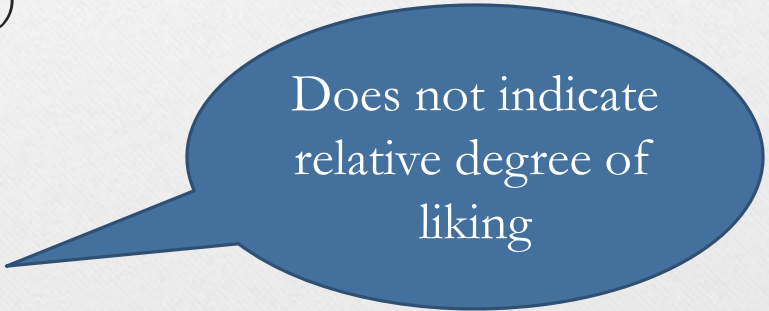
- So how many response items are appropriate? – *It Depends!*
 - Leung (2011). Six and 11 (0 to 10) point scales seemed to reduce skewness, with smallest kurtosis and closest to normal distribution.
 - Polit et al., (2007). Nurse researchers provide evidence of content validity for instruments by computing a CVI using a 4 point scale
 - Not relevant - Somewhat relevant - Quite relevant - Highly relevant

Closed Response Formats

- All that apply - Please check the computer applications you use at least twice a week
 - _____ Excel
 - _____ Word
 - _____ Access
 - _____ Other
- Other allows unanticipated responses (e.g., SPSS). Pilot testing can aid in identifying options

Closed Response Formats

- Rank Lists – Please indicate your preferred pizza toppings by ranking the following items 1 (most liked) to 5 (least liked)
 - _____ Mushrooms
 - _____ Tomatoes
 - _____ Cheese
 - _____ Pepperoni
 - _____ Sausage
 - _____ Other



Does not indicate
relative degree of
liking

Closed Response Formats

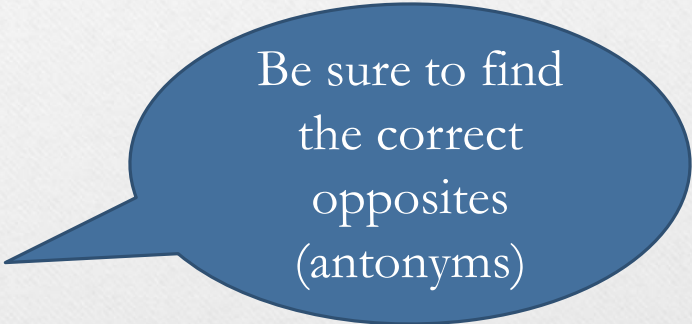
- Semantic Differential Scales – When I think about taking a statistics test, I feel:

- Sad _____ Happy

- Anxious _____ Serene

- Calm _____ Excited

- Bad _____ Good



Be sure to find
the correct
opposites
(antonyms)

Constructing the Instrument

- Visually inviting
- Clear instructions (include correctly completed sample item)
- Items may be grouped into subject areas to aid respondents thought processes and memory
- Ask demographic questions first (kind of a warm up)
- Items concerning sensitive topics towards end of document (feeling comfortable)

Cognitive Testing

- Collection of verbal information regarding survey responses
- Used to evaluate if item is measuring desired construct
- Data collected can be used to adjust problematic items
- Two basic methods
 - Think-aloud – Participants verbalize thoughts while responding to survey items
 - Probing – e.g., “In your own words, what is the question asking?”

Expert Panel

- Regardless of process, colleagues should critique items to lend some face validity to the instrument prior to pilot testing.

Pilot Testing

Always pilot
test a new
survey!

- Helps verify poorly worded or redundant questions
- Helps verify transferability of data to a statistical analysis package (e.g., SPSS, SAS, Excel, etc.)
- Consider at least two pretests
 - Test Instrument → Revise → Test Revised Instrument
- Calculate coefficient alpha for all scales & subscales

Administering the Survey

- Use rigorous and aggressive administration procedures.
 - Response rate of at least 50% is considered adequate for analysis and reporting. 60% is good, 70% is very good (Rubin & Babbie, 1997)
- Difference in variables of interest between volunteers & non-volunteers.
 - If studying depression in a sample of clinically depressed individuals, severely depressed individuals may not respond to the survey thereby resulting in bias results
- Consider outcome of respondents
 - Positive responses to surveys that explore factors such as delirium or suicide, may require researcher to report individual to appropriate entity resulting in removal from study.

Administering the Survey

- Environment
- Characteristics of data collector
- Inappropriate pressure
- Time of day

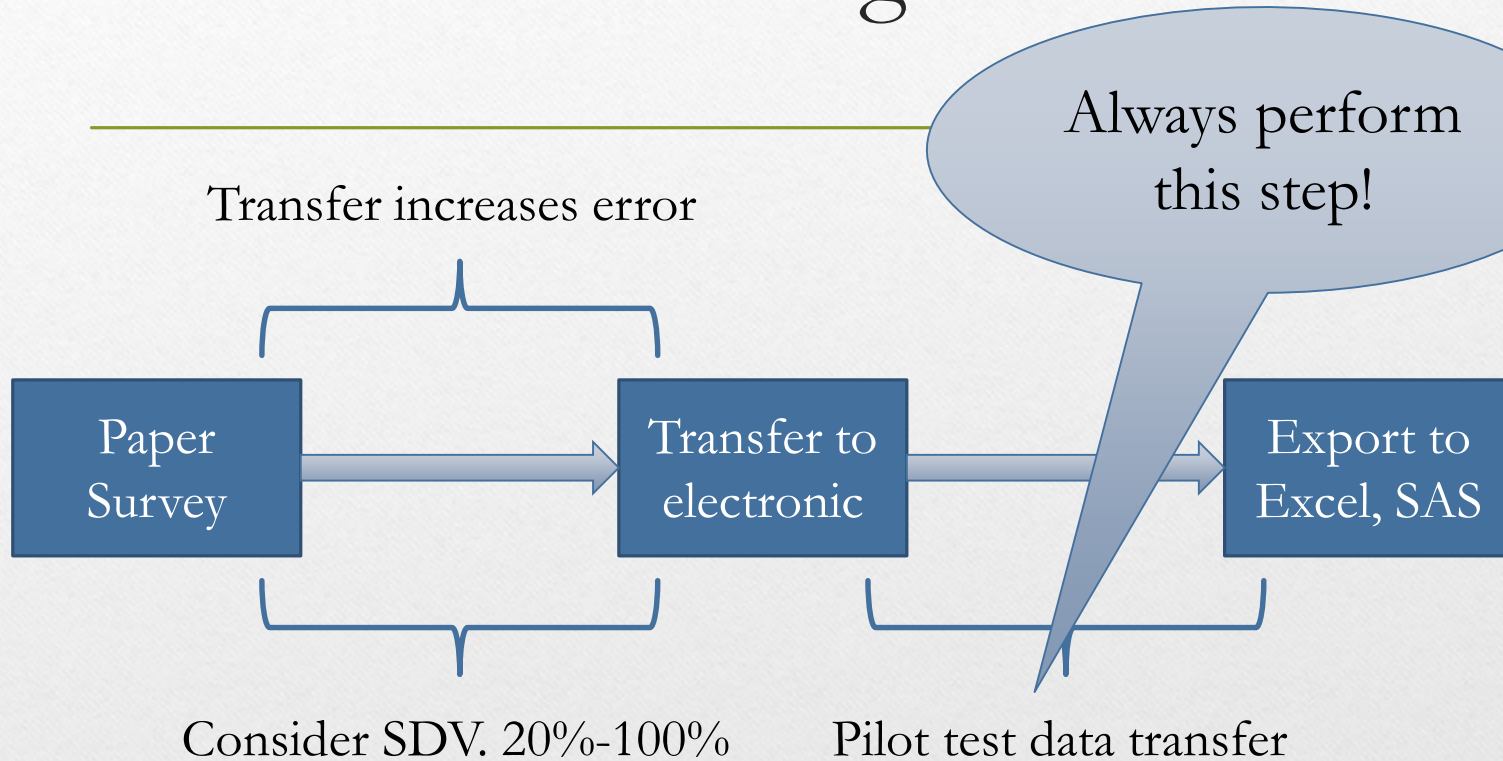
Maximizing Response Rate

- Cover letter /Introduction
 - Describe purpose
 - Highlights benefits to participant
 - Prizes, payment (payment prior to completion)
 - Highlight benefits to society
 - Assurance of anonymity / confidentiality
 - State a desired timeline (longer is not always better)
 - Estimated time to complete

Data Management

- Know in advance the data you will be collecting
 - Survey Results
 - Paradata – Processes by which the survey data were collected
 - Time of day
 - Data collection conditions - group, individual, PC, cell phone, etc.
 - Item response time, survey response time
 - Survey breakoff time and rate

Data Management



Summary

- Mode of data collection
 - Direct administration, Telephone surveys, Internet surveys, Personal interviews
- Be mindful of response burden
- Careful development of question (stem)
- Response options
 - Likert type scale –Neutral option?
- Always pilot test before distribution
- Consider the format of the data

References

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