Designing Effective Survey Instruments

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Definitions:

Handout – "Some Terms"

- Data
- Instrumentation
- Quantitative and Qualitative
- Survey and a Questionnaire
- Reliability and Validity

Data Collection Methods

- Consider
  - Using multiple measures to increase validity
  - Pairing qualitative and quantitative methods to obtain a more complete picture of the phenomenon of interest.
  - Using both qualitative and quantitative methods in sequence so results of each method provides information for the next.

Qualitative Methods

Major Types of Qualitative Methods:

- Observations
- In Depth Interviews
- Focus Group Interviews
- Documents and Records
- Nominal Group Technique
- Key Informants
- Case Studies

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Qualitative Methods

Other Types of Qualitative Data:

- Written Questionnaire with Open Ended Questions
- Expert Review
- Community Forums/ Public Hearings
- Delphi Technique

Quantitative Methods

Major Types of Quantitative Methods:

- Mail Survey
- Telephone Survey
- Group Administered Survey
- Web Based Survey

Surveys

- Measures opinions, knowledge, attitudes, beliefs, behaviors, reactions, and attributes in response to specific questions
- When need to quickly and/or easily get lots of information from people in a non threatening way

Advantages of Surveys:

- Can complete anonymously
- Inexpensive to administer
- Easy to compare and analyze
- Administer to many people
- Can get lots of data
- Many sample questionnaires already exist

Disadvantages of Surveys:

- Might not get careful feedback
- Wording can bias client's responses
- Impersonal
- In surveys, may need sampling expert
- Doesn't get full story

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Advantages of Mail Surveys:

- Efficient for volume of information collected
- People more likely to provide frank, thoughtful, honest info that is tension free
- Gives people more time
- All respondents receive exactly the same questions in the same way

Disadvantages of Mail Surveys:

- Low response rate
- Must be simple & easy to understand
- Need accurate mailing lists
- Mailing and copy expense
- Privacy, confidentiality, and anonymity must be assured
- Results may be misleading if do not follow-up with non respondents

Advantages of Telephone Surveys:

- Response rate generally high (***IF,*** *actually talk to a person*)
- Speed
- Researcher can provide clarification on unclear questions
- More relaxed than with face to face

Disadvantages of Telephone Surveys:

- Time consuming
- Need telephone numbers
- Need trained interviewers
- Interviewer's voice may bias
- Need simple and easy to understand questionnaire
- Overabundance of telemarketing

Advantages of Group Administered Surveys:

- High response rate
- Easy to clarify items to all respondents
- Provides greatest sense of respondent anonymity
- Inexpensive

Disadvantages of Group Administered Surveys:

- May require the cooperation of others; i.e. to access groups
- Reach only those in attendance
- Group dynamics may influence individual responses
- Opportunity for researcher influence

Advantages of Web Based Surveys:

- Nearly complete elimination of paper, postage, mail out, and data entry costs
- Time for implementation can be reduced
- Once electronic data collection system is developed, cost of surveying additional respondents is much less
- Display of response data can be simultaneous with completion of surveys
- Reminders and follow-up on non-respondents is relatively easy

Disadvantages of Web Based Surveys:

- Not everyone is connected
- Not all potential respondents are equally computer literate
- Sampling of e-mail addresses is difficult (no directories)
- The decision not to respond is likely to be made more quickly

Surveying Questions:

- Who to survey?
- What is the topic?
- What is the implementation plan?
- How many contacts to make?
- Will contacts be personalized?
- What is the interval between contacts
- How long is the questionnaire?

Errors in Surveying

Survey Error

- Sampling Error
- Coverage Error
- Measurement Error
- Non Response Error

Sampling Error

- The result of surveying only some, and not all, elements of the population
- The extent to which the precision of sample survey estimates is limited by the number of persons surveyed

Coverage Error

- The result of not allowing all members of the survey population to have an equal or known non zero chance of being sampled for participation in the survey
- When the "list" from which the sample is drawn does not include all elements of the population

Measurement Error

- Respondent's answer to a survey question is inaccurate, imprecise, or cannot be compared in any useful way to other respondents' answers
- Results from poor question wording and questionnaire construction

Non Response Error

- The result of people who respond to a survey being different from sampled individuals who did not respond, in a way relevant to the study
- When a significant number of people in the sample do not respond AND have different characteristics from those who do respond.

Tailored Design Method

Don Dillman

Tailored Design Method

- Survey Procedures that **create respondent trust** and perceptions of **increased rewards** and **reduced costs** for being a respondent, which take into account features of the survey situation and have as their goal the overall reduction of survey error.

Social Exchange

- The likelihood of responding accurately is greater when the respondent trusts that the expected rewards of responding will outweigh the anticipated costs

Implementation Process

- Establish Trust
- Increase Rewards
- Reduce Social Costs

Establish Trust

- Provide token of appreciation in advance
- Sponsorship by legitimate authority
- Make the task appear important
- Invoke other exchange relationships

Reduce Social Costs

- Avoid subordinate language
- Avoid embarrassment
- Avoid inconvenience
- Make questionnaire short and easy
- Minimize requests for personal information
- Emphasize similarity to other requests

Tips for Questionnaire Design

"Asking Questions with a Purpose"

Overview of Constructing a Questionnaire

1. Write the purpose of the study
2. Make a list of what you want to know
3. Check to see if information is already available
4. Only ask questions that you will use
5. Consider how you will use each piece of information
6. View questions through the eyes of the respondent
7. Be selective and realistic

Kinds of Information that can be obtained through a Questionnaire:

1. KNOWLEDGE – what people know; how well they understand something
2. BELIEFS – ATTITUDES – OPINIONS
3. BEHAVIOR – What people do
4. ATTRIBUTES – What people are; what people have
5. ASPIRATIONS – What people plan to do

Tips on Wording the Questions:

1. Use simple wording
2. Avoid using abbreviations, jargon, or foreign phrases
3. Be specific
4. Use clear wording – do not be vague
5. Include all necessary information

Tips on Wording the Questions
continued:

6. Avoid questions that may be too precise
7. Phrase personal or potentially incriminating questions in less objectionable ways
8. Avoid questions that are too demanding and time consuming
9. Use mutually exclusive categories
10. Avoid making assumptions

Tips on Wording the Questions
continued:

11. Avoid bias in questions
12. Avoid double barreled questions
13. Make the response categories clear and logical
14. Use complete sentences
15. Plan ahead for analysis

Types of Questions:

1. Open ended questions
2. Close ended questions with ordered responses
3. Close ended questions with unordered response choices
4. Partially close ended questions

Types of Questions: cont'd

- One response pick lists
- Multiple response pick lists
- Narrative comments
- Short answer
- Yes/ No
- Ranking
- Matrix

Increase Rewards

- Show positive regard
- Say "Thank You"
- Ask for advice
- Support group values
- Give tangible rewards
- Make the questionnaire interesting
- Give social validation
- Communicate scarcity of response opportunities

Formatting the questionnaire:

1. Begin with complete introduction
2. The first question should be easy, avoiding controversial topics
3. Address important topics early
4. Arrange questions so that they flow naturally
5. Try to use same type of question throughout a series of questions

Formatting the questionnaire continued:

6. A numbered response should mean the same thing throughout the questionnaire
7. Print in an easy to read type face
8. Place demographic questions at the end of the questionnaire
9. Avoid making respondents turn a page in the middle of a question
10. Distinguish between instructions, questions, and answers

Formatting the questionnaire continued:

11. Questions and answers are easier to read if they flow vertically
12. Give clear directions about how to answer
13. Pre-code as many items as possible to help tabulate/ analyze
14. Use transitional statements to enhance continuity
15. The more "white space", the better

Pre-testing the Questionnaire
Must answer the following questions:

1. Does each question measure what it is intended to measure?
2. Do respondents understand all of the words?
3. Are questions interpreted similarly by all respondents?
4. Does each close-ended questions have an answer that applies to each respondent?

Pre-testing the Questionnaire
Must answer the following questions:
continued

5. Does the questionnaire create a positive impression?
6. Are the answers respondents can choose from, correct?
7. Does any aspect of the questionnaire suggest bias on the part of the researcher?

Pre-testing the Questionnaire:

1. Ask colleagues to review the questionnaire critically
2. Select people as similar to you respondents as possible to pretest
3. Simulate the actual data collection procedure
4. Obtain feedback about the form and content of the questionnaire
5. Assess whether the questions produce the information needed
6. Try the tabulation and analysis procedures
7. Revise

Likert Scales:

ISSUES:

- Level of Measurement: Nominal, Ordinal, or Interval/Ratio
- How many points in the scale?
- Should there be a mid-point?
- How many items?
- Left to right or right to left?

Sampling:

- Probability Sampling
  - Simple Random
  - Systematic
  - Stratified
  - Cluster
- Purposeful Sampling
- Sample Size

On-Line Instrumentation Resources

Web Resources Available
(Handout)

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Survey Implementation

Elements for Increasing Response Rate

- Respondent Friendly Questionnaire
- Number of Contacts
- Return Envelops
- Personalization
- Incentive

Respondent Friendly

- Questions that are clear and easy to comprehend
- Good question ordering
- Good questionnaire layout

Constructing Mail Questionnaires

- Printed as a booklet
- No questions on front or back
- Pages are printed in photographically reduced form (79%)
- Reproduced on white or off-white paper
- Lower case for questions; Upper case for Answers
- Vertical flow; White space

Contacts

- Four Contacts by First Class Mail
  - Pre notice letter
  - Questionnaire with cover letter (invitation)
  - Thank you postcard
    - A few days to a week after questionnaire
  - Replacement questionnaire
    - 2-4 weeks after previous questionnaire

Envelop

- Use pre-addressed, stamped reply envelops
- Real stamp ~ goodwill gesture

Personalization

- Use real stationery on high quality paper
- Use real names instead of pre-printed salutations
  - Dear Resident → Poor
  - Dear Mr. Archer → Good
- Real signatures

Token

- Financial Incentives
  - Included with questionnaire
- Material Incentives
  - Pens, gum, tickets
- Lotteries, Prizes, etc.
  - Poor alternative

Web Based Surveys

Design Guidelines for Web-Based Surveys

- Utilize a multiple contact strategy
- Personalize contacts through e-mail if possible
- Do not require respondents to provide an answer to each question
- Make it possible for each question to be visible on the screen at one time
- Usually, 10-14 work days is sufficient from launch to close

Controlling for Non Response Error

- Ignore non respondents
- Compare respondents to the population
- Compare respondents to non respondents
- Compare early to late respondents

What are Your Survey Issues?

Let's Critique Some Instruments .....

Human Subjects

- Research purposes
- Office of Responsible Research Practices
- Protection of human subjects
- Exempt
  - No controversial topics
  - No minors
  - Adults who voluntarily participate

When Extension Faculty Need to be Concerned about Human Subjects:

- Publish results in Professional Journal
- Share results at National Meeting
- Evaluation part of External Grant
- Data collection involves risk
- Sensitive topics
- Subjects are vulnerable

What happens if do not get IRB Approval for projects involving "Human Subjects":

- Harm people
- Jeopardize the reputation of University
- Disciplinary action against the person(s) conducting the project
- Sanctions that prohibit University from projects involving human subjects

Questions ????