Designing Surveys and Survey Implementation

Loyola Brown Bag Series on Research and Assessment

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Director of Institutional Research
November 2006
Agenda

- What is a Survey
- Writing Good Questions
- Structuring Surveys
- Implementing Surveys
What is a Survey?

- A standardized set of questions asked of a group of people
- Questionnaires (written) or Interviews (oral)
Writing Good Questions

- Define objectives

- Make sure that all respondents have a shared understanding of the meaning of the question
Define Objectives

- Need to know both **what** you want to measure and **why**

- Need to know how the information will be used/analyzed
What and Why: Making The Data

- The way a question and response options are worded effects the distribution of responses that we get.
- In many cases we don’t know the extent to which our data is noisy but know in which direction it is noisy.
How The Information Will Be Used: Types of Data

- **Nominal**
  - ex: Gender

- **Ordinal**
  - ex: Rank the following activities in order of usefulness from most to least

- **Interval**
  - ex: Rate your satisfaction with the following experiences at Loyola on a scale of 1 to 5 . . .

- **Ratio**
  - ex: on average how many hours a day do you study?
If You Want To Say. . .: Types of Data

- 60% of undergraduates are women. – Nominal
- Students indicate that internships are the number one most useful activity in helping them apply what they have learned. – Ordinal
- On a scale of 1 to 5, students rate their overall satisfaction with Loyola a 3.78. – Interval
- Students study for an average of 22 hours a week. – Ratio
On a Scale of One to Five . . .

1  2  3  4  5
Strongly Disagree  Disagree  Neutral  Agree  Strongly Agree

1  2  3  4  5
Strongly Disagree  Disagree  Mixed  Agree  Strongly Agree
On a Scale of Zero to Ten

0      1      2      3      4      5      6      7      8     9      10
Strongly Disagree Strongly Agree
Types of Questions and Responses

- Close-ended vs. Open-ended
- Ranking vs. Rating
- Forced Choice vs. Agree Scales
Close-ended vs. Open-ended

- **Close-ended**
  
  In which first-year academic program are you enrolled this semester? (Select only one.)
  
  a. Alpha
  
  b. Collegium and First Year Experience (FE100)
  
  c. First Year Experience (FE100)
  
  d. Honors
  
  e. None
Close-ended vs. Open-ended

- **Open-ended**
  In which first-year academic program are you enrolled this semester?
Close-ended Questions

- Allows to place answers on a continuum
- Data is less noisy in close-ends
- Analysis is easier
Open-ended Questions

- When don’t know enough about the topic/potential responses to make a response list
- When asking about sensitive info
- When ask knowledge questions
- When need a transition
Rankings (Ordinal) vs. Ratings (Interval)

- **Rank** the following activities in order of usefulness from most to least

vs.

- **Rate** the following activities in order of usefulness from using a scale of 1 to 5 with 1 meaning . . .
Rankings (Ordinal) vs. Ratings (Interval)

- Ratings are generally better than rankings
  - Can’t reliably rank more than 5 items
  - Rankings don’t provide information about where items lie in a continuum
Forced Choice vs. Agree Scales

- Agree-disagree questions are subject to *acquiescence response set* (tendency of people to just “agree” with things)

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<th>1</th>
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<th>3</th>
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<tbody>
<tr>
<td></td>
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<td>Disagree</td>
<td>Mixed</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>

- If possible use a forced choice item instead
Wording Effects

- Avoid double negatives
  - “Do you favor not including athletics on lists of co-curricular programs?”
- Avoid double-barreled questions
  - “Should Loyola offer domestic partner and long-term care benefits?”
Response Options

- Respondents consider the whole scale (not just the words) when interpreting meaning of categories
  - “How would you rate your health?”
    - Good    Fair    Poor
    - Excellent Very Good Good Fair Poor
No Opinion / Don’t Know

- If it is there, people will use it
  - Does it make sense (can you have “no opinion?”)
Getting Negative Information

- Invite people to say negative things by introducing it in the question
  - “What challenges, if any, have you had with . . .”
- Put negative response options first
  - Poor, Fair, Good, Very Good, Excellent
Shared Understanding

- **Provide definitions**
  - “When you drink, how many drinks do you usually have? (A “drink” is a 12-ounce beer, a glass of wine, a wine cooler, a shot glass of liquor, or a mixed drink.)”

- **Use common terms**
Shared Understanding?

“Overall, on a scale of 0 to 10 rate the success of this course in helping you ‘explore how genre shapes reading and writing’ as you wrote ‘contemporary American essays’ (e.g., literary, scholarly, & narrative essays).”
Structuring Surveys

- Start with easy, non-threatening questions

- Never start a questionnaire with an open-ended question
  - Okay to do this on an interview

- Ask about one topic at a time
  - When switching topics, use a transition
Structuring Surveys

General

Specific
Implementing Surveys

- Interview
- **Paper-and-Pencil**
  - In class/event
  - Mail
- **Online**
  - SurveyMonkey
  - Zoomerang
Sampling

- **Population**
  - The group we are interested in for a particular study

- **Sampling Frame**
  - Enumeration of the population from which the sample is drawn
Sampling

population parameter

sample statistic

probability

inferences
Types of Sampling

- **Probability sampling**
  - Probability of any element being included in the sample is known
    - Is the basis for inferring parameters from statistics

- **Non-probability sampling**
  - Probability of any element being included in the sample is not known
    - Can not generalize from this data
Methods of Sampling

- **Non-probability sampling**
  - Intercept sample
  - Snowball sample
  - Quota sample

- **Probability sampling**
  - Simple random sample
  - Stratified sample
  - Cluster sample
Intercept Sample

- Stopping people who are at a specific location and asking them to participate in the survey
  - Useful for site-specific studies
  - High refusal and attrition rates
Simple Random Sample

- Each element in the population has an equal and known probability of being selected into the sample

- Selection of every \( k \)th person from a list is systematic sampling
  - Beware of periodicity in the list
<table>
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<tr>
<th>A</th>
<th>B</th>
<th>C</th>
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<tbody>
<tr>
<td>name</td>
<td>email</td>
<td>class level</td>
<td>sample</td>
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<td>John Doe</td>
<td><a href="mailto:jdo@nowhere.com">jdo@nowhere.com</a></td>
<td>Sophomore</td>
<td>=RAND()</td>
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<td>Jim Smith</td>
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<tr>
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<tr>
<td>Jamie Black</td>
<td><a href="mailto:jb@nowhere.com">jb@nowhere.com</a></td>
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<td></td>
</tr>
</tbody>
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**Function Arguments**

- **RAND**
  - Volatile
  - Returns a random number greater than or equal to 0 and less than 1, evenly distributed (changes on recalculation).
  - This function takes no arguments.

- **Formula result**: Volatile
  - [help on this function](#)
## Implementing Surveys

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
<th>Class</th>
<th>Level</th>
<th>Sample</th>
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<tbody>
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<td><a href="mailto:jdo@nowhere.com">jdo@nowhere.com</a></td>
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<td></td>
<td>Junior</td>
<td>0.2867</td>
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**Sort**

- **Sort by**: Sample
- **Then by**: Ascending

**Data Range**
- **Header row**: Yes

**Options**
- **OK**
- **Cancel**
Number of Invites - Size of Sample

- Number of invitations to the survey > Number of survey respondents (N) desired
  - Some invitations will not be received
  - Some invitations will not be responded to
  - Some people will not qualify
  - Some people will not complete the survey
Human Subjects Review

- Objectives:
  - Assess the scientific merit of the research and its methods,
  - Promote fully informed and voluntary participation by prospective subjects
  - Maximize the safety of subjects once they are enrolled in the project
Return of a completed survey is implied voluntary participation/consent
Most surveys are “exempt”

B) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:

(1) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects;

and

(2) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.
Terra Schehr

Loyola College
November 2006