What are Questionnaires and Surveys?

• Structured set of questions delivered either:
  • Orally
  • Pen and paper
  • Mail
  • Online

• Not strictly qualitative - More structured than many qualitative techniques

• Not strictly quantitative - Can be less structured and more exploratory
**Why learn about these?**

- We’ve seen enough examples, so what is the point?

- It is very easy to design **BAD** questionnaires and surveys
  - Difficult to design a good survey

- How many terrible surveys have you seen?
  - Junk mail and unwanted telephone calls

- What constitutes a bad survey?
  - Fails to target or engage your intended audience
  - Fails to answer the research questions you wanted to ask

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**Characteristics of Surveys**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systematic</td>
<td>The survey follows a specific set of rules; a formal and orderly logic of operations.</td>
</tr>
<tr>
<td>Impartial</td>
<td>The survey selects units of the population without prejudice or preference.</td>
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<tr>
<td>Representative</td>
<td>The survey includes units that together are representative of the problem under study and the population affected by it.</td>
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<tr>
<td>Theory-Based</td>
<td>The survey’s operations are guided by relevant principles of human behavior and mathematical laws of probability and statistics.</td>
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<tr>
<td>Quantitative</td>
<td>The survey assigns numerical values to non-numerical characteristics of human behavior in ways that permit uniform interpretation of these characteristics.</td>
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<tr>
<td>Replicable</td>
<td>Other people using the same methods in the same ways can get essentially the same results.</td>
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</tbody>
</table>
### Overview of Process

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify research objectives</td>
<td>What do you want the survey to accomplish?</td>
</tr>
<tr>
<td>Identify &amp; characterize target audience</td>
<td>Who, specifically, will respond to the survey? What assumptions can you make about their knowledge, their terminology, their willingness to participate in the survey, and so forth?</td>
</tr>
<tr>
<td>Design sampling plan</td>
<td>How big is the target audience population? How will you ensure that those who respond are representative of the target audience?</td>
</tr>
<tr>
<td>Design &amp; write questionnaire</td>
<td>Objectives must be translated into carefully-worded questions to facilitate understanding and analysis</td>
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</tbody>
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### Identify Research Objectives

- **Focus**
  - Less can sometimes be more

- **What can you reasonably expect to learn with a survey?**
  - Are other techniques more appropriate?
  - What has already been proven by others?
  - How to triangulate?
TARGET POPULATION

• How many people are in the population we are studying?
• What are their jobs and responsibilities?
• What is the most common education level?
• What relevant experience do they possess?
• What is the age range of the population?
• Do we anticipate any difficulty with delivering a questionnaire:
  – Via mail?
  – Over internet?
  – In person?
• What can we assume about their knowledge of the domain?
• How do they speak about the domain?
• Will they be motivated to complete the questionnaire?

SAMPLING

• What are our goals?
  – Representative (probability) sample, or…
    • Every person has equal probability of participating
    • Used to infer about whole population
  – Idiosyncratic sample, or…
    • Self-selecting sample
    • Convenience samples
      – Problems with bias and generalizability
    – Census
Sample Sizes and Precision

- What are we hoping to accomplish?
- What are our tolerances for survey?
- Yamane 1967
  - For cells with * we cannot assume normal distribution

<table>
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<th>Precision Level ±</th>
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Questionnaire Considerations

- Delivery method
  - Paper
  - Internet
  - Phone
  - Person
  - Etc.
- How long should the questionnaire be?
- Structure and organization
Questions

- Types of questions:
  - Attributes
    - Age, gender, education level, etc.
  - Attitudes
    - Personal outlook and orientation
  - Beliefs
    - Subjects’ assessments
  - Behaviors

Question Properties

- Must be understandable to audience
- Must offer valid & meaningful answer options
- Must be relevant to subjects
- Must be open to quantitative analysis

- Construct validity
  - Are we measuring what we think we are measuring?
- External validity
  - Can the results be generalized to other people, places, or times?
**Question Guidelines**

- Do not be vague.
- Use simple words.
- Keep it short.
- Be specific.
- Avoid bias.
- Do not be too specific.
- Avoid hypothetical questions.

**Question Types**

- Binary
- Likert scale
- Ordering
- Single/multiple selection
- Categories
- Open-ended questions
Pitfalls

• Compound questions
  – Ask one thing at a time
• Demanding questions
  – Sensitive, or too specific
• Demanding/ambiguous language
• Biased language/Leading questions
• Mutually exclusive options
  – 0-3yrs, 3-5yrs…

Survey Length

• Each question decreases participation by 0.5%
• Each page decreases participation by 5%

• Prioritize questions:
  1. must know
  2. useful to know
  3. nice to know

• Discard group 3 unless groups 1 and 2 are very short.
• Ask demographic questions last
• Group questions by category/theme
Golden rule of survey design

• Test it out

• Despite your best efforts, you will rarely get it right on the first try
  – Better to get feedback before you’ve wasted your own, and your subjects’ time.