Survey Methodology

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Empirical Research Support

In the beginning…

- Survey research is a relatively new phenomenon
- Straw polls, or polls conducted by newspapers were some of the first surveys
- Straw polls were notoriously unreliable; **the average error** of a poll conducted by Hearst Newspapers in 1924 was **12%**.
- This continued until…

In the beginning…

- The *Literary Digest* 1936 Presidential election poll: The *Digest* predicted that Alf Landon would beat Franklin Roosevelt, **57% to 43%**.
  - FDR went on to win the election, with **62.5%** of the vote.
  - **They were 20% away from the actual vote!**
- Their mistakes were largely due to a *lack of a random sample* (they asked their readers, who were richer and more Republican than the general population)
- This same election saw three pollsters (Crossley, Roper and Gallup) use more scientific methods to better predict the election

Some definitions

- **Population:** Total set of subjects of interest in the study
- **Sample**: Subset of the population from which we collect data
- **Random sample:** A subset of *n* size in which each possible sample of that size has the same probability of being selected
- **Error**: The typical deviation of the mean of the sample from the mean of the population

Developing a survey

- Three basic principles:
  1. Use existing materials
  2. Test your survey
  3. Be considerate of your respondents

Survey Design 1

- Wording: The Ideal
  - The ideal question:
  - Measures the underlying concept well
  - Measures one (and only one) concept
  - Means the same thing to all respondents

Survey Design 2

- Wording: Where to Start
  - **Look to what others have done!**
    - Someone else has probably tried to measure this concept
    - Re-using survey questions provides two distinct advantages
      - 1. Previous researchers may have already tested the reliability and validity of the question, saving you time.
      - 2. Using identical questions allows you to compare your findings with previous findings
    - Consider looking at the General Social Survey, iPoll, ICPSR, and in the general literature for examples.

Survey Design 3

- Wording: Improving your survey
  - If you choose your own wording:
  - **Test it!** You do not want to put a survey in the field with a major flaw in the wording
    - **Ask someone not association with your research to take the survey** (Uninterested family members are ideal). Ask the test subjects for details on why they answered questions in a particular way
  - The Question Understanding Aid (**QUAID**) is a program that will identify common problems with your survey. It is available (after registration) at : http://mnemosyne.csl.psyc.memphis.edu/QUAID/quaidindex.html

Survey Design 4

- Wording: General Pointers
  - **Start with a soft introduction**. People may be more willing to answer your questions if they know why you are doing the survey
  - Ask **a few easy questions** in the beginning, to get people started
  - Place overly personal or potentially embarrassing questions **at the end of the survey**.
  - **Be aware that early questions can affect later questions**. For example, if someone is asked for their income in the beginning, the respondent may be overly conscience of all questions relating to economics in the remainder of the survey.

Implementing the Survey

- Institutional Review Board
- Sampling
- Types of Surveys

Institutional Review Board (IRB)

- Anytime research will involve *human subjects*, the researcher must apply for permission from the IRB
- It is easy to get IRB approval for *most* surveys, because they 1) pose no harm to the participant and 2) involve little manipulation
- **GET APPROVAL,** even if your survey is "harmless."
- Look to http://www.law.duke.edu/lib/facultyservices/empirical/training for information on IRBs, at Duke and elsewhere.

A (very) short lesson on Sampling

- A survey can be a very strong research tool because they allow you to generalize the opinions of a small group to a larger population
- IF the sampling is done correctly!
  - This means:
    - 1. Random Sample
    - 2. No Opt-Ins, convenience samples, etc
    - 3. If a large group is excluded from your sample, you cannot generalize your results to that group.

Types of Surveys

Type	Positive	Negative
Telephone	Quick, relatively cheap, easy to outsource	May get biased results,* increasingly difficult to get the participation necessary
Face-to-face interview	Best for longer or more complex surveys, produces great data	Expensive, may have interviewer effects**
Focus groups	Best for analyzing group interactions, can produce interview-like data in less time	Requires all participants to be located in a central area, may have interviewer effects
Internet	Cheap, easy to design, quick for participants	May get biased results; hard to get random sample

*Biased results in a telephone survey may be from several sources, most of which are due to the nature of the telephone. For example, telephone surveys are going to have a higher number of respondents that are older, more white, and more well off. They will have a lower number of young people (as cell phones are not called during random digit dialing), poor people (who might not have a phone), and anyone that works during the typical survey hours, 5:30-8pm.

** Interviewer effects are due to the respondent answering the survey differently based on the characteristics of the interviewer. For example, respondents may be less likely to display racist tendencies when interviewed by a minority.

Analyzing a Survey

- **Be aware of your error!**
  - You can identify the level of error in your sample by comparing your sample mean to the population mean
  - Or, in the event that you do not know the population mean, calculating the error using Z scores.
- Consider using a software package designed specifically for analyzing survey data
  - This is built into STATA, but special packages need to be purchased for SPSS and SAS

Major points

1. **Don't Waste Time and Resources!**

- A poorly constructed survey will waste time and resources and tell you little
  - Be prepared to spend more time on the design of the survey than on the implementation
- Make sure to ***test*** your survey thoroughly
- Always do a thorough review of the extant literature and existing surveys

Major Points

2. **Be considerate of your participants**

- Don't ask your respondents unnecessary personal questions
- Don't waste the time of your participants
- Don't try to "trick" your participants into saying what you want to hear
- Do value your participants, their time, and their opinions.

Major points

3. **Be Careful how you talk about survey data**

- A survey does not tell you that X = Y
  - A survey may tell you that X is related to Y
- You cannot determine causation with survey data!
- Surveys are best at telling you information about attitudes, factual information, needs, wants, knowledge, and self-perceptions

Local Resources

- Social Science Research Institute (SSRI) has computer labs, a bank of participants, and a statistician available for Duke University faculty and students. Please see http://www.ssri.duke.edu/our-work.php
- The Odum Institute at UNC has several survey research classes. See http://www.irss.unc.edu/odum/jsp/content_node.jsp?nodeid=6

Books

- The following books are available in Lauren Collins' office (3030):
  - *Introduction to Survey Sampling* by Graham Kalton
  - *Designing Social Inquiry* by Gary King, Robert Keohane and Sidney Verba.
  - *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* by John Creswell
  - *Handbook of Research Methods: A Guide for Practitioners and Students in the Social Sciences* by Natalie Sproull

Online Resources

- Harvard's Program on Survey Research
  - http://www.iq.harvard.edu/psr/
- University of Illinois at Chicago's Survey Research Laboratory
  - http://www.srl.uic.edu/
- The Pew Center's Polling Research
  - http://people-press.org/
- Statpac's designing surveys tutorial
  - http://www.statpac.com/surveys/