

INTRODUCTION TO SURVEY RESEARCH DESIGN

Linda K. Owens

**Assistant Director for Research Planning
Survey Research Laboratory**



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WHY DO A SURVEY?

1. **Uniqueness**: gather information not available from other sources
2. **Probability Sampling**: unbiased representation of population of interest
3. **Standardization of measurement**: same information collected from every respondent
4. **Analysis needs**: use survey data to compliment existing data from secondary sources

BASIC SURVEY DESIGNS

- **Cross-Sectional Surveys: Data are collected at one point in time from a sample selected to represent a larger population.**

- **Longitudinal Surveys = Trend, Cohort, and Panel**

Trend: Surveys of sample population at different points in time

Cohort: Study of same population each time data are collected, although samples studied may be different

Panel: Collection of data at various time points with the same sample of respondents.

MODES OF SURVEY ADMINISTRATION

- ***Personal (Face-to-Face)***
- ***Telephone***
- ***Mail***
- ***Web***
- ***Combination of Methods***

HOW DO YOU DECIDE ON THE MODE OF DATA COLLECTION?

Population
+
Characteristics Of The Sample
+
Types of Questions
+
Question Topic
+
Response Rate
+
\$\$ Cost \$\$
+
Time

PERSONAL INTERVIEWING

ADVANTAGES:

- ✓ Generally yields highest cooperation and lowest refusal rates
- ✓ Allows for longer, more complex interviews
- ✓ High response quality
- ✓ Takes advantage of interviewer presence
- ✓ Multi-method data collection

DISADVANTAGES:

- ✓ Most costly mode of administration
- ✓ Longer data collection period
- ✓ Interviewer concerns

TELEPHONE INTERVIEWING

ADVANTAGES:

- ✓ Less expensive than personal interviews
- ✓ RDD samples of general population
- ✓ Shorter data collection period than personal interviews
- ✓ Interviewer administration (vs. mail)
- ✓ Better control and supervision of interviewers (vs. personal)
- ✓ Better response rate than mail for list samples

DISADVANTAGES:

- ✓ Biased against households without telephones, unlisted numbers
- ✓ Nonresponse
- ✓ Questionnaire constraints
- ✓ Difficult to administer questionnaires on sensitive or complex topics

MAIL SURVEYS

ADVANTAGES:

- ✓ Generally lowest cost
- ✓ Can be administered by smaller team of people (no field staff)
- ✓ Access to otherwise difficult to locate, busy populations
- ✓ Respondents can look up information or consult with others

DISADVANTAGES:

- ✓ Most difficult to obtain cooperation
- ✓ No interviewer involved in collection of data
- ✓ Need good sample
- ✓ More likely to need an incentive for respondents
- ✓ Slower data collection period than telephone

COMPARISON OF DATA COLLECTION METHODS

<i>Variable</i>	<i>Mail</i>	<i>Phone</i>	<i>F/F</i>
Cost	Cheapest	Moderate	Costly
Speed	Moderate	Fast	Slow
Response rate	Low to moderate	Moderate	High
Sampling need	Address	Telephone number	Address
Burden on respondent	High	Moderate	Low
Control participation Of others	Unknown	High	Variable
Length of Questionnaire	Short	Moderate	Long
Sensitive questions	Best	Moderate	Poor
Lengthy answer choices	Poor	Good	Best
Open-ended responses	Poor	Good	Best
Complexity of Questionnaire	Poor	Good	Best
Possibility of interviewer bias	None	Moderate	High

WEB SURVEYS

ADVANTAGES:

- ✓ Lower cost (no paper, postage, mailing, data entry costs)
- ✓ Can reach international populations
- ✓ Time required for implementation reduced
- ✓ Complex skip patterns can be programmed
- ✓ Sample size can be greater

DISADVANTAGES:

- ✓ Approximately 40% of homes own a computer; 30% have home e-mail
- ✓ Representative samples difficult - cannot generate random samples of general population
- ✓ Differences in capabilities of people's computers and software for accessing Web surveys
- ✓ Different ISPs/line speeds limits extent of graphics that can be used

PAPER VS. COMPUTER ADMINISTRATION

- PAPI:** Paper and Pencil Interviewing
- CAI:** Computer-Assisted Interviewing
- CATI:** Computer-Assisted Telephone Interviewing
- CAPI:** Computer-Assisted Personal Interviewing
- CASI:** Computer-Assisted Self-Interview
- Audio-CASI:** Audio Computer-Assisted Self-Interview

ADVANTAGES OF COMPUTER ADMINISTRATION

- ***Operational Issues***
- ***Cost Comparisons***
- ***Time to Complete***
- ***Reduction in Interviewer Errors***

Branching

Insertion of Data

Instant Editing

- ***Data Available Faster After Collection***

WHICH ACRONYM?

**PAPI is recommended for studies with pre-screening phase
(i.e. when desired respondent not known)**

CATI now standard for RDD surveys

CASI works well for sensitive issues

Audio-CASI works well for

Low Literacy

Non-English-Speaking Populations

OPERATIONAL/COST ISSUES

- **Computers Increase Up-Front Effort**
- **Data Entry Reduced or Eliminated**
- **Questionnaire Complexity, Revisions**
- **Cost Comparisons**

ISSUES TO CONSIDER

- *What is your research question?*
- *What is your target population?*
- *What do you know about this population?*
- *Do you have a sample frame? What shape is it in?*
- *Do you have an existing questionnaire?*
- *By when do you need your data?*
- *How much money do you have?*

WHAT FACTORS INTO THE COST?

- professional time required to write, program questionnaire
- professional time to design and implement sample plan
- questionnaire length
- condition of the sample frame
- availability of the sample for interview
- the saliency of the topic to the population
- interviewer hiring and trainings
- callback procedures
- eligibility criteria (screening is VERY expensive)
- geographic dispersion of the sample (*phone, personal*)
- postage, mailing costs (*mail*)
- travel for interviewers to sample and to SRL (*personal*)
- coding, data entry

SUGGESTED READINGS

- Aday, L. A. (1996). *Designing and Conducting Health Surveys*, 2nd ed. San Francisco: Jossey-Bass.
- Biemer, P., Groves, R., Lyberg, L., Mathiowetz, N., & Sudman, S. (eds.) (1991). *Measurement Errors in Surveys*. New York: Wiley.
- Dillman, D. (1978). *Mail and Telephone Surveys: The Total Design Method*. New York: Wiley.
- Dillman, D. (2000). *Mail and Internet Surveys: The Tailored Design Method*. New York: Wiley & Sons.
- Fink, A., & Kosecoff, J. (1985). *How to Conduct Surveys: A Step-by-step Guide*. Beverly Hills, CA: Sage, 1985.
- Fowler, F. J., Jr. *Survey Research Methods*, 2nd ed. Newbury Park, CA: Sage, 1993.
- Groves, R. (1989). *Survey Errors and Survey Costs*. New York: Wiley, 1989.
- Groves, R., Biemer, P., Lyberg, L., Massey, J., Nicholls, W., II, & Waksberg, J. (eds.) (1988). *Telephone Survey Methodology*. New York: Wiley.
- Lavrakas, P. J. (1993). *Telephone Survey Methods: Sampling, Selection, and Supervision*. Newbury Park, CA: Sage.

Lessler, J. T., & Kalsbeek, W. D. (1992). *Nonsampling Error in Surveys*. New York: Wiley.

Lyberg, L., Biemer, P., Collins, M., deLeeuw, E., Dippo, C., Schwarz, N., & Trewin, D. (eds.) (1997). *Survey Measurement and Process Quality*. New York: Wiley.

Marín, G., & Marín, B. V. (1991). *Research with Hispanic Populations*. Newbury Park, CA: Sage.

Turner, C. F., & Martin, E. (eds.) (1984). *Surveying Subjective Phenomena* (2 volumes). New York: Russell Sage.

Journals: *Public Opinion Quarterly* and *Journal of Official Statistics*