



Strategies for Survey Research and Techniques for Survey Design

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**So you want to engage
in survey research,
huh?**



Today's session

- I. Considerations in Planning The Survey
- II. Data Collection Strategies
- III. Methods for Survey Administration
- IV. Seven Steps of Survey Design
- V. Group Activity to Evaluate instruments and/or begin development of your own instrument
- VI. Considerations for Web surveys
- VII. Considerations for Sampling

Planning the Survey

- What are the objectives of the survey?
- What are the critical questions to be answered?
- How will the results be used?
- What have others done on this topic?

Before you begin....

- Your first question should be

Has someone already collected the information? If so, can I use that information?

If You Decide To Survey

- Questions listed previously, plus
- Who will you survey?
- Will you use a sample or a census?
- How will you select your sample?
- What survey design will you use?
- How much will it cost?
- What is your timeline?
- How will you analyze and report the data?

Survey Methods

- Paper/pencil
- Web survey
- Database/Warehouse
- Naturalistic observation
- Personal interview
- Focus group
- Telephone poll
- Telephone interview

Considerations...

- Compare the costs of data collection strategy
 - Staff time
 - Printing, mailing costs
 - Hardware/software acquisition/training
 - Data Entry and analysis time
- Pilot test all procedures
 - Collect data as designed from a small sample to test procedures, review directions and determine amount of time needed.

Today

We will focus on paper-based surveys, but will also cover a few issues for web-based surveys as well.

Methods for Survey Administration

- Complete in classroom setting
 - best response rates and can control atmosphere
- Distribute in class and ask students to return via mail or to class next day
- Mail to home address
 - best response rates when following Dillman's Total Design Method (TDM)
 - KB method: preannounce; send survey; send follow-up announcement, mail second copy of survey
- Telephone Interview
- Web/Internet
- Mixed Modes

Mail Surveys



How do you get
70% mail survey
response rates?

Dillman's Total Design Method will achieve 70% return rate

- Questions crafted well, in logical order
- Folded to show letterhead, top of first page
- Cover letter important
- Four carefully-timed mailings, last sent by certified mail
- All contacts personalized
- The look of the survey is professional, high quality reproduction of survey

Dillman's newer method - Tailored Design

- “Survey procedures that create response trust & perceptions of increased rewards & reduced costs for being a respondent” (2000, p. 27)
- high response rates require more intensive efforts including token financial incentives and five contacts (one being phone or courier mail)

Excellent surveys

- Must be WELL DESIGNED
- Must be EASY TO ANSWER
- Take NO MORE THAN 20-30 minutes
- Keep respondents ENGAGED

To Increase Response Rates:

- Consider the culture, total # surveys out
- Identify a larger number of eligible respondents than you need in case you have to go back for second set
- Complete a pilot test to ensure question readability, survey format
- Provide gift or cash incentives when possible
- Plan at least one follow up reminder or mailing
- Customize request letter/email when possible
- Keep survey responses confidential
- Use trained, articulate, personable interviewers

Excellent cover letters

- Must **SELL** the importance of the study
- Must **GUARANTEE** confidentiality
- Must **EXPLAIN** how to return it and date for return
- Best if sent by **VIP** on **OFFICIAL** Letterhead

Do You Need an Incentive?

- Hotly debated
- Often depends on the population, previous trends in response rates, and their perceived investment
- Especially important in longitudinal studies

Perfect timing

- Avoid exam or other busy times
- Send email/ preannouncement 2-3 days prior to survey mailing
- (At last for US college students) First mailing should arrive on Thursday/Friday
- First half of semester/term
- Avoid holidays and big campus/organization events

PERFECT TIMING

Follow this schedule:

- Preannounce survey
- Send 1st mailing about 1 week later, to arrive near weekend
- Send 2nd mailing 7-10 days later
- Send 3rd mailing 7-10 days later
 - Must contain 2nd copy of survey
- Send 4th mailing or call if needed

MAKE IT EASY !!!

- Write simple questions - use < 25 words per item
- Provide easy-to-mark answers
- Use lots of “white space” between items
- Sequence items to maximize FLOW

MAKE IT EASY

- Provide postage-paid metered business reply envelope or web reply
- Specify a RETURN DUE DATE

Survey Design



Seven Steps to Survey Design

- Outline topic(s) and draft items
- Choose response formats
- Write & edit items
- Determine item sequence
- Determine physical characteristics of survey
- Review and revise survey [many times!!!]
- Pilot test survey & revise

Draft Reliable and Valid Items

- Will respondents interpret the item in the same way on a different day? (reliability)
- Will the item mean the same thing to all people in the population? (reliability)
- Will the item elicit the information you want? (validity)
- Will the item elicit accurate and relevant data? (validity)

Response Formats

Fixed format items

Dichotomous

Are you married?

(1) ___ Yes

(2) ___ No

Multiple Response-Checklist

Which courses have you taken ? Check all that apply.

___ English

___ Mathematics

___ History

Response Formats

Rankings

Please rank each category below to indicate how important each is to you:

- ___ English
- ___ Mathematics
- ___ History
- ___ Science

Response Formats

Fixed format/Likert scaled items

Overall, how satisfied were you with your leadership class?

1. Very dissatisfied
2. Dissatisfied
3. Neutral
4. Satisfied
5. Very Satisfied

Response Formats

Semantic Differential Rating Scale

The library's services are (place an X along the continuum):

Useful	— — — — — — —	Useless
Slow	— — — — — — —	Fast
Friendly	— — — — — — —	Unfriendly
For Faculty	— — — — — — —	For Students

Multiple Response-Rating Scale, multi-item

Overall, how satisfied were you with the following services?

	Level of Satisfaction				
Service/ Program	Very Dissatisfied (1)	Dissatisfied (2)	Neutral (3)	Satisfied (4)	Very Satisfied (5)
Tutoring					
Advising					
Counseling					
Health services					

Response Formats

Open-Ended Questions

What did you like the most about your leadership seminar experience?

What was the *one* best feature of this program?

Write & Edit Items

1. Use precise, clear, and simple wording
2. Use simple sentences
3. Check items for ambiguity
4. Items should be as specific as possible
5. Items should ask for only one piece of information

Write & Edit Items

6. Items do not imply a desired answer
7. Wording should not be emotionally loaded, vaguely defined, or overly general
8. Items should not have a double meaning that may cause misunderstanding
9. Items should not use abbreviations that may be unfamiliar to respondents

Determine Item Sequence

1. First items should be clearly connected to the goals of the survey
2. Begin with non threatening but interesting items
3. Ask objective items before subjective items (i. e., "Have you participated in?" followed by "How would you rate.....?")
4. Use a funnel approach asking broad general items first followed by more specific items
5. When possible, make items independent (i. e., their answers do not affect each other)
6. Sensitive items should be asked well after the beginning of the survey but also before the end

Determine Item Sequence

7. Do not put important items at the end
8. (Maybe) Put easy-to-answer items like demographic items at the end
 - a. Helps to set respondents mind at ease as to why the demographic items are being asked
 - b. Respondents can see the connection between the items and their demographic information
 - c. If respondents refuse to answer demographic items, their other responses are still usable

Determine Item Sequence

9. Group items into logically coherent sections and make smooth transitions between sections
10. Arrange items:
 - a. From most familiar to least familiar
 - b. Chronologically (e. g., high school activities, college activities, post-graduate activities)
 - c. In logical order

Determine Physical Characteristics of Survey

Make the survey look professional

1. Use quality paper and quality printing
2. Make them into booklets if appropriate
3. Leave plenty of white space -- survey should be clear and uncluttered
4. Include 'THANK YOU' on survey

Determine Physical Characteristics of Survey

5. Make questions as clear as possible
6. Length itself, within reason, does not interfere with response rate
7. Should be long enough to cover the content but as short as possible
 - a. Keep items interesting
 - b. Make items relevant to the goals of the study
 - c. Limit the survey to essential items
8. Include name & address to contact if Qs.

Review and Revise Survey

- Take the survey yourself as if you were in the population being examined
- Seek reviews from colleagues
- (Maybe) Ask a reading specialist to examine the reading level
- Ask someone who knows nothing about the topic to review it for complete clarity

Pilot Test and Revise the Survey

- Invite a group of respondents from the population to a meeting
- Give them the cover letter and survey and ask them to complete it
- Time them to determine how long it takes to complete
- Collect the completed surveys which may be used for testing the data analysis procedures

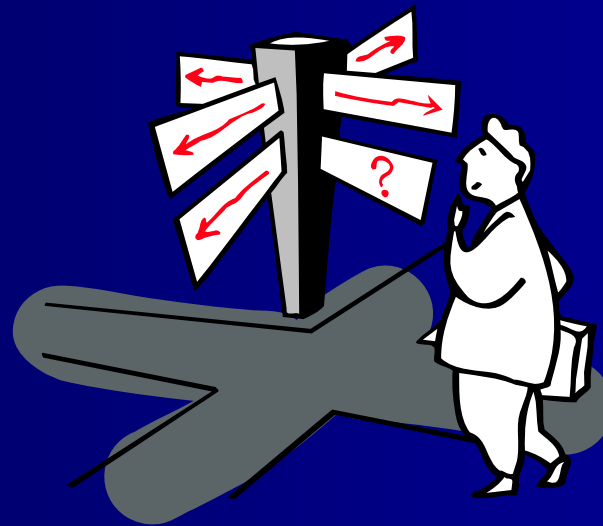
Pilot Test and Revise the Survey

- Give them a clean copy and lead a discussion in which they critique both the methodology and instrument section by section, item by item
- Have a researcher moderate the session and other researchers record comments
- Do not publicly explain or defend the instrument -- accept all comments as helpful

Pilot Test and Revise

- Pilot test the instrument and methodology (i.e., mail, telephone, or personal interview)
- Revise, Revise, Revise.....
- Pilot test the new version on a different group

Should I buy a published instrument or develop my own?



Existing Standardized Instruments

Pros

- Less time (printing, etc.)
- Proven item pool
- Reliability / Validity
- Clarity of directions
- Scoring
- Benchmark comparisons
- Data analysis
- Can purchase reports

Cons

- Cost
- Processing Delay
- Item pool may not fit
- Inappropriate norms for your group

Develop Your Own Instrument

Pros

- Relevant item pool
- Stakeholder involvement
- Lower Cost
- Processing control
- Data analysis control
- Report format

Cons

- Time consuming- development of items, formatting, printing, check reliability & validity, etc.)
- Need local technical expertise
- Unknown reliability/validity
- Have to watch length
- Risk poorly worded items

Evaluate Existing Instruments

- Does the title convey the content to respondents?
- Review content of EVERY item by item.
- Are items relevant to ALL respondents?
- Does manual report reliability ?
- Does manual report validity evidence?
- How appropriate is normative/benchmark data?
- If scored elsewhere, are results timely?
- If you will analyze, can that be done easily?
- Is the cost worth the benefit?

Small Group Activity

I. Critique sample surveys

II. In small group, develop the beginnings of a survey

Small Group Activity

■ I. Critique sample surveys

does it have title, are Qs well worded, grouped well, good instructions, due date included, is survey engaging, easy to complete, quality of paper, lots of white space

■ II. In small group, develop the beginnings of a survey

choose topic (1-2), think of main categories for Qs, choose method and sampling procedure, who will sign cover letter, determine #followups, who will analyze and write report, begin to draft Qs

Web Surveys



Web-Based Data Collection: Pros and Cons

■ Web Survey-Advantages

- No postage or printing costs
- Short data capture time
- No manual data entry
- Follow-ups easier
- Distribution easier

• Web Survey Disadvantages

- Introduction important
- Shorter surveys required
- Lower response rates
- Better for those comfortable with computers
- Higher levels of technical assistance required

Items to consider for web surveys:

- Limit characters and pitch size to accommodate as many types of monitors as possible; check for problems with wrap-around text
- Choose interesting first question
- Consider including PIN to limit access
- Use color, images, pop-ups conservatively
- Depending on group, may need to provide specific instructions for using radio buttons, pop-up windows, etc.

Sample Web Surveys (that can be viewed or have contact person)

- National Survey of Student Engagement
 - <http://www.indiana.edu/~nsse>
- American College Testing, Inc. Student Opinion Survey
 - <http://www.act.org/ess/web.html>
- U California Irvine - Bob Daly
 - <http://www.oas.uci.edu/presentations/ces97/>
- Virginia Tech – Alumni Survey, John Muffo
 - <http://www.aap.vt.edu/> (listed in instruments)

Sampling

Sample vs. Population

Types of Samples

Sample Size - Considerations

Sample vs. Population

Population = all of a particular group

- citizens of the United States
- students who attend Arizona State
- professors who work at Arizona State

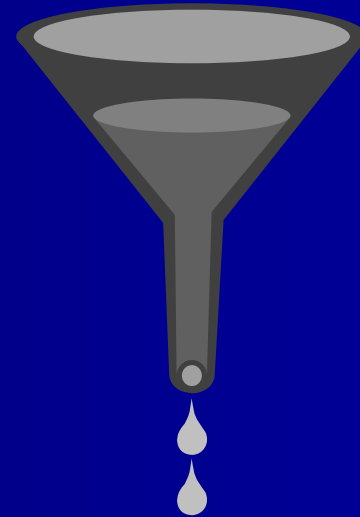
A survey of an entire population is a census

Sample vs. Census

- Sampling is a procedure that allows us to estimate/infer the characteristics of a population by surveying only a group of members
- Sampling saves resources (labor, \$)
- Good Sampling = Probability Sampling:
...only with probability samples can we estimate the amount of error resulting from surveying a group instead of the entire population

Sampling Procedures

- Full Population
- Random
- Select
- Systematic
- Snowball
- Stratified - and with oversampling of certain subgroups



Sample Size - Considerations

- Amount of sampling error that is tolerable - how accurate do our measurements need to be?
- Is target population 1000 or fewer? (If so, there are special considerations)
- Resources (mostly money)
- Number of categories by which data are to be analyzed (e.g. racial/ethnic group, class year, residence hall, etc.) - the more categories, the larger the sample needed

Sample Size - Considerations

- It takes fewer people to constitute a good sample of a fairly homogeneous population than it does to get a good sample of a heterogeneous population
- Samples should not be thought of as necessary proportions of populations. A sample of 382 people will result in the same degree of accuracy for a population of 50,000 as for a population of 100,000

How Large Should Your Sample Be?

$$N_s = \frac{(N_p) (p) (1-p)}{(N_p-1) (B/C)^2 + (p) (1-p)}$$

Where N_s = completed sample size needed for desired level of precision

N_p = size of population

P = proportion of population expected to choose of the two response categories

B = acceptable amount of sampling error; $.03 = +/-$ of true pop. value

C = Z statistics associated with confidence level

To calculate at 95% confidence level:

$$N_s = \frac{(1000) (.5) (.5)}{(1000-1) (.03/1.96)^2 + (.5) (.5)}$$

$$N_s = 517 \text{ completed surveys needed}$$

How many people to survey?

■ Random sample size	■ Sample error
196	7%
264	6%
384	5%
600	4%
1067	3%
2401	2%
9604	1%

The Costs of Survey Research

- Start up costs (e.g. consultant services, database development, conference attendance, faculty & staff time for organizational meetings).
- Support staff for administration & coordination.
- Instruments, printing, & postage (estimates range from \$10- \$20- \$50 per student, Rossman & El-Khawas, 1987 and Bauer experience)
- Analysis and distribution of the results.

Summary Points: Factors That May Affect Response Rates

- Articulate full set of goals for project (no hidden agendas)
- Choose appropriate method for data collection
- Unless you've been given strict directives, determine best method
- Determine needs— budget, timeline, person power
- Choose incentives that fit your population
- Do a pilot test
- Never underestimate the power of personalization
- Work with admissions, et al. to build climate supportive of survey research

The Costs If You Don't Assess!

- Inability to examine student/staff growth or satisfaction.
- No rationale for modifying existing programs.
- Inefficient decision & policy making.
- Institutional goal attainment and effectiveness is unclear.

And this may impact:

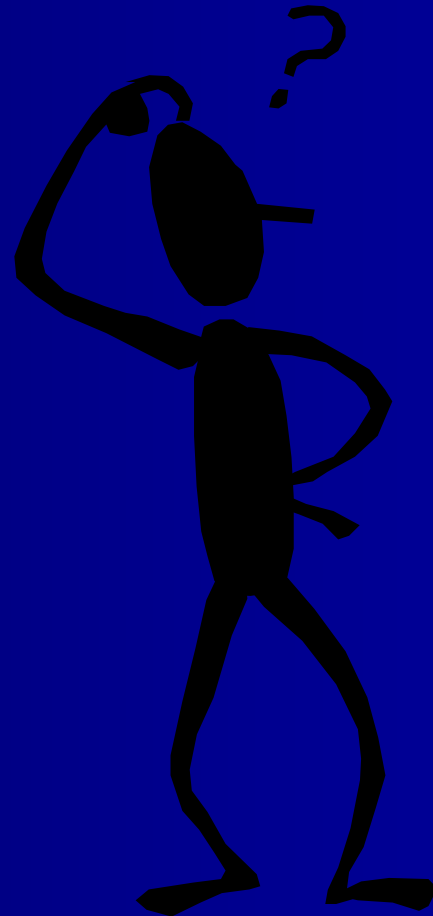
- Faculty, student, and staff satisfaction, morale, & commitment
- Admissions attractiveness
- Funding
- Accreditation

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Adapted from: Terenzini, P. (1987). Assessment with Open Eyes: Pitfalls in Studying Student Outcomes. *Journal of Higher Education*, 60, 644-664.

Questions?

Thank You!



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