The Survey Handbook

Questions about Questions

Statistical survey

Statistical survey is a method used to collect in a systematic way, information from a sample of individuals. Although most people are familiar with public opinion surveys that are reported in the press, most surveys are not public opinion polls (such as political polling), but are used for scientific purposes. Surveys provide important information for all kinds of research fields, e.g., marketing research, psychology, health professionals and sociology.[1] A survey may focus on different topics such as preferences (e.g., for a presidential candidate) , behavior (smoking and drinking behavior), or factual information(e.g., income), depending on its purpose. Since survey research is always based on a sample of the population, the success of the research is dependent on the representativeness of the population of concern (see also sampling (statistics)).

Modes of Data Collection

There are several ways of administering a survey. The choice between administration modes is influenced by several factors, including 1) costs, 2) coverage of the target population, 3) flexibility of asking questions, 4) respondents' willingness to participate and 5) response accuracy. Different methods create mode effects that change how respondents answer. The most common modes of administration are listed[2] :

Telephone

- use of interviewers encourages sample persons to respond, leading to higher response rates.[3]
- interviewers can increase comprehension of questions by answering respondents' questions.
- fairly cost efficient, depending on local call charge structure
- good for large national (or international) sampling frames
- some potential for interviewer bias (e.g. some people may be more willing to discuss a sensitive issue with a female interviewer than with a male one)
- cannot be used for non-audio information (graphics, demonstrations, taste/smell samples)
- unreliable for consumer surveys in rural areas where telephone density is low[4]
- three types:
  - traditional telephone interviews
  - computer assisted telephone dialing
  - computer assisted telephone interviewing (CATI)

Mail

- the questionnaire may be handed to the respondents or mailed to them, but in all cases they are returned to the researcher via mail.
- An advantage is, is that cost is very low, since bulk postage is cheap in most countries
- long time delays, often several months, before the surveys are returned and statistical analysis can begin
- not suitable for issues that may require clarification
- respondents can answer at their own convenience (allowing them to break up long surveys; also useful if they need to check records to answer a question)
- no interviewer bias introduced
- large amount of information can be obtained: some mail surveys are as long as 50 pages
- response rates can be improved by using mail panels
  - members of the panel have agreed to participate
  - panels can be used in longitudinal designs where the same respondents are surveyed several times

Online surveys

- can use web or e-mail. Web is preferred over e-mail because interactive HTML forms can be used
- often inexpensive to administer
- very fast results
- easy to modify
- response rates can be improved by using Online panels - members of the panel have agreed to participate
- honesty of responses can be an issue
- if not password-protected, easy to manipulate by completing multiple times to skew results
- data creation, manipulation and reporting can be automated and/or easily exported into a format that can be read by PSPP, DAP or other statistical analysis software
- data sets created in real time
- some are incentive based (such as Survey Vault or YouGov)
- may skew sample towards a younger demographic compared with CATI
- often difficult to determine/control selection probabilities, hindering quantitative analysis of data
- used in large scale industries.
- Advantage of survey development tools such as Qualtrics

Personal in-home survey

- suitable for locations where telephone or mail are not developed

Personal mall intercept survey

- shoppers at malls are intercepted - they are either interviewed on the spot, taken to a room and interviewed, or taken to a room and given a self-administered questionnaire
- socially acceptable - people feel that a mall is a more appropriate place to do research than their home
- potential for interviewer bias
- fast
- easy to manipulate by completing multiple times to skew results

How to write good survey questions

Rules for writing good questions are given in classical survey books such as Dillman (1978).[5] A summary of these rules was made by Ten Brink (1992).[6]

- Rule 1. Use correct spelling, punctuation and grammar style .
- Rule 2. Use specific questions. For example, “did you read a newspaper yesterday?”, instead of “did you read a newspaper?”.
- Rule 3. Use a short introduction to question of behaviors. In this way you cannot only refresh the memory of the respondent, but also explain what you mean with the concept you are using. For example, with wines, you may not only mean red or white wine, but liqueurs, cordials, sherries, tables wines and sparkling wines.
- Rule 4. Avoid the use of technical terms and jargon. An exception to this rule are questions that are made for a specific group of respondents, who regularly use jargon, e.g., doctors, lawyers and researchers.
- Rule 5. Avoid questions that do not have a single answer. For example, “do you like to walk and ride to school?”. Somebody who likes to walk, but does not like to cycle, cannot answer this question in the right way.
- Rule 6. Avoid negative phrasing, e.g., “should the school not be improved?”. This can lead to confusion and cost more effort to answer the question correctly.
- Rule 7. Avoid words and expressions with multiple-meanings, like any and just.
- Rule 8. Avoid stereotyping, offensive and emotionally loaded language. See also research ethics

Response formats

Usually, a survey consists of a number of questions that the respondent has to answer in a set format. A distinction is made between open-ended and closed-ended questions. An open-ended question asks the respondent to formulate his own answer, whereas a closed-ended question has the respondent pick an answer from a given number of options. The response options for a closed-ended question should be exhaustive and mutually exclusive. Four types of response scales for closed-ended questions are distinguished:

- Dichotomous, where the respondent has two options
- Nominal-polytomous, where the respondent has more than two unordered options
- Ordinal-polytomous, where the respondent has more than two ordered options
- (bounded)Continuous, where the respondent is presented with a continuous scale

A respondent's answer to an open-ended question can be coded into a response scale afterwards,[7] or analysed using more qualitative methods.

Advantages and disadvantages of surveys

Advantages

- As in sample study few units are to be examined detailed study of the survey can be done.
- As few units are to be examined the survey work requires less time. Thus in this way sample survey saves time.
- As few units are to be examined the survey work requires less money. Thus in this way sample survey saves lots of money.
- In sample survey few persons are required for the survey work so experts can be appointed for the survey. This will increase the reliability of the survey results.
- When the test is of destructive nature, sampling is only the way out. In such cases the population survey is not possible.
- A large area can be covered under survey in the available time and money.
- If proper method is employed under the survey the results obtained will represent the population adequately. Surveys are relatively inexpensive (especially self-administered surveys).
- Surveys are useful in describing the characteristics of a large population. No other method of observation can provide this general capability.
- They can be administered from remote locations using mail, email or telephone.
- Consequently, very large samples are feasible, making the results statistically significant even when analyzing multiple variables.
- Many questions can be asked about a given topic giving considerable flexibility to the analysis.
- Sample survey make measurement more precise by enforcing uniform definitions upon the participants.
- Sample survey that similar data can be collected from groups then interpreted comparatively (between-group study).
- Sample survey is also used to check the accuracy of the census data (population survey).
- Surveys are an efficient way of collecting information from a large number of respondents. Very large samplings are possible. Statistical techniques can be used to determine validity, reliability, and statistical significance.
- Surveys are flexible in the sense that a wide range of information can be collected. They can be used to study attitudes, values, beliefs, and past behaviors.
- Because they are standardized, they are relatively free from several types of errors.
- They are relatively easy to administer.
- There is an economy in data collection due to the focus provided by standardized questions. Only questions of interest to the researcher are asked, recorded, codified, and analyzed. Time and money is not spent on tangential questions.

- Sample surveys are usually cheaper to conduct than a full census.

Disadvantages

- They depend on subjects' motivation, honesty, memory, and ability to respond. Subjects may not be aware of their reasons for any given action. They may have forgotten their reasons. They may not be motivated to give accurate answers; in fact, they may be motivated to give answers that present themselves in a favorable light.
- Structured surveys, particularly those with closed ended questions, may have low validity when researching affective variables.
- Although the individuals chosen to participate in surveys are often randomly sampled, errors due to nonresponse may exist (see also chapter 13 of Adér et al. (2008) for more information on how to deal with nonresponsonders and biased data) . That is, people who choose to respond on the survey may be different from those who do not respond, thus biasing the estimates. For example, polls or surveys that are conducted by calling a random sample of publicly available telephone numbers will not include the responses of people with unlisted telephone numbers, mobile (cell) phone numbers, people who are unable to answer the phone (e.g., because they normally sleep during the time of day the survey is conducted, because they are at work, etc.), people who do not answer calls from unknown or unfamiliar telephone numbers. Likewise, such a survey will include a disproportionate number of respondents who have traditional, land-line telephone service with listed phone numbers, and people who stay home much of the day and are much more likely to be available to participate in the survey (e.g., people who are unemployed, disabled, elderly, etc.).
- Survey question answer-choices could lead to vague data sets because at times they are relative only to a personal abstract notion concerning "strength of choice". For instance the choice "moderately agree" may mean different things to different subjects, and to anyone interpreting the data for correlation. Even yes or no answers are problematic because subjects may for instance put "no" if the choice "only once" is not available.

Nonresponse reduction

Dilman (1978, chapter 7) gives detailed recommendations on how to reduce nonresponse in telephone and face-to-face surveys[8] :

- Advance letter. A short letter is sent in advance to inform the sampled respondents about the upcoming survey. The style of the letter should be personalized but not overdone. First it announces that a phone call will be made/ or an interviewer wants to make an appointment to do the survey face-to-face. Second the research topic will be describe. Last, an expression of the surveyor's appreciation to cooperate and an opening to ask questions on the survey.
- Training. The interviewers are thoroughly trained in how to ask respondents questions, how to work with computers and making schedules for callbacks to respondents who were not reached.
- Short introduction. The interviewer should always start with a short instruction about him or herself. She/he should give her name, the institute she is working for, the length of the interview and goal of the interview. Also it can be useful to make clear that you are not selling anything (De Leeuw, (2001) showed that this led to a slightly higher responding rate).[9]
- Respondent-friendly survey questionnaire. The question asked must be clear, non offensive and easy to respond to for the subjects under study.

Other methods to increase response rates

- brevity - single page if possible
- financial incentives
  - paid in advance
  - paid at completion
- non-monetary incentives
  - commodity giveaways (pens, notepads)
  - entry into a lottery, draw or contest
  - discount coupons
  - promise of contribution to charity
- preliminary notification
- foot-in-the-door techniques - start with a small inconsequential request
- personalization of the request - address specific individuals
- follow-up requests - multiple requests
- emotional appeals
- bids for sympathy
- convince respondent that they can make a difference
- guarantee anonymity
- legal compulsion (certain government-run surveys)

Survey Methodology and Research Institutes

- European Survey Research Association [10]
- Survey Research Methods Section of the American Statistical Association [11]
- Joint Program in Survey Methodology (JPSM) - University of Maryland-College Park and University of Michigan-Ann Arbor [12]
- Survey Research and Methodology - University of Nebraska-Lincoln [13]
- Program in Survey Methodology - University of Michigan-Ann Arbor [14]
- Social Statistics - University of Southampton [15]
- UK Longitudinal Studies Centre - University of Essex [16]
- Graduate Certificate in Survey Research - University of Connecticut [17]
- Diploma in Official Statistics - Hebrew University, Israel [18]
- The Social Science Research Laboratory (SSRL) - San Diego State University.
- Methodology and Statistics for the Social and Behavioral Sciences - Utrecht University, the Netherlands [19]
- Postgraduate Certificate/Diploma/M.Sc. in Social Research Skills with Specialisms - University of Ulster, Northern Ireland [20]
- Survey Design and Measurement Initiative [21]

Notes

[1] http://whatisasurvey.info/
[2] Mellenbergh, G.J. (2008). Chapter 9: Surveys. In H.J. Adèr & G.J. Mellenbergh (Eds.) (with contributions by D.J. Hand), Advising on Research Methods: A consultant's companion (pp. 183-209). Huizen, The Netherlands: Johannes van Kessel Publishing.
[3] Groves, R.M. (1989) *Survey Costs and Survey Errors*. New York: Wiley.
[4] When telephone surveys are not enough (http://www.synovate.com/changeagent/index.php/site/full_story/when_telephone_surveys_are_not_enough/)
[5] Dillman, D.A. (1978) Mail and telephone surveys: The total design method. New York: Wiley.
[6] Ten Brink (1992). Het schrijven van vragen[item writing]. Unpublished master's thesis, Vakgroep Psychologische Methodenleer, Department of Psychology,University of Amsterdam, the Netherlands.
[7] Mellenbergh, G.J. (2008). Chapter 9: Surveys. In H.J. Adèr & G.J. Mellenbergh (Eds.) (with contributions by D.J. Hand), Advising on Research Methods: A consultant's companion (pp. 183-209). Huizen, The Netherlands: Johannes van Kessel Publishing.
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[9] De Leeuw, E.D. (2001). I am not selling anything: Experiments in telephone introductions. Kwantitatieve Methoden, 22,41-48.
[10] http://www.surveymethodology.eu/home/
[11] http://www.amstat.org/sections/srms/
[12] http://www.jpsm.umd.edu
[13] http://sram.unl.edu/
[14] http://www.isr.umich.edu/gradprogram/
[15] http://www.socsci.soton.ac.uk/socstats/Study_Opportunities/Postgraduate/default.php?NavContext=Discipline
[16] http://www.iser.essex.ac.uk/survey/ulsc
[17] http://dpp.uconn.edu/graduate/graduate_certificate_survey.html
[18] http://www.stat.huji.ac.il/diploma.htm
[19] http://www.fss.uu.nl/master/mands
[20] http://campusone.ulster.ac.uk/course_details.cgi/32
[21] http://www.surveynet.ac.uk/sdmi

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- Dillman, D.A. (1978) Mail and telephone surveys: The total design method. New York: Wiley.

Further reading

- Leung, Wai-Ching (2001) "Conducting a Survey" (http://archive.student.bmj.com/back_issues/0601/education/187.html), in Student BMJ, (British Medical Journal, Student Edition), May 2001

External links

- Surveys (http://www.dmoz.org/Science/Social_Sciences/Methodology/Survey/) at the Open Directory Project
- OmniPHP(tm) SurveyEngine (http://surveyengine.sourceforge.net/) - An open source advanced survey development application that allows creating any type of web-based survey.
- Nonprofit Research Collection on the Use of Surveys in Nonprofit Research (http://www.issuelab.org/closeup/Jan_2009/) Published on IssueLab

- Survey Question Bank (http://www.surveynet.ac.uk/sqb)
- Designing surveys - a basic guide (http://www.snapsurveys.com/surveys/)

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