

# Biostatistics

## Survey Design

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# Surveys

(A Thumbnail Introduction)

- “ A type of research to collect the data and facts about some certain situation or issue from the target population existing in surroundings having relevance to the nature of study.”
- “ Survey research is the research strategy to study the relationships and characteristics.”



- “surveys are based on the desire to collect information (usually by questionnaire) about a well defined issue or situation (hypothesis) from the well defined population”
- Surveys are method of data collection in which information is gathered through oral or written questioning”



- “Data collection through survey involves persuasion of respondents and then on some level social interaction between the respondents and the research interviewer”
- A team effort of many people having diverse skills.
- surveys are now used in all areas of life. For example business, politics, agriculture, industry, education, media etc.



# Why surveys? (Purpose & Uses)

- To provide someone with information (to describe the situations).
- To explain the situations (analytical surveys).
- Problem identification & solving.
- To measure the change.
- To study attitudes, behavior and habits.



- To examine the cause-effect relationship.
- To study the characteristics.
- To formulate a hypothesis.
- To test a hypothesis.
- Decision making.




# Types Of Surveys:

## Descriptive Survey

“A descriptive survey attempts to picture or document current conditions or attitudes that is, to describe **what exists** at the moment”

Examples:

- Audience survey to determine the program taste.
- To study the changing values, life style by the effect of some special type of program.



## Analytical Surveys

**“An analytical survey attempts to describe and explain **WHY** certain situations exist. Here we examine two, or more variable to test our research hypothesis”**

Examples:

- How life-style effects the t.v. viewing habits.
- Impact of war games on teenagers.





# Some more types...

- **1- Factual surveys.**  
(respondents act as reporters).
- **2- Opinion surveys.**  
(respondents expresses his view point opinion).
- **3-Interpretative surveys.**  
(interpretation )  
Example: Why do you read newspapers?



# Steps in the Process of Survey Research

## Step 1:-

- Develop Hypotheses.
- Decide on type of survey (mail, interview, telephone).
- Write survey questions.
- Decide on response categories.
- Design layout.



## **Step 2:-**

- Plan how to record data.
- Pilot test survey instrument.
- Revise the instrument.



## **Step 3:-**

- Decide on target population.
- Get sampling frame.
- Decide on sampling size.
- Select sample.



## Step 4:-

- Locate respondents.
- Conduct interviews.
- Carefully record data.



## **Step 5 :-**

- Enter data into computers.
- Recheck all data.
- Perform statistical analysis on data.



## **Step 6:-**

- Describe methods and findings in research report.
- Present findings to others for critique and evaluation.



# Three Methods of survey

- Mailed questionnaire.
- Personal interview.
- Telephone interview.





# The Mailed Questionnaire

- It is one of the most important data collection survey methods.
- Mail survey involves sending a cover letter and a questionnaire to a specific person.





# Advantages

- Low cost.
- Reduction in biasing errors.
- Greater anonymity.
- Accessibility.
- Less time & trained staff.



# Disadvantages

- Requires simple questions.
- No probing opportunity.
- No control over WHO fills?
- Low response rate.

# Personal Interviews

Interviewing is a form of questioning characterized by the fact that it employs verbal questioning.

Together with the questionnaire , interviews make up the survey method, which is one of the most popular technique of data collection.





# Advantages

- Flexibility in questioning.
- Control over the interview situation.
- High response rate.
- Collection of supplement data.




# Disadvantages

- Higher cost.
- Interviewer bias.
- Respondent's hesitation on sensitive topics.
- Greater staff requirement.

# Telephone Interview

Telephone interview demonstrates the same structural characteristics as standard interviewing technique, except that it is conducted by telephone.





# Advantages

- Moderate cost.
- Less time consumption.
- Higher response rate.
- Quality .....(Supervision , Recording)





# Disadvantages

- Hesitation to discuss sensitive topics.
- The “Broken-Off ”interviews.
- No supplement information.



# Mailed Questionnaire

## Introduction

- Mail survey involves sending a cover letter and a questionnaire to a specific person.
- The cover letter states the purpose sponsor instructions and time of return.
- The questionnaire---- totally self explanatory, clear and simple.




# Advantages of Questionnaire

- Less expensive (no need of interviewers).
- Quick results.
- Less opportunity for bias and errors.
- Wide coverage
- Respondents may use personal records.
- Collection of data about sensitive topics.
- Less time consumption.
- High response rate.



## Disadvantages

- Many factors effect on response rate
- Low education.
- Disliking to write.
- Disliking to read.
- No interest in the topic.
- No further explanations
- Lack of understanding of respondents.
- We receive minimum amount of in formations against open ended questions.



## Disadvantages

- No probing and clarification.
- No identity of the respondent.(some one else can also fill).
- No supervision-→ partial responses.