

## Survey research

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## Survey

Defined

- A data collection method based on:
  - asking questions and
  - recording self-reported answers
  - in a structured manner

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## Survey

Advantages

- In general, survey offers:
  - Standardized questions
  - Ease of administration
  - Collect data about the unobservable
  - Ease of tabulation and analysis
  - Ability to study group differences
  - Flexible method
  - Low cost options are available
  - Accurate results

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## Survey

Disadvantages

- It also comes with shortcomings
  - Self-reported responses
  - Difficult to deal with sensitive topics
  - Heavy resource utilization
    - Time
    - Money
    - Human

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## Total error

Types and sources

- Consider the total error
  - Sampling error is the result of studying a sample rather than the entire population. It is a random error
  - Systematic error stems from poor design or execution in research. It results in bias that distorts the findings with a bias in one direction

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## Systematic error

- Administrative error
  - Manifests itself in the design or the execution of research. For example, poor sample frame may result in bias
- Respondent error
  - Error introduced to the study by the respondent

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## Administrative error

Causes

- Poor design and administration caused by
  - Confusion
  - Neglect
  - Omission

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## Administrative error

Areas

- Data processing error
- Sample selection error
- Interviewer error
- Interviewer cheating

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## Respondent error

What they say or do not say

- Nonresponse error
  - Respondents declining to participate results in self selection bias. Consequently, over or under representation may result
- Response bias
  - Result from respondents giving wrong information

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## Response bias

Slanted answers

- Occurs when respondents give answers that do not reflect the truth
  - Deliberate falsification
  - Unconscious misrepresentation

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## Response bias

Sources

- Acquiescence bias
- Extremity bias
- Interviewer bias
- Auspices bias
- Social desirability bias

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## Survey

Survey mode

- Four main categories
  - “In-home” personal interviews  
*Interviewer goes to the respondent, can be “in-office”*
  - Mall intercept personal interviews  
*Respondent comes to the interviewer*
  - Telephone surveys
  - Mail surveys  
*Computer assisted or administered surveys cut across all modes. Computerized personal interviews or telephone surveys as well as electronically distributed “mail” surveys*

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## Criteria

Comparing survey modes

### ■ Cost

- Total cost of obtaining the desired number of completed questionnaires
- A significant determinant of mode selection
- Affected by response rate, cost of delivery

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## Criteria

Comparing survey modes

### ■ Speed

- The time required to complete the desired number of questionnaires
- Includes the time spent with the respondents as well as time spent reaching them

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## Criteria

Comparing survey modes

### ■ Versatility

- Ability of the instrument to collect various kinds of data and ask different types of questions
  - Question types
  - Showing samples
  - Incorporating taste tests, etc.

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## Criteria

Comparing survey modes

### ■ Response rate

- The ratio of completed questionnaires to the total eligible ones
- Influences cost

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## Criteria

Comparing survey modes

- Quantity of data (questionnaire length)
  - Total number of questions that the selected mode reasonably supports
  - Affects the amount of information that can be collected from each respondent
  - Longer questionnaires can collect more data

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## Criteria

Comparing survey modes

- Response bias
  - Deliberate or unintentional distortion of truth by the respondents
  - May stem from
    - the presence of an interviewer
    - desire to please the interviewer*
    - hostility toward the interviewer*
    - embarrassment*
    - wrong person being interviewed
    - lack of recall

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## Door-to-door

Personal interviews

- Interviewers are face-to-face with the respondents, in-home or in-office
- Advantages:
  - Cooperation, participation, feedback
  - Versatile, flexible, show samples
  - Long interview, many questions
  - Completeness of questionnaires
  - Probing possible

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## Door-to-door

Personal interviews

- Disadvantages
  - Cost
  - Moderate speed
  - Interviewer influence (bias)
  - Lack of respondent anonymity

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## Mall-intercept

Personal interviews

- Respondents are selected at a high traffic area, usually a shopping mall
- Advantages
  - Quickly collect data
  - Can ask different kinds of questions, visual or physical inputs, versatile
  - Moderate cost
  - Moderate questionnaire length

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## Mall-intercept

Personal interviews

- Disadvantages
  - Respondents may not have time
  - High interviewer induced bias
  - Low respondent anonymity

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## Telephone

Personal interview

- Interviewers ask the questions and receive the answers on the phone
- Advantages
  - Central facility, computer assisted
  - High control
  - Rapid collection of data
  - Lower cost

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## Telephone

Personal interview

- Disadvantages
  - Short interview duration
  - Difficult to gain cooperation
  - Limited length of questionnaire
  - Moderate interviewer induced bias
  - Moderate respondent anonymity

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## Mail

Self administered surveys

- Questionnaires are mailed to and from the respondents
- Advantages
  - Can be lengthy, can get much information
  - No interviewer induced bias
  - High respondent anonymity
  - Low cost
  - Wide reach
  - Low response bias

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## Mail

Self administered surveys

- Disadvantages
  - Low response rate
  - Not very flexible
  - Slow speed

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## How to reduce errors

Methods to deal with potential errors

- To reduce response bias
  - Word questions carefully
  - Match interviewer to the audience
  - Do not tax recall and memory
  - Provide ease of expression and answer
  - Handle sensitive topics with care

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## How to reduce errors

Nonresponse in person administered surveys

- To reduce nonresponse
  - Design the best instrument
  - Time the interview well
  - Gain cooperation and maintain it
  - Be courteous

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## How to reduce errors

Nonresponse in self administered surveys

- To reduce nonresponse
  - Design the best instrument
  - Pre-qualify mail survey respondents
  - Write an appealing cover letter
  - Offer incentives
  - Follow-up
  - Re-sample the nonrespondents
  - Analyze the impact of nonresponse and ignore if it will not make a difference