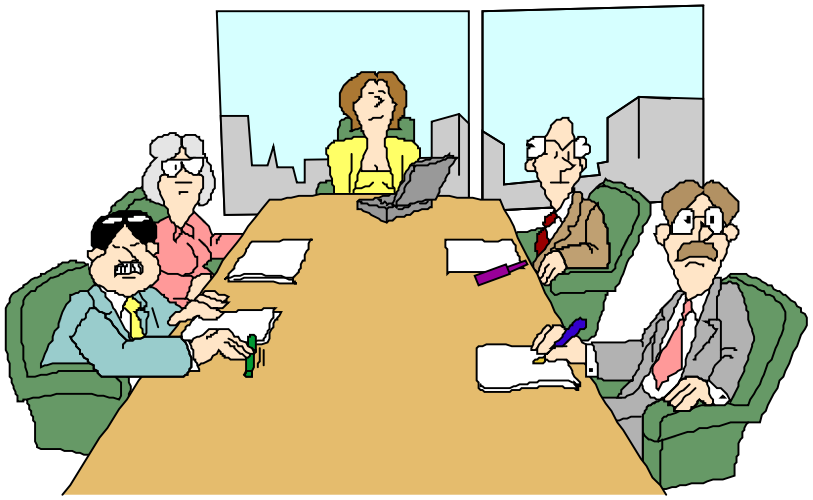
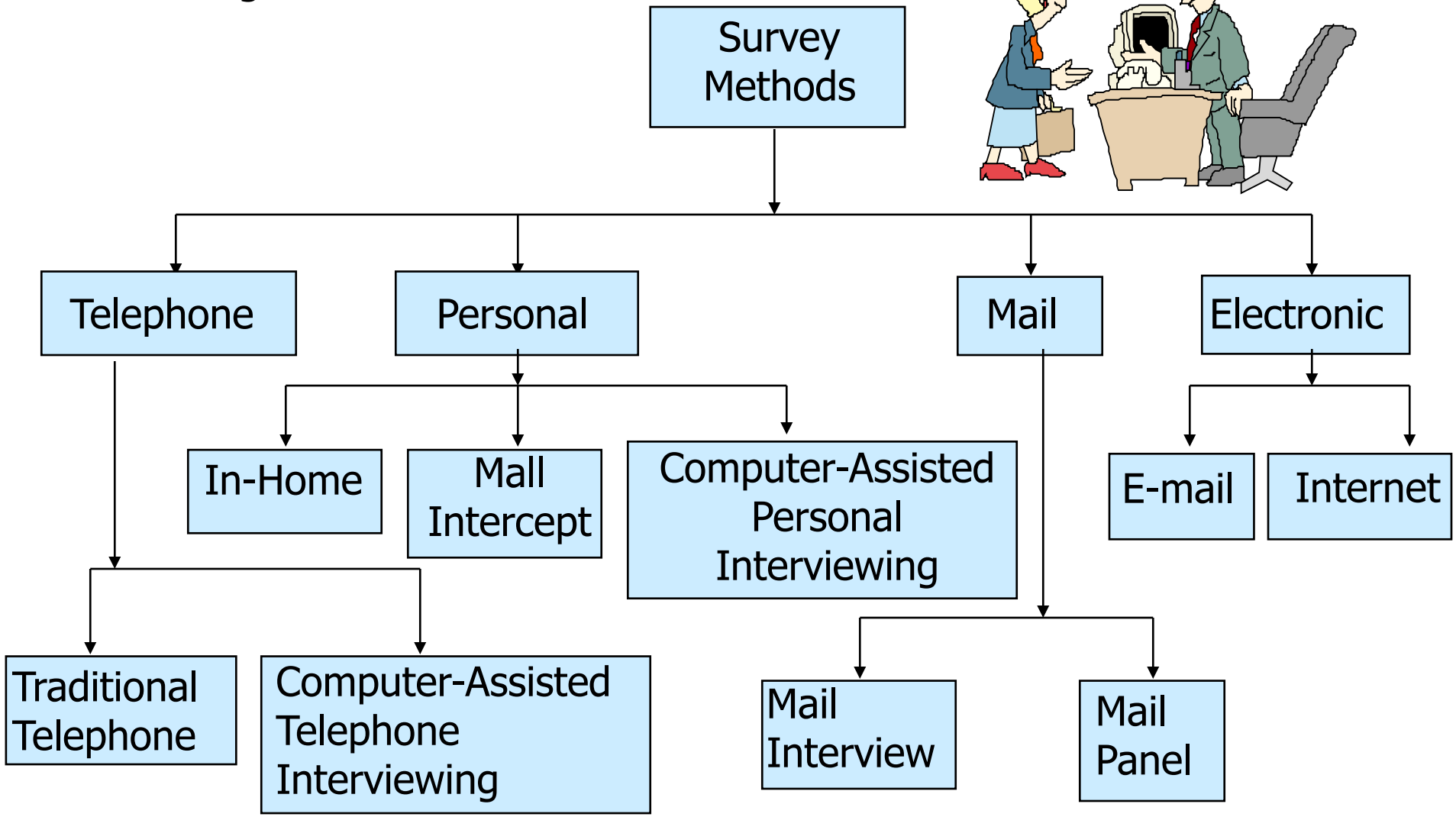
Chapter Six

Descriptive Research Design: Survey and Observation



A Classification of Survey Methods

Fig. 6.1



Survey Method

- uses a structured questionnaire
  - formal instrument
  - questions are asked in a pre-arranged order
- advantages: simple to administer, yields reliable data, coding and analysis are simple
- disadvantages: respondents may be unwilling or unable to answer, wording of questions is not easy

Modes of Administering Surveys

- telephone interviews - traditional, CATI
- personal interviews - in-home, mall intercept, CAPI
- mail interviews - traditional, mail panels
- electronic - e-mail or Internet

Traditional Telephone Interviews

- phone a sample of respondents and ask a series of questions
- use a paper-pencil questionnaire
- nationwide telephone interviewing from a central location has been made feasible with WATS service

Computer-assisted telephone interviews

- uses a computerized questionnaire
- administered to respondents over the telephone
- record answers directly into the computer
- only one question at a time appears on the computer screen
- questionnaire can be personalized based on responses
- feasible to prepare interim and update reports

Personal in-home interviews

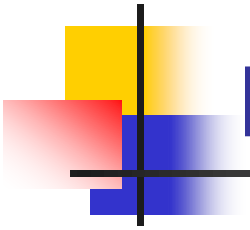
- respondents are interviewed in their homes
- not in use today because of high cost, although still popular in other countries
- used by syndicated firms

Mall-intercept personal interviews

- mall shoppers are intercepted and brought to test facilities in the mall
- is more efficient
- several hundred mall research facilities
- useful when the respondent has to see, handle or consume the product before they can give meaningful information

Computer-assisted personal interviews

- respondent sits in front of a computer terminal and answers a questionnaire on the CRT screen
- increases the involvement and interest level of the respondent
- interviewer is usually present to guide



Mail interview

- questionnaires are mailed to pre-selected respondents
- send the whole package - cover letter, return envelope, incentive
- no verbal interaction between the researcher and the respondent
- uses mailing lists (appropriate and accurate)

Mail Panels

- comprises of a large, nationally representative sample of households that has agreed to participate in periodic mail questionnaires, product tests and telephone surveys
- marketing research companies maintain these panels
- are very useful for implementing longitudinal designs

E-Mail Interviews

- generate a list of e-mail addresses
- survey is written within the body of the message
- uses pure text (ASCII) to represent the questionnaire
- data entry is required when survey is received
- somewhat limited: skip patterns, randomization, length

Internet Interviews

- uses HTML
- survey is posted on a Web site
- respondents recruitment: on-line, mail or telephone, visitors
- several advantages: can prevent more than one response, skip patterns can be programmed, validate responses, complex survey stimuli can be built

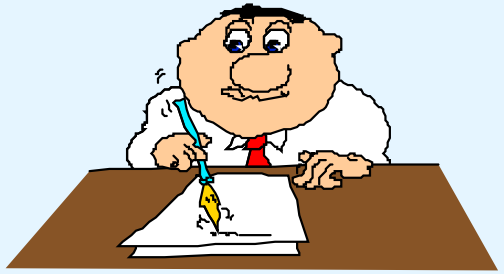
Some Decisions Related to the Mail Interview Package

Table 6.1

Outgoing Envelope			
Outgoing envelope: size, color, return address			
Postage	Method of addressing		
Cover Letter			
Sponsorship	Type of appeal	Postscript	
Personalization	Signature		
Questionnaire			
Length	Size	Layout	Format
Content	Reproduction	Color	Respondent anonymity
Return Envelope			
Type of envelope	Postage		
Incentives			
Monetary versus non-monetary		Prepaid versus promised amount	

Sample Mailing Lists

List Title	Number on List	Price
Advertising agencies	3892	$45/M
Banks, branches	11089	$85/M
Boat owners	4289601	$50/M
Chambers of Commerce	6559	$45/M
Personal computer owners	2218672	Inquire
Families	76000000	Inquire
Hardware wholesalers	7378	$45/M
Magazines, consumers	4119	$45/M
Photographic, portrait	33742	$45/M
Sales executives	190002	$55/M
Wives of professional men	1663614	$60/M
YMCA's	1036	$85



* Price shown is per 1000 names (/M), except where noted.

Criteria for Evaluating Survey Methods

Flexibility of Data Collection

- The flexibility of data collection is determined primarily by the extent to which the respondent can interact with the interviewer and the survey questionnaire.

Diversity of Questions

- The diversity of questions that can be asked in a survey depends upon the degree of interaction the respondent has with the interviewer and the questionnaire, as well as the ability to actually see the questions.

Use of Physical Stimuli

- The ability to use physical stimuli such as the product, a product prototype, commercials, or promotional displays during the interview.

Criteria for Evaluating Survey Methods

Sample Control

- Sample control is the ability of the survey mode to reach the units specified in the sample effectively and efficiently.

Control of the Data Collection Environment

- The degree of control a researcher has over the environment in which the respondent answers the questionnaire.

Control of Field Force

- The ability to control the interviewers and supervisors involved in data collection.

Quantity of Data

- The ability to collect large amounts of data.

Flexibility of Data Collection

- extent to which the respondent can interact with the interviewer and the survey questionnaire
- highest flexibility: personal interview methods
  - face-to-face
  - administer complex questionnaires
  - explain/clarify difficult questions
  - utilize unstructured questionnaires

Continued..

- Moderate flexibility: traditional telephone interview method
  - more difficult to use unstructured techniques, ask complex questions or obtain in-depth answers to open-ended questions
- somewhat higher flexibility: CATI, CAPI, Internet surveys
  - use of an interactive mode
  - personalize and use skip patterns easily
- Low flexibility: mail surveys, mail panels, e-mail surveys
  - no interaction possibility

Diversity of Questions

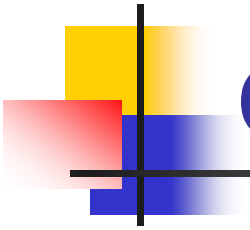
- depends on the degree of interaction with the interviewer and the respondent's ability to actually see the questions
- most diversity: in-home, mall intercept, CAPI
- moderate to high: Internet surveys
- less diversity: mail surveys, mail panels, e-mail surveys
- least diversity: traditional telephone and CATI
  - the respondent cannot see the questions

Use of Physical Stimuli

- when you want respondents to view a stimuli (e.g., product, ad) and react to it
- personal interviews conducted at central locations (mall, CAPI) are the best
- moderate: mail surveys, mail panels
- limited: telephone methods, e-mail surveys

Sample Control

- ability to direct the survey to the right person and get that person's cooperation
- Best: in-home interviews
  - difficult to find respondents during the day
  - safety concerns
- Moderate: mall intercept interviews
  - interviewer has control over which person to intercept
  - but limited to mall shoppers (frequent)



Continued ..

- Moderate to high: telephone methods
  - offer access to geographically-dispersed respondents and hard-to-reach areas
  - problems in using a telephone directory as a sampling frame (use of RDD)
- Low: mail survey
  - access may not be a problem, but getting cooperation would be
  - mail panel may be better

Continued ..

- very low: Internet survey research
  - general population is a poor fit
  - ability to meet quotas restricted
  - may not control people taking a survey multiple times

Control of the Data Collection Environment

- by the researcher
- greatest control: personal interviews conducted at central locations
- moderate to high - in-home personal interviews
- moderate - telephone methods
- little control - all other methods

Control of Field Force

- eliminates field force problems: mail, e-mail and Internet surveys
- moderate control: telephone methods, mall intercept and CAPI
  - supervision is possible
- low control: in-home personal interviews (e.g., Census Bureau)

Quantity of Data

- Largest: in-home personal interviews (up to 75 minutes)
  - social relationship
  - home environment
  - less effort for the respondent
- Large: mail panels
- Moderate: mall intercept and CAPI (< 30 minutes)
- Moderate: mail surveys
- Most limited: telephone methods (< 15 minutes)

Random Digit Directory Designs

Fig. 6.2

Adding a Constant to the Last Digit

An integer between 1 and 9 is added to the telephone number selected from the directory. In plus-one sampling, the number added to the last digit is 1.

Number selected from directory: 404-953-3004 (exchange-block). Add one to the last digit to form 404-953-3005. This is the number to be included in the sample.

Randomizing the r Last Digits

Replace the r (r = 2, 3, or 4) last digits with an equal number of randomly selected digits.

Number selected from directory: 404-881-1124. Replace the last four digits of the block with randomly selected numbers 5, 2, 8, and 6 to form 404-881-5286.

Random Digit Directory Designs

Fig. 6.2

Two-Stage Procedure

The first stage consists of selecting an exchange and telephone number from the directory. In the second stage, the last three digits of the selected number are replaced with a three-digit random number between 000 and 999.

Cluster 1

Selected exchange: 636
Selected number: 404-636-3230
Replace the last three digits (230) with randomly selected 389 to form 404-636-3389.
Repeat this process until the desired number of telephone numbers from this cluster is obtained.

Criteria for Evaluating Survey Methods

Response Rate

- Survey response rate is broadly defined as the percentage of the total attempted interviews that are completed.

Perceived Anonymity

- Perceived anonymity refers to the respondents' perceptions that their identities will not be discerned by the interviewer or the researcher.

Social Desirability/Sensitive Information

- Social desirability is the tendency of the respondents to give answers that are socially acceptable, whether or not they are true.

Criteria for Evaluating Survey Methods

Potential for Interviewer Bias

- The extent of the interviewer's role determines the potential for bias.

Speed

- The total time taken for administering the survey to the entire sample.

Cost

- The total cost of administering the survey and collecting the data.

Response Rate

- % of total attempted interviews that are completed
- Highest: personal (> 80%)
- Moderate: telephone (60-80%)
- Poor: Mail surveys (< 15%)
- how to improve response rates ??

Perceived Anonymity

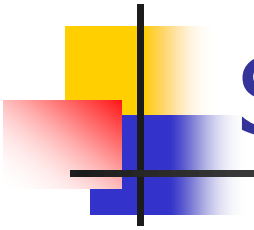
- High: mail surveys, mail panels, Internet surveys
- Low: personal interviews
- Moderate: telephone methods, e-mail survey

Social Desirability

- tendency of the respondent to give answers that are socially acceptable, whether or not they are true
- least susceptible: mail surveys, panels, Internet surveys
- moderate: telephone methods
- less moderate: e-mail
- most susceptible: personal methods

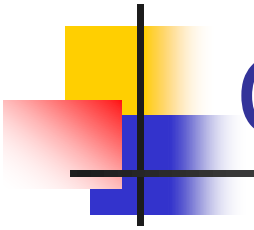
Interviewer Bias

- selection of respondents, manner of asking questions, and recording answers
- extent of interviewer's role is important
- high: In-home and mall intercept interviews
- moderate: telephone methods
- low: computer-assisted interviews
- free of bias: mail methods, Internet surveys



Speed

- fastest: Internet survey, e-mail survey
- next: telephone methods
- next: mall-intercept and computer-assisted interviews
- slower: in-home personal interviews (dead time)
- slowest: mail surveys
- somewhat faster: mail panels



Cost

- Lowest: Internet survey
- Highest: in-home personal interviews

A Comparative Evaluation of Survey Methods

Table 6.2

Criteria	Phone/ CATI	In-Home Interviews	Mall-Intercept Interviews	CAPI	Mail Surveys	Mail Panels	E-Mail	Internet
Flexibility of data collection	Moderate to high	High	High	Moderate to high	Low	Low	Low	Moderate to high
Diversity of questions	Low	High	High	High	Moderate	Moderate	Moderate	Moderate to high
Use of physical stimuli	Low	Moderate to high	High	High	Moderate	Moderate	Low	Moderate
Sample control	Moderate to high	Potentially high	Moderate	Moderate	Low	Moderate to high	Low	Low to moderate
Control of data collection environment	Moderate	Moderate to high	High	High	Low	Low	Low	Low
Control of field force	Moderate	Low	Moderate	Moderate	High	High	High	High
Quantity of data	Low	High	Moderate	Moderate	Moderate	High	Moderate	Moderate
Response rate	Moderate	High	High	High	Low	Moderate	Low	Very Low
Perceived anonymity of the respondent	Moderate	Low	Low	Low	High	High	Moderate	High
Social desirability	Moderate	High	High	Moderate to High	Low	Low	Moderate	Low
Obtaining sensitive information	High	Low	Low	Low to moderate	High	Moderate to High	Moderate	High
Potential for interviewer bias	Moderate	High	High	Low	None	None	None	None
Speed	High	Moderate	Moderate to high	Moderate to high	Low	Low to moderate	High	Very high
Cost	Moderate	High	Moderate to high	Moderate to high	Low	Low to moderate	Low	Low

Observation Methods
Structured versus Unstructured Observation

- For **structured observation**, the researcher specifies in detail what is to be observed and how the measurements are to be recorded, e.g., an auditor performing inventory analysis in a store.

- In **unstructured observation**, the observer monitors all aspects of the phenomenon that seem relevant to the problem at hand, e.g., observing children playing with new toys.

Observation Methods
Disguised versus Undisguised Observation

- In **disguised observation**, the respondents are unaware that they are being observed. Disguise may be accomplished by using one-way mirrors, hidden cameras, or inconspicuous mechanical devices. Observers may be disguised as shoppers or sales clerks.

- In **undisguised observation**, the respondents are aware that they are under observation.

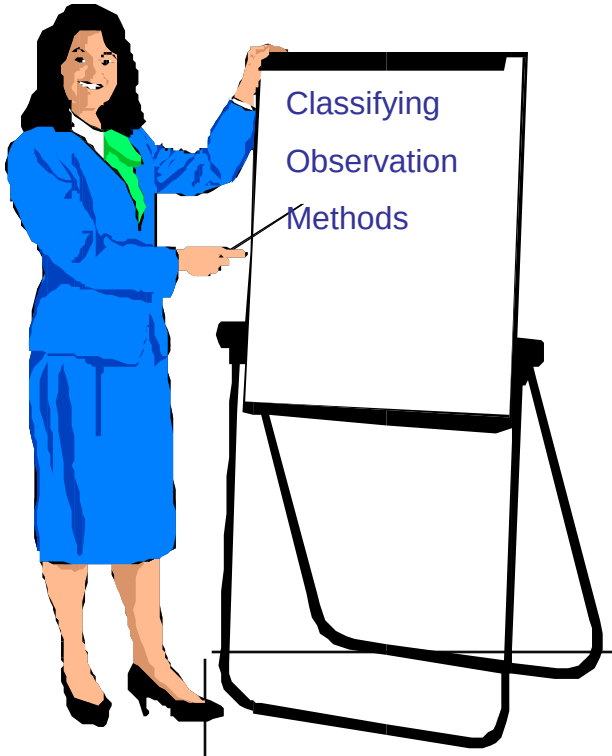
Observation Methods
Natural versus Contrived Observation

- **Natural observation** involves observing behavior as it takes places in the environment. For example, one could observe the behavior of respondents eating fast food in Burger King.

- In **contrived observation**, respondents' behavior is observed in an artificial environment, such as a test kitchen.

A Classification of Observation Methods

Fig. 6.3



Observation Methods

- **Personal Observation**
- **Mechanical Observation**
- **Audit**
- **Content Analysis**
- **Trace Analysis**

Observation Methods
Personal Observation

- A researcher observes actual behavior as it occurs.
- The observer does not attempt to manipulate the phenomenon being observed but merely records what takes place.
- For example, a researcher might record traffic counts and observe traffic flows in a department store.

Observation Methods
Mechanical Observation

Do not require respondents' direct participation.

- the AC Nielsen audimeter
- turnstiles that record the number of people entering or leaving a building.
- On-site cameras (still, motion picture, or video)
- Optical scanners in supermarkets

Do require respondent involvement.

- eye-tracking monitors
- pupilometers
- psychogalvanometers
- voice pitch analyzers
- devices measuring response latency

Observation Methods
Audit

- The researcher collects data by examining physical records or performing inventory analysis.
- Data are collected personally by the researcher.
- The data are based upon counts, usually of physical objects.
- Retail and wholesale audits conducted by marketing research suppliers were discussed in the context of syndicated data in Chapter 4

Observation Methods
Content Analysis

- The objective, systematic, and quantitative description of the manifest content of a communication.
- The unit of analysis may be words, characters (individuals or objects), themes (propositions), space and time measures (length or duration of the message), or topics (subject of the message).
- Analytical categories for classifying the units are developed and the communication is broken down according to prescribed rules.

Observation Methods
Trace Analysis

Data collection is based on physical traces, or evidence, of past behavior.

- The selective erosion of tiles in a museum indexed by the replacement rate was used to determine the relative popularity of exhibits.
- The number of different fingerprints on a page was used to gauge the readership of various advertisements in a magazine.
- The position of the radio dials in cars brought in for service was used to estimate share of listening audience of various radio stations.
- The age and condition of cars in a parking lot were used to assess the affluence of customers.
- The magazines people donated to charity were used to determine people's favorite magazines.
- Internet visitors leave traces which can be analyzed to examine browsing and usage behavior by using cookies.

A Comparative Evaluation of Observation Methods

Table 6.3

Criteria	Personal Observation	Mechanical Observation	Audit Analysis	Content Analysis	Trace Analysis
Degree of structure	Low	Low to high	High	High	Medium
Degree of disguise	Medium	Low to high	Low	High	High
Ability to observe in natural setting	High	Low to high	High	Medium	Low
Observation bias	High	Low	Low	Medium	Medium
Analysis Bias	High	Low to Medium	Low	Low	Medium
General remarks	Most flexible	Can be intrusive	Expensive	Limited to commu-nications	Method of last resort

Relative Advantages of Observation

- They permit measurement of actual behavior rather than reports of intended or preferred behavior.
- There is no reporting bias, and potential bias caused by the interviewer and the interviewing process is eliminated or reduced.
- Certain types of data can be collected only by observation.
- If the observed phenomenon occurs frequently or is of short duration, observational methods may be cheaper and faster than survey methods.

Relative Disadvantages of Observation

- The reasons for the observed behavior may not be determined since little is known about the underlying motives, beliefs, attitudes, and preferences.
- Selective perception (bias in the researcher's perception) can bias the data.
- Observational data are often time-consuming and expensive, and it is difficult to observe certain forms of behavior.
- In some cases, the use of observational methods may be unethical, as in observing people without their knowledge or consent.

It is best to view observation as a complement to survey methods, rather than as being in competition with them.

A Comparative Evaluation of Survey Methods for International Marketing Research

Table 6.4

Criteria	Telephone	Personal	Mail	Electronic
High sample control	+	+	-	-
Difficulty in locating respondents at home	+	-	+	+
Inaccessibility of homes	+	-	+	+
Unavailability of a large pool of trained interviewers	+	-	+	+
Large population in rural areas	-	+	-	-
Unavailability of maps	+	-	+	+
Unavailability of current telephone directory	-	+	-	+
Unavailability of mailing lists	+	+	-	+
Low penetration of telephones	-	+	+	-
Lack of an efficient postal system	+	+	-	+
Low level of literacy	-	+	-	-
Face-to-face communication culture	-	+	-	-
Poor access to computers & Internet	?	+	?	-

Note: A (+) denotes an advantage, and a (–) denotes a disadvantage.