Chapter Four

Secondary Data and Big Data Analytics

LEARNING OBJECTIVES

1. Understand the advantages and disadvantages of secondary data.
2. Comprehend data mining and behavioral targeting.
3. Learn the advantages of big data analytics, how to make it actionable, and the importance of data visualization.

Secondary Data vs. Primary Data

Secondary Data:

- Data than have been previously gathered.

Primary Data:

- New data gathered to help solve the problem under investigation.

Online Secondary Data Resources

www.marketingpower.com

factfinder.census.gov

www.bis.gov/cex

www.bea.gov

www.bts.gov

bizjournals.com

www.ciesin.com

www.cdc.gov/nchs

www.clickz.com

dismal.com

easidemographics.com

www.econdata.net

freedemographics.com

harrisinfo.com

www.hoovers.com

www.opinionresearch.com

www.ipl.org/div/aon

www.mra-net.org

mediamark.com

www.prb.org

www.quirks.com

serviceintelligence.com

socialsecurity.gov

www.census.gov

www.ers.usda.gov

worldopinion.com

www.usadata.com

www.fedstats.gov

www.wikipedia.org

Online Secondary Data Resources

US Federal Statistics

SBA

US Small Business Administration

US Bureau of Labor Statistics

US Census Bureau

abcNEWS

FOX NEWS channel

MSNBC HOME

USA TODAY

CNN

CBSNEWS

THE GALLUP ORGANIZATION

THE WALL STREET JOURNAL. ONLINE

The New York Times ON THE WEB

The Washington Post

External (Secondary) Data

- **You work for Whirlpool, a major supplier of kitchen appliances.**
- **Go to *http://www.nahb.com***
- **Describe what types of information at this site might be of interest to Whirlpool.**

Discussion topic

1.Go to the National Opinion Research Center at www.norc.org and describe what new reports are available for researchers.

Note: Please clearly state the name of the reports. You can select any areas that you are interested. You only need to provide a short description of one or two reports.

2.Go to www.Nielsen.com and describe 1-2 interesting things you find from the website (anything that you feel interesting, such as their product/service, industry trend, new measurement etc.)

The Balancing Act with Secondary Data

POTENTIAL ADVANTAGES

- **Time**
- **Cost**

POTENTIAL DISADVANTAGES

- **Fit**
- **Accuracy**

Disadvantages of Secondary Data

- Problems of fit:
  - Different units of measurement
    - e.g., consumer income (individual, household, family)
  - Different class definitions

Before 5 Years	After 5 Years
2500-5000	5000-6000
5001-7500	6001-7000
7500-10000	7001-10000

  - Outdated

Internal versus External (Secondary) Data

- Internal Data
  - Data that originate within the organization for which the research is being done
  - (e.g., sales invoice, salespeople's expense account)
- External Data
  - Data that originate outside the organization for which the research is being done
  - (e.g., financial records, scanner data)

Most studies should begin with a search for internal data.

Discussion Scenario

- Pam Hathaway and Ashley Shafer founded **The Art Terrace** five years ago.
- Idea: to acquire unique decorative art pieces from around the world and market them to local affluent home owners.
- Market response: positive.
- Product assortment available online later.
- A small sales staff handles in-store and telephone inquiries, orders, and return credit requests.
- It also works to establish and maintain affiliate relationships with larger higher-traffic websites.

Discussion Scenario

- Having experienced growth levels beyond their wildest dreams, the partners are now concerned they have gotten too busy to properly monitor market conditions.
- In a recent meeting they agreed to hire some employees to do some secondary research for them.
- Assuming you were among these employees, what internal secondary data sources would you access and analyze?

Internal Secondary Data Sources

- Do these apply to The Art Terrace?
  - Cash register receipts
  - Sales invoices
  - Financial records
  - Credit memos
  - Salespersons' call reports
  - Salespersons' customer/prospect records
  - Salespersons' expense accounts
  - Warranty cards
  - Previous marketing research reports

Chapter Five

Qualitative Research

LEARNING OBJECTIVES

1. Define qualitative research and understand its popularity.
2. Learn about focus groups, how to conduct them, and their advantages and disadvantages.
3. Compare other forms of qualitative research with focus groups.
4. Appreciate the future of qualitative research.

The Nature of Qualitative Research

Qualitative:

- Research whose findings are not subject to quantification or quantitative analysis. Its research conclusions are not based on precisely, measurable statistics but on more subjective observations and analysis.

Quantitative:

- Research that uses mathematical analysis. Typically research analysis is done using measurable and numeric standards.

Qualitative vs. Qualitative Research

EXHIBIT 5.1 Qualitative versus Quantitative Research

	Qualitative Research	Quantitative Research
Types of questions	Probing	Limited probing
Sample size	Small	Large
Amount of information from each respondent	Substantial	Varies
Requirements for administration	Interviewer with special skills	Interviewer with fewer special skills or no interviewer
Type of analysis	Subjective, interpretive	Statistical, summation
Hardware	Sound recorders, projection devices, video recorders, pictures, discussion guides	Questionnaries, computers, printouts, mobile devices
Degree of replicability	Low	High
Researcher training	Psychology, sociology, social psychology, consumer behavior, marketing, marketing research	Statistical, decision models, decision support systems, computer programming, marketing, marketing research
Type of research	Exploratory	Descriptive or causal

General Limitations of Qualitative Research

1. Attitudinal, perceptual, and belief differences revealed during qualitative research might not be easily measured. Quantitative research will more precisely measure these differences.

2. Qualitative research is often not statistically representative of the general population. Although qualitative results might give you a good idea about the population, they do not allow you to precisely gauge the populations' responses based on the limited sample typical of qualitative research.

3. Anyone can purport to be an expert.

Focus Groups

Focus Group Defined:

• A group of eight to 12 participants who are led by a moderator in an in-depth discussion on one particular topic or concept.

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Focus Group

Focus Groups

- Extremely popular research technique
- Format
  - Typically 8-12 people
  - Homogeneous within group
  - 1.5 to 2 hours in length
  - Sessions recorded and transcribed
- Key person: the moderator

Advantages of Focus Groups

1. Interactions among respondents can stimulate new ideas and thoughts.

2. Opportunities to observe customers or prospects through one-way mirrors.

3. They can be executed more quickly than many other research techniques.

Focus group video

- **Fun video -Silicon Valley S02E06**
  - https://www.youtube.com/watch?v=Sx1J3S6vUJ8
- **Conducting a Focus Group**
  - **https://www.youtube.com/watch?v=Auf9pkuCc8k**

Disadvantages of Focus Groups

1.Managers can be misled instead of informed.

2.Recruiting for focus group participants can be a problem.

Focus Group Exercise

- Topic: How students spend their entertainment dollars and what additional entertainment opportunities they would like to see offered.
  - Create discussion guide
  - Moderator
  - Participants

Other Qualitative Methods

Depth Interviews (IDIs):

One-on-one interviews that probe and elicit detailed answers to questions, often using non-directive techniques to uncover hidden motivations.

Advantages of IDIs

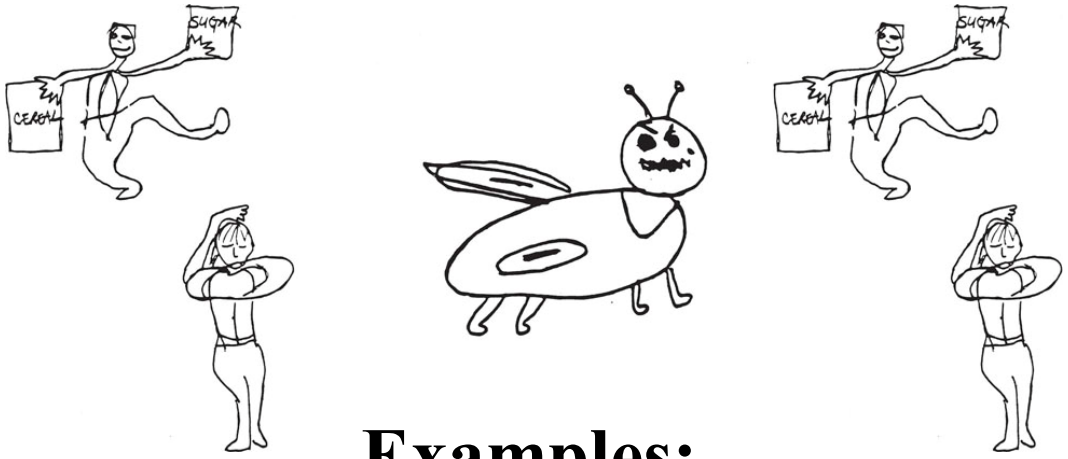
- Group pressure is eliminated
- Respondent feels important and truly wanted
- Respondent attains a heightened state of awareness
- Encourages the revelation of new information
- Respondents can be questioned at length to reveal feelings and motivations
- Individual interviews allow greater flexibility to the direction of questioning
- The interviewer becomes more sensitive to nonverbal feedback
- A singular viewpoint can be obtained without influence from others
- Interviews can be conducted anywhere

Disadvantages of IDIs

- Costs in terms of time and money
- Less client involvement
- Do not cover much material in one day
- Do not allow for a group discussion and resolution
- Some respondent reactions cannot be generated from a one-on-one session

Other Qualitative Methods

Projective Tests: Techniques that tap into respondents' deepest feelings by having them project those feelings into an unstructured situation.



Examples:

- Word Association Test
- Analogy
- Personification
- Sentence and Story Completion Test
- Cartoon Tests and Photo Sorts
- Customer Drawings
- Storytelling
- Third Person Technique

Projective Methods

- Word association
  - Example: First word that comes to mind for “Just Do It ”
  - *What comes to your mind when I mentioned the word breakfast?*

Projective Methods

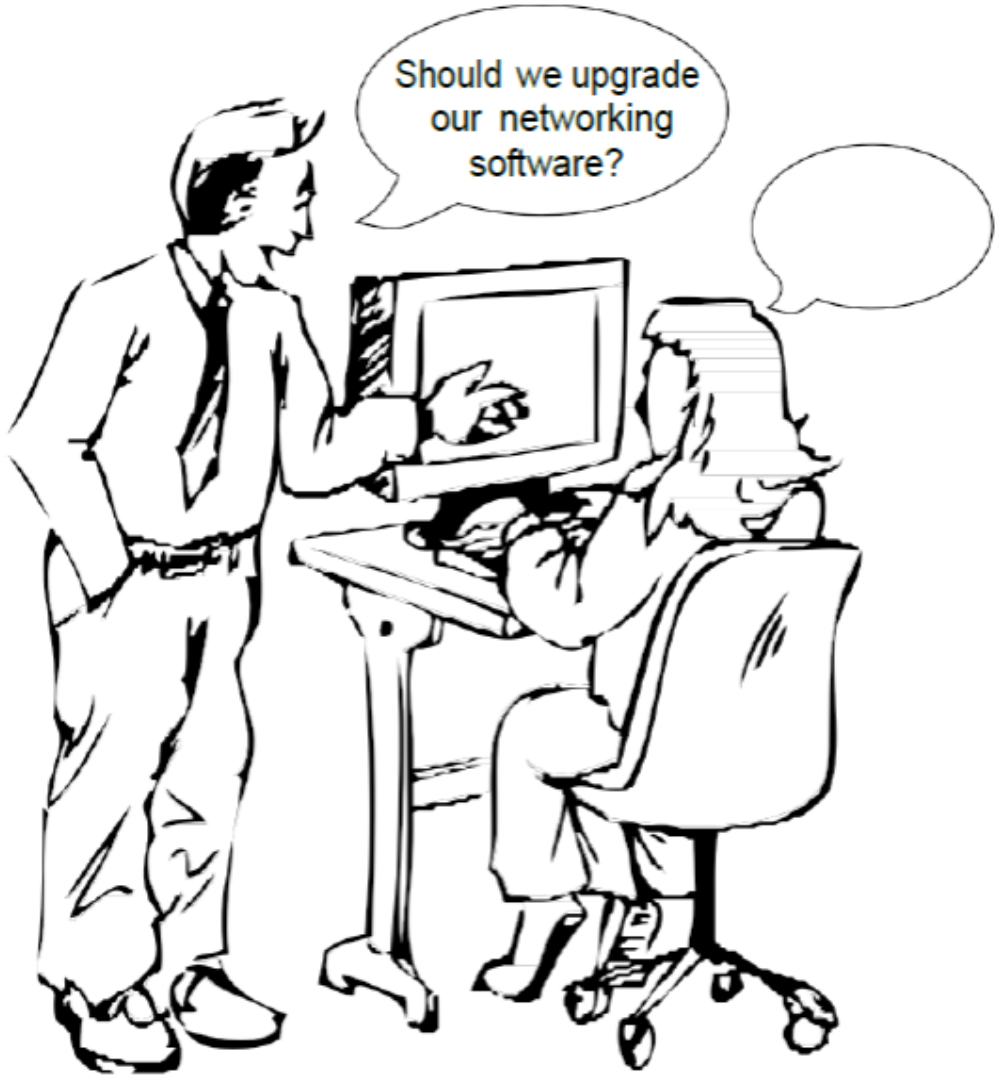
- Sentence and Story Completion Test
  - Example:
  - A man who drinks light beer is …
  - People who visit museums are...
  - I would describe a perfect marriage as one where…

Projective Methods

- Sentence completion
  - *People who are concerned about pollution …*
    - "care about the future" versus "are just tree-huggers who want to run up my taxes"
  - *When I think of living in a city, I….*
    - " can't help but think of the smog over L.A." versus "think about cruising my car downtown on Saturday night!"

Projective Methods

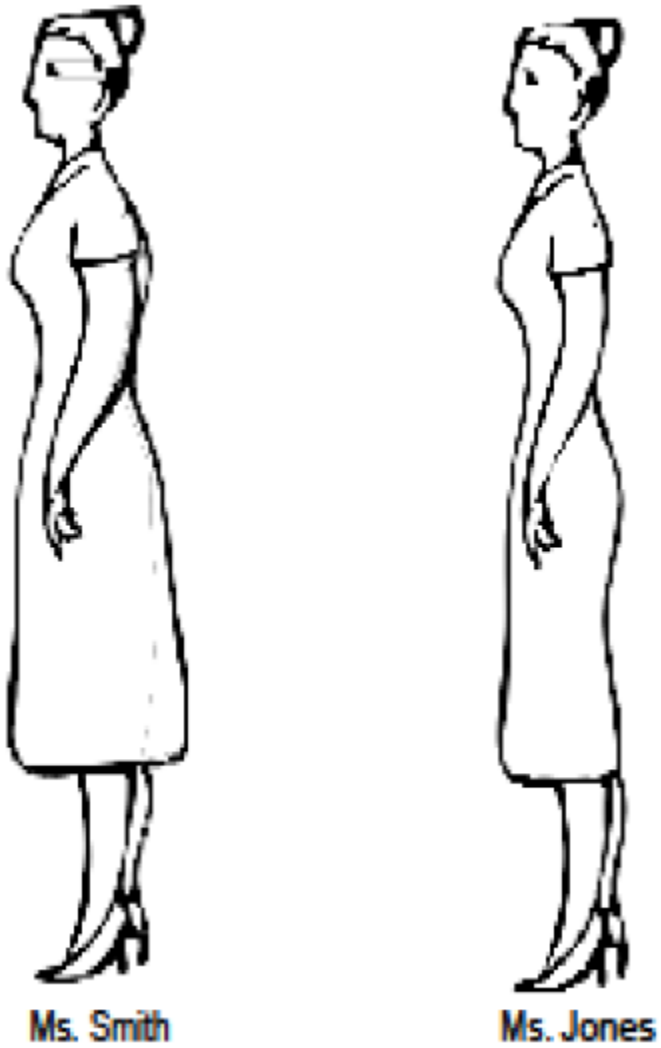
- Storytelling/Picture interpretation
  - Example: *Tell me a story about this picture*


Should we upgrade our networking software?

Projective Methods

- “Let’s wait until the upgrade has been out a few more months because new upgrades always contain bugs”
- “It’s critical to upgrade now to maintain compatibility.”

Do you believe Ms. Smith or Ms. Jones drinks more milk?



Ms. Smith

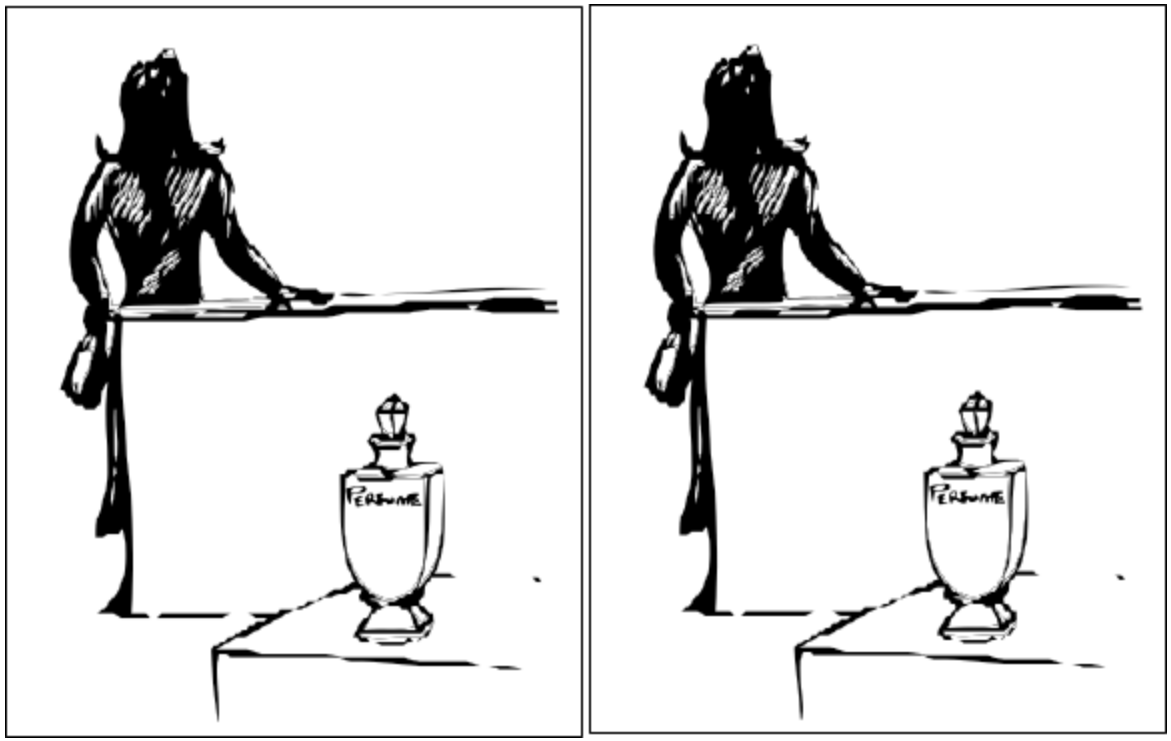
Ms. Jones

Projective Methods

- *Do you believe Ms. Smith or Ms. Jones drinks more milk?*

- 'Ms. Smith'
  - She appears older, less active, and dowdy.
  - If such responses were typical, then milk producers may have chosen to reposition their product so it would be more attractive to younger and more active consumers.

Projective Methods



$10

$75

Description 1

- A woman goes to the store, sees the $10.00 perfume, and knows that such inexpensive perfume can’t be any good.

- Later, she sees the $75.00 perfume, and

reluctantly acknowledges that good perfume is very pricey. She then buys the more expensive perfume.

Description 2

- A woman sees the $10.00 perfume and buys it because she believes all perfume is of similar quality, so if it smells OK to you, then you should buy it.
- Later, when she sees the $75.00 perfume, she wonders about women who would be silly enough to pay 10 times more for the same thing in a slightly more attractive package.

Projective Methods

- Third-person role playing
  - Study participants either project themselves into a third person and respond accordingly,
  - Imagine they are a third person and then describe themselves.

Projective Methods

- Third-person role playing
  - A classic motivation research study.
  - Two similar samples of 50 housewives.
  - All received a shopping list, a list written by a housewife,
  - Asked to describe her.
  - The lists were identical except for one product:
    - one list included Nescafe Instant Coffee, and the other list included Maxwell House Coffee.

Projective Methods

Mid-1950s

- Instant coffee
  - lazy, a poor purchase planner, and a poor spouse;
- Ground coffee
  - hardworking, a good purchase planner, and a good spouse.
- Lukewarm opinions about instant coffee in the mid-1950s.

Projective Methods

In 1970

- Instant coffee
  - modern, thrifty, and a good spouse.
- Ground coffee
  - old fashioned and a poor spouse.
- Consumers' attitudes changed markedly during the 15 years between studies.
- Difficult to uncover the findings through more structured questionnaires.

Projective Methods

Brand Personification

Objective: When you want to discover the likes and dislikes to a certain brand/product/idea/application etc.

- *Now I would like you to imagine that I have this wand, like Harry Potter (*aww Emma Watson*).*
- *And I have this magical power that would transform whatever that this wand touches into a person.*
- *And if this brand X came alive and became a person, what kind of person would it be?*

Projective Methods

Brand Personification

Demographic: *how old? Is it a he/she? What's their job?*

Lifestyle: *What do they like to do? Their outfit? Where do they live?*

Values: *what is important to them? What do they value?*

Relationship: *if this is a person, how is your relationship with this person? How do you feel about them?*

Projective Methods

Brand Personification

- *If this brand is a celebrity, who would it be? Why?*
- *If this brand is at a party, who is he/she? Who is he/she mingle with? Would you approach him/her?*

Projective Methods

Brand Personification

- **Friendliness.**
- **Trustworthiness.**
- **Expertise.**
- **Enthusiasm.**

Projective Methods

Projective Methods

Chapter Six

Traditional Survey Research

LEARNING OBJECTIVES

1. Understand the reasons for the popularity of survey research.
2. Learn about the types of errors in survey research.
3. Distinguish the types of surveys.
4. Gain insight into the factors that determine the choice of particular survey methods.

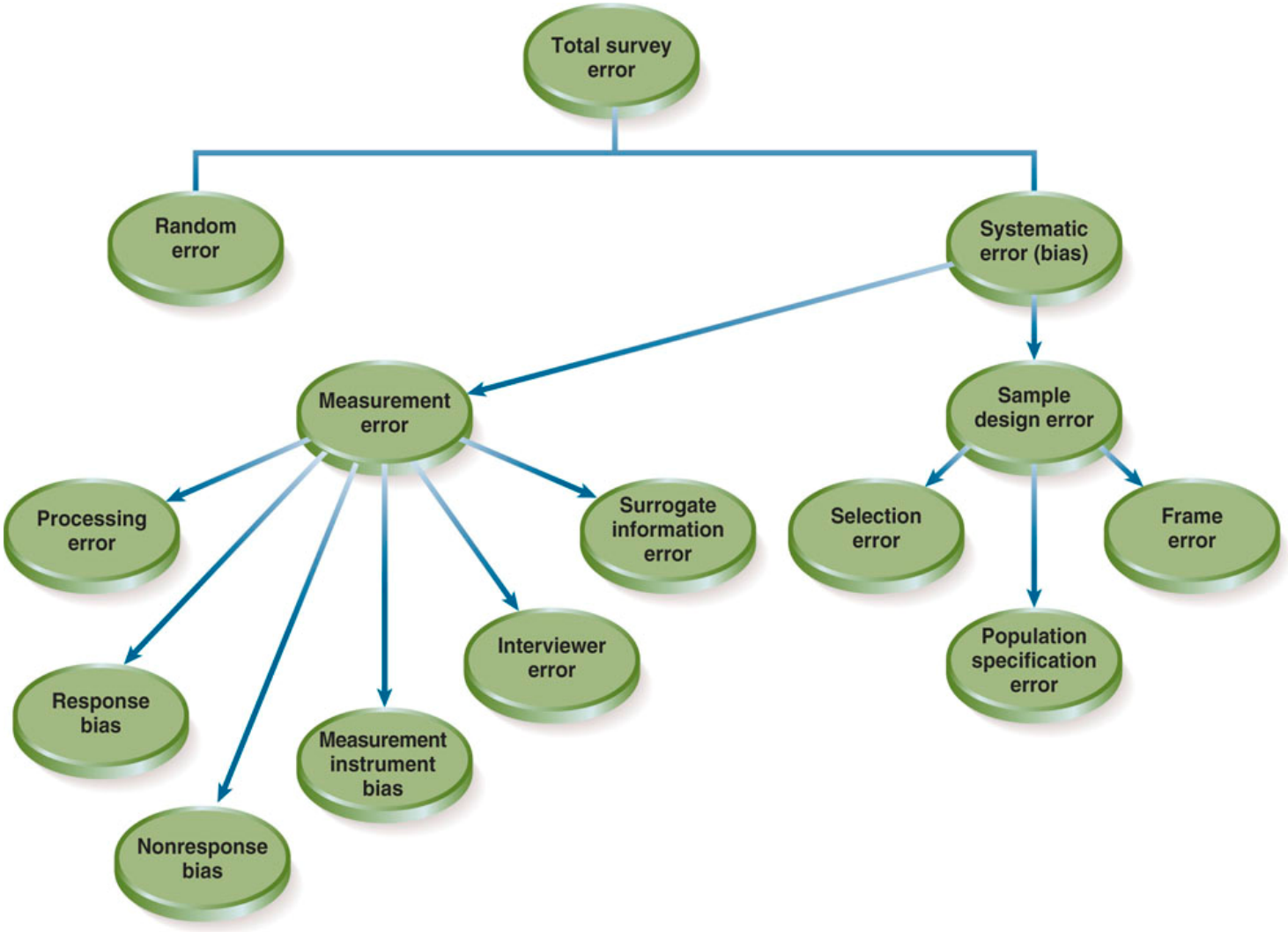
Why is Survey Research so Popular?

- ***The need to know why.*** For example, why did they buy or not buy a particular brand? What did they like or dislike about it? Who or what influenced them?

- ***The need to know how.*** How did they make the decision? What time period passed? What did they examine or consider? When and where was the decision made? What do they plan to do next?

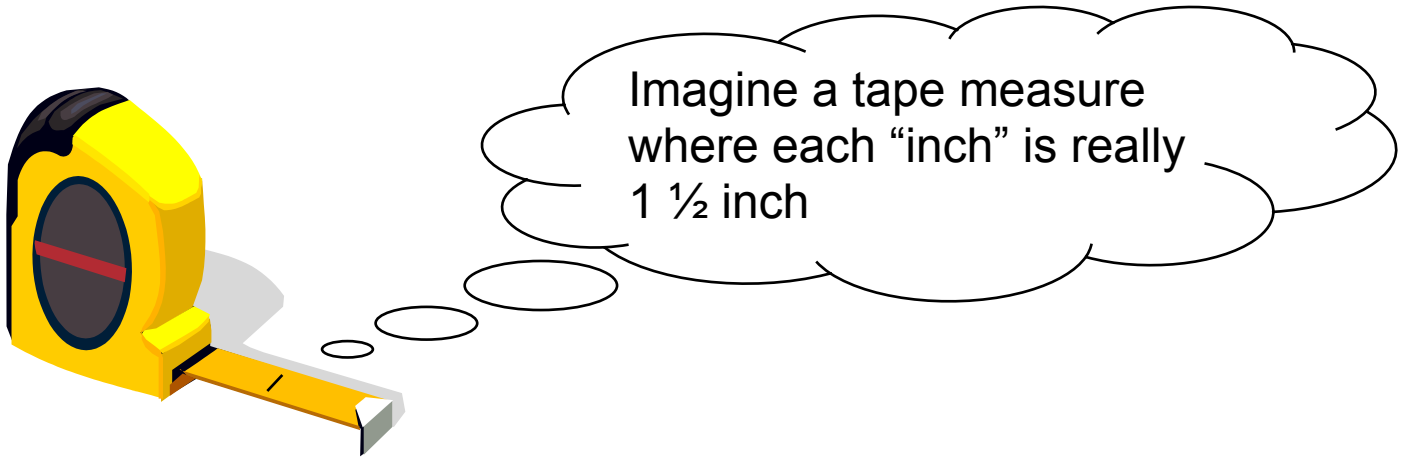
- ***The need to know who.*** Who is the person, and who played an influencing role in the decision making process, from a demographic or lifestyle perspective?

Survey Research Error



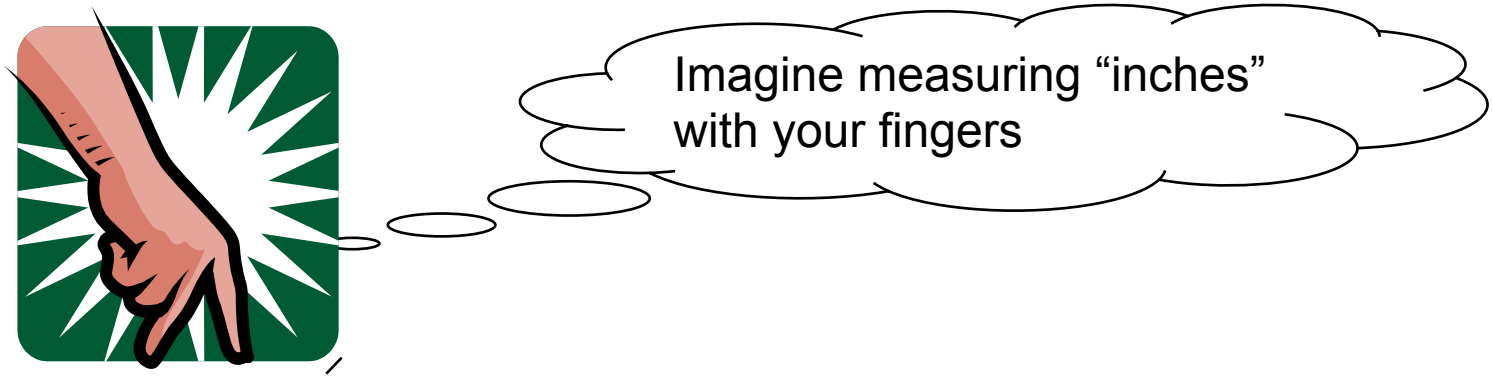
Two Types of Error

- Systematic Error
  - Error that is constant.



Two Types of Error

- Random Error
  - Error due to temporary aspects.



Survey Research Error

Key Definitions

Random Error or Random Sampling Error:

- Error that results from chance variation.
- Can not be eliminated.
- Can be reduced by increasing sample size.

Chance Variation:

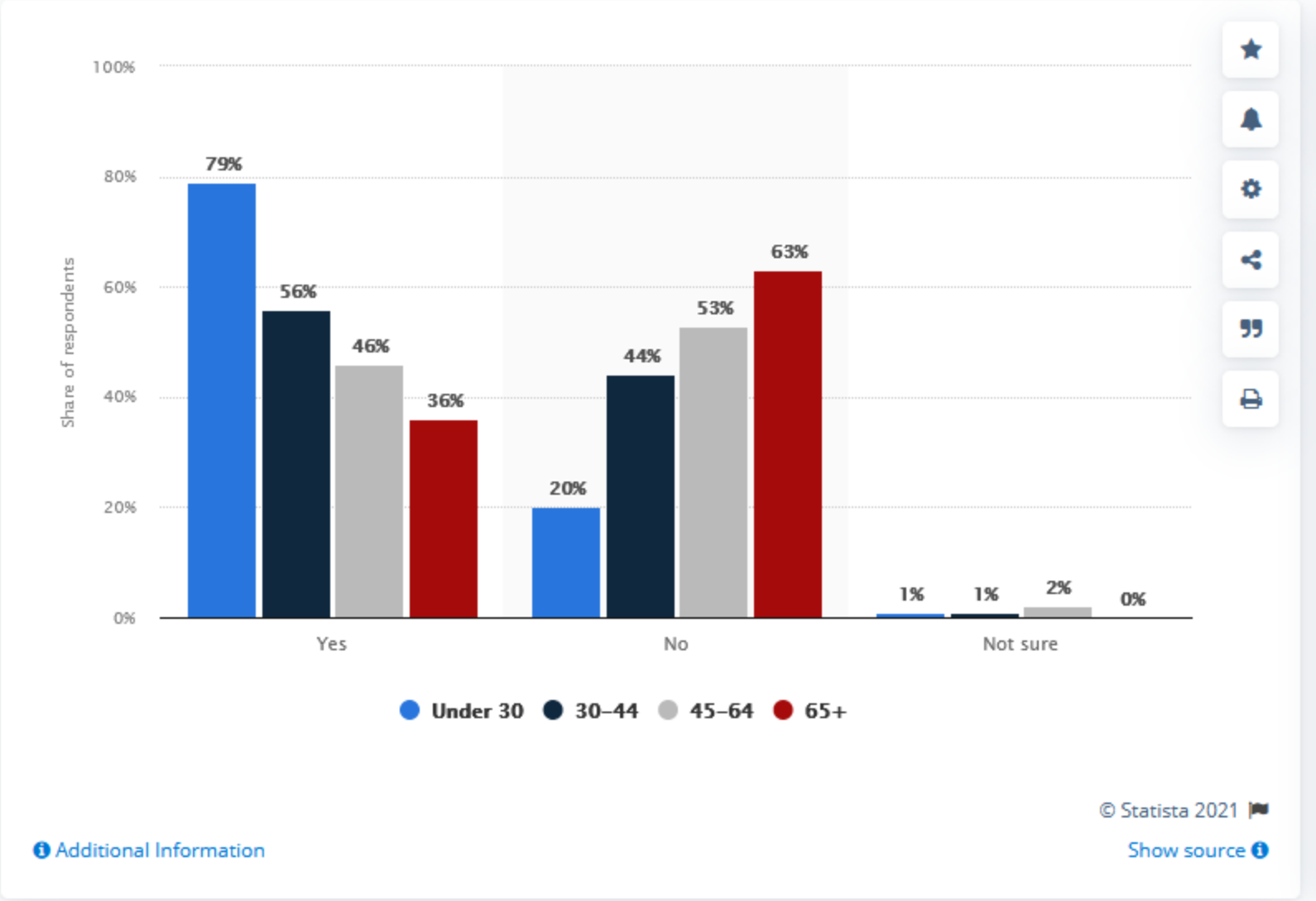
- The difference between the sample value and the true value of the population mean.

Random Error or Random Sampling Error

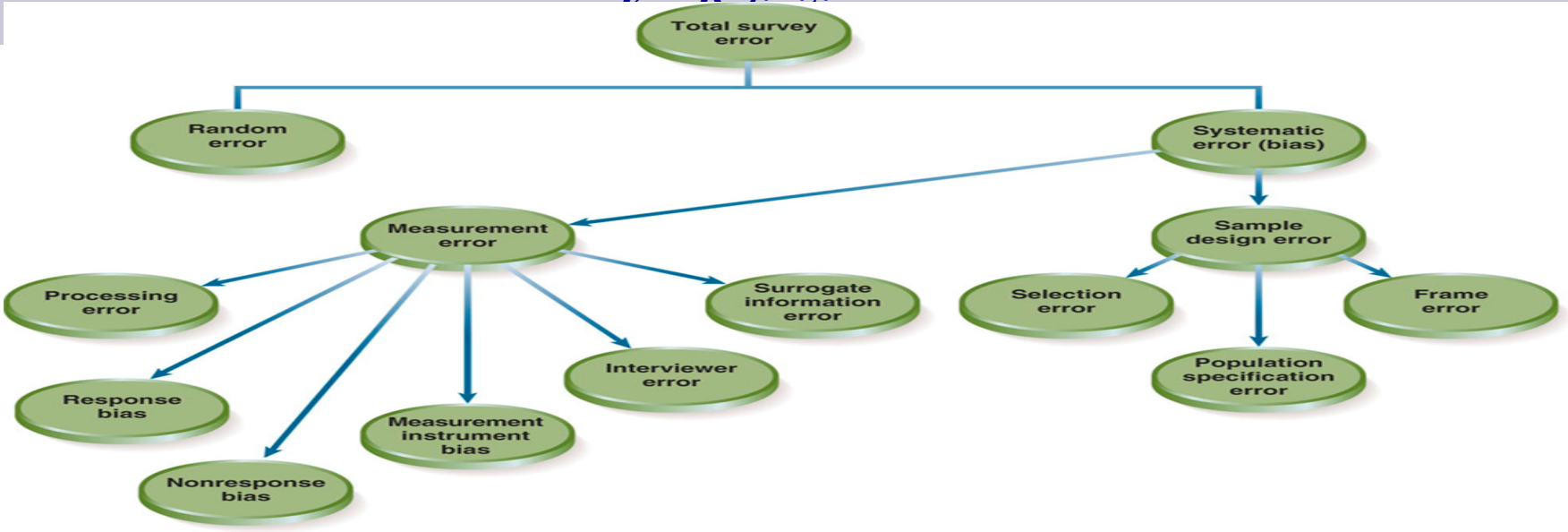
Survey the satisfaction rating towards the Harry Potter movie series

- Assume population rating:8
- Sub sample rating 1: 9
- Sub sample rating 2: 8.4
- Sub sample rating 3: 7.6

Percentage of people who have read any of Harry Potter books or watch any of the movies



Survey Research Error

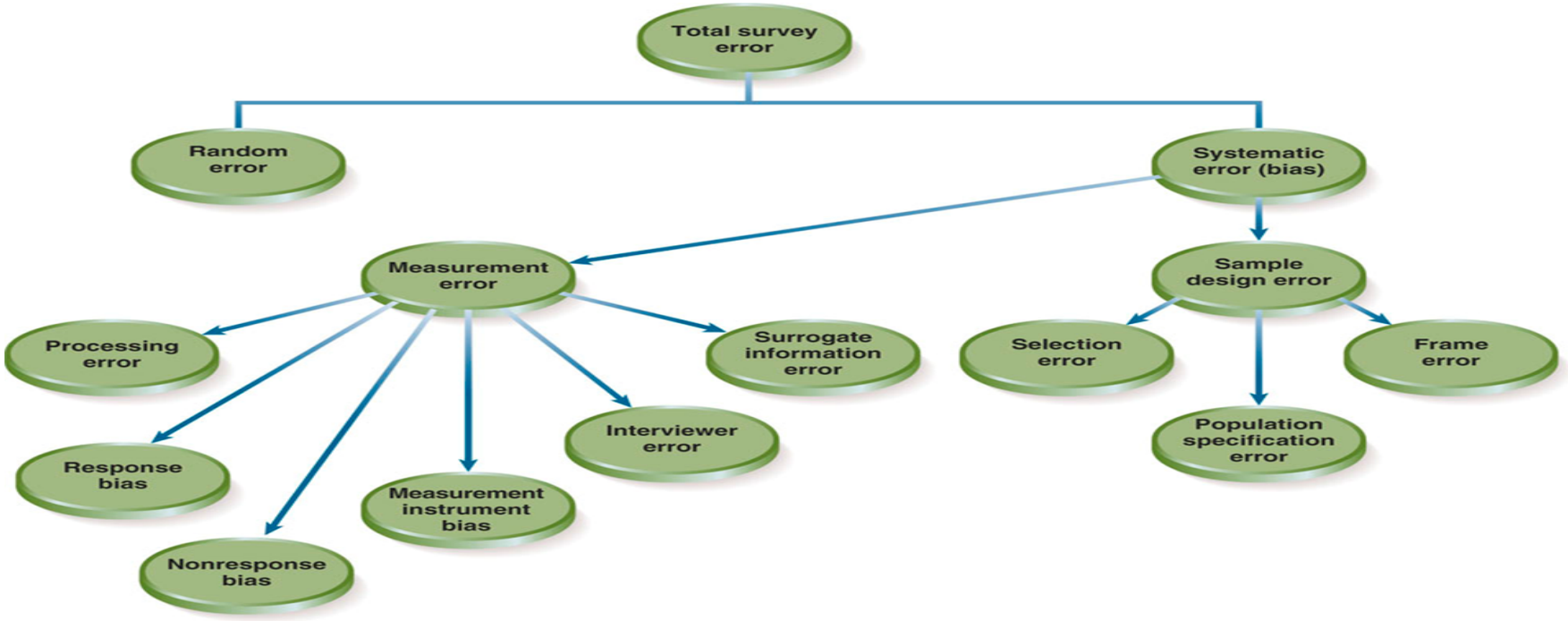


Systematic Error or Bias:

- Error that results from problems or flaws in the execution of the research design; Sometimes called non-sampling error.

Survey Research Error

Key Definitions



Sample Design Error:

- Systematic error that results from an error in the sample design or sampling procedures.

Survey Research Error

Key Definitions

•Frame error

Sampling frame:

➢the list of population elements or members from which samples to be selected.

➢a list of all the items in your population. It's a complete list of everyone or everything you want to study.

- **Population**: Students in MKT101.
  Sampling Frame: Adrian, Anna, Bob, Billy, Howie, Jess, Jin, Kate, Kaley, Lin, Manuel, Norah, Paul, Roger, Stu, Tim, Vanessa, Yasmin.

Survey Research Error

Key Definitions

- Frame error
  - –Error results from using an incomplete or inaccurate sampling frame.
    - E.g., a published telephone directory as a sampling frame
      - – Not listed or moved or changed

Survey Research Error

Continued

Population Specification Error:

- Error that results from incorrectly defining the population or universe from which a sample is chosen.

  – E.g., Apple products user
    - by specifying a young population.
  – E.g., TikTok's User.

Survey Research Error

Continued

Population Specification Error:

- Error that results from incorrectly defining the population or universe from which a sample is chosen.
  - –E.g., Apple products user
    - by specifying a young population.
  - –E.g., TikTok's User.

- **25%** of TikTok's active users accounts in the U.S. are people aged 10-19.
- **22.4%** of TikTok's active users accounts in the U.S. are 20-29.
- **21.7%** of TikTok's active users accounts in the U.S. are 30-39.
- **20.3%** of TikTok's active users accounts in the U.S. are 40-49.
- **11%** of TikTok's active users accounts in the U.S. are 50+.

Survey Research Error

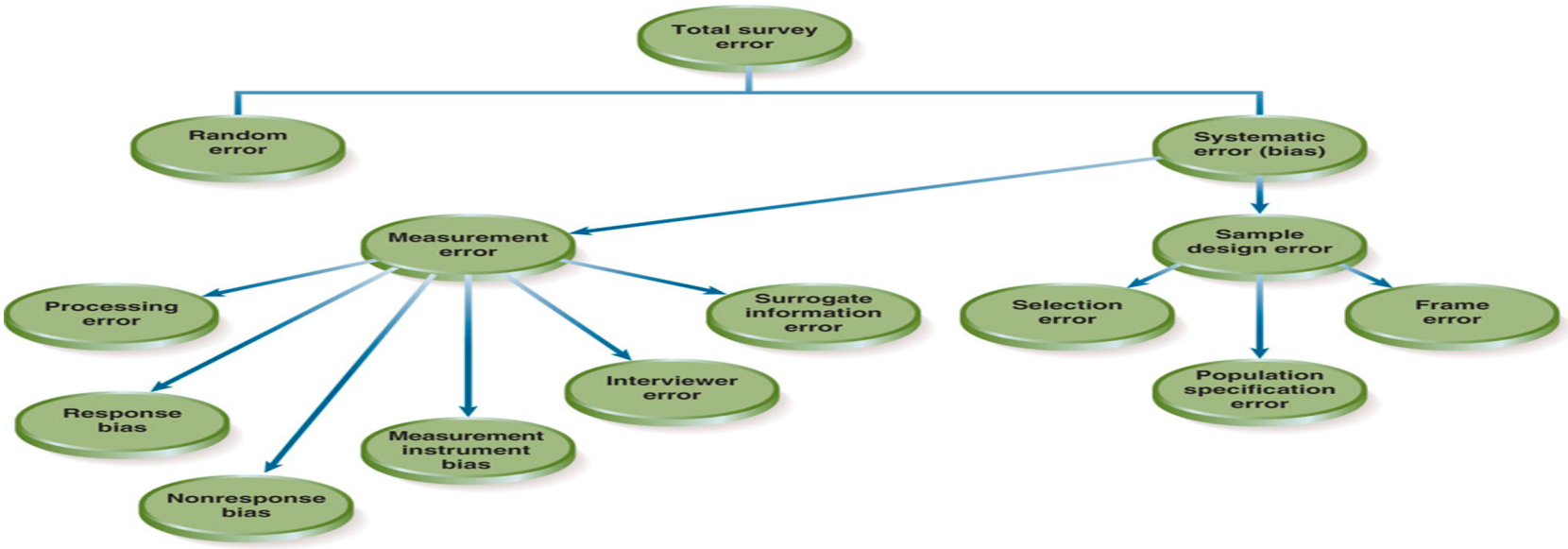
Continued

Selection Error:

- Error that results from incomplete or improper sampling procedures or not following appropriate procedures.
  - –E.g., Mall intercept method leaves out the elderly, because he or she doesn't want to talk to older people.
  - –E.g., door-to-door interviewers might decide to avoid houses that do not look neat and tidy because they think the inhabitants will not be agreeable to doing a survey.

Survey Research Error

Continued



Measurement Error:

- Systematic error that results from a variation between the information being sought and what is actually obtained by the measurement process.

Survey Research Error

Continued

Surrogate Information Error:

- Error that results from a discrepancy between the information needed to solve a problem and that sought by the researcher.

- For example:
  - How likely are you going to the theatre to watch the movie?
  - How likely are you going to like the movie?

Interviewer Error or Interviewer Bias:

- Error that results from the interviewer's influencing – consciously or unconsciously – the answers of the respondent.
- Professor survey students how many hours do you study for the class.

Survey Research Error

Continued

Measurement Instrument Error:

- Error that results from the design of the questionnaire or measurement instrument; also known as *questionnaire bias*.
- For example, leading questions:

–Do you shop at lower-class stores like xxx?

–Are you satisfied with the good service provided in your stay at Holiday Inn?

Input Error:

- Error that results from the incorrect transfer of information from a survey document to a computer.

Survey Research Error

Continued

Nonresponse Bias:

- Error that results from a systematic difference between those who do and those who do not respond to the measurement instrument.

- Sampled units typically do not respond because they are unable, unavailable, or unwilling to do so.
  - E.g., people who are more active runners might be more inclined to answer a survey about running than people who aren't as active in the community.

Response Bias:

- Error that results from the tendency of people to answer a question incorrectly through either deliberate falsification (e.g., restroom usage) or unconscious misrepresentation (e.g., # of times purchase) .

Question

What types of error might be associated with the following situations?

a. Conducting a survey about attitudes toward city government using the telephone directory as a sample frame.

b. Interviewing respondents only between 8:00 a.m. and 5:00 p.m. on features they would like to see in a new condominium development.

c. Asking people if they have visited the public library in the past two months.

d. Asking people how many tubes of toothpaste they used in the past year.

e. Telling interviewers they can probe using any particular example they wish to make up.

Answer

a) Sample frame error.
b) Sample selection error.
c) Response bias.
d) Response bias.
e) Interviewer error.