

Chapter 1

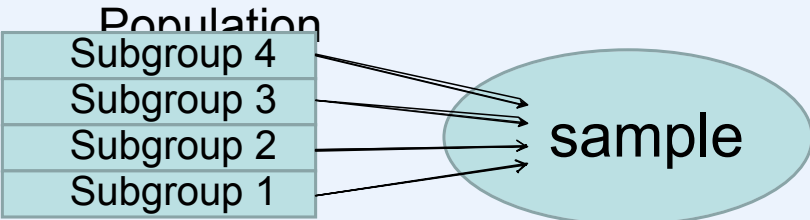
Getting Started

Understanding Basic Statistics
Fifth Edition

Aug 28-2:40 PM

Sampling Techniques

- 1 • Simple Random Sampling, Sample size = n
- Each member of the population has an equal chance of being selected.
- Each sample of size n has an equal chance of being selected.
- 2 • Stratified sampling



Population

Subgroup 4

Subgroup 3

Subgroup 2

Subgroup 1

sample

©Cengage Learning . All rights reserved.

1 | 17

Aug 28-2:40 PM

Sampling Techniques

- Systematic sampling
- Number every member of the population.
- Select every k th member.
- Cluster sampling
- Population is naturally divided into pre-existing segments.
- Make a random selection of clusters, then select all members of each cluster.
- * Convenience sampling - Collect sample data from a readily-available population database.



Critical Thinking

- Sampling frame – a list of individuals from which a sample is selected.
- Undercoverage – resulting from omitting population members from the sample frame.
- Sampling error – difference between measurements from a sample and that from the population.
- * Nonsampling error – result of poor sample design, sloppy data collection, faulty measuring instruments, bias in questionnaires, and so on.



1 Answer?

Critical Thinking

Which of the following sampling strategies is likely to lead to a non-sampling error?

Individuals are selected at random from...

- a). A database of social security numbers.
- b). A cluster of phone books.
- c). A collection of birth certificates.
- d). None of these is likely to introduce non-sampling error.



Aug 28-2:40 PM

Guidelines For Planning a Statistical Study

- Identify individuals or objects of interest.
- Specify the variables.
- Determine if you will use the entire population.
If not, determine an appropriate sampling method
- Determine a data collection plan, addressing privacy, ethics, and confidentiality if necessary.



Aug 28-2:40 PM

Guidelines For Planning a Statistical Study

- Collect data.
- Analyze the data using appropriate statistical methods.
- Note any concerns about the data and recommend any remedies for further studies.

