

Chapter 5 Vocabulary

Word	Definition
Bias	systematic favoring of certain outcomes
Voluntary Response Sample	sample consisting of people who choose themselves by responding to a general appeal
Convenience Sample	sample which chooses the people who are easiest to reach
Simple Random Sample (SRS)	a sample size of n individuals from the population chosen in such a way that every set of n individuals has the same chance to be in the sample actually selected
Sample	the part of the population from which we actually collect information
Statistic	number that describes a sample
Population	the entire group of individuals about which we want information
Parameter	a number that describes the population
Variability	describes how spread out the values of the sample statistic are when we take many samples
Margin of Error	says how close the sample statistic lies to the population parameter

Confidence Statement	a fact about what happens in all possible samples ; it tells us how much we can trust the result of one sample
Level of Confidence	what percent of all possible samples satisfy the margin of error
Sampling Error	errors caused by the act of taking a sample
Random Sampling Error	deviation between the sample statistic and population parameter caused by chance in selecting a random sample
Nonsampling Error	errors not related to the act of selecting a sample from the population
Sampling Frame	the list of individuals from which a sample is actually selected
Processing Error	error in mechanical tasks such as in doing arithmetic or entering responses into a computer
Nonresponse	failure to obtain data from a selected individual for a selected sample
Strata	subsets of the population
Stratified Random Sample	a sample obtained by dividing the population into subgroups according to various homogeneous characteristics & then selecting members from each subgroup
Probability Sample	a sample chosen by chance

Types of Samples

The design of a statistical study is **biased** if it systematically favors certain outcomes

Two common types of biased samples:

Voluntary Response Sample: chooses itself by responding to a general appeal

example: write-in or call-in opinion polls

Convenience Sample: selection of whichever individuals are easiest to reach

example: mall interviews, inspecting oranges at top of the crate

One type of unbiased samples (there are others that we will study later):

(SRS) **Simple Random Sample:** a sample in which individual in the population has an equal chance of being selected

examples: putting names in a hat and drawing a certain number

How to pick a simple random sample (SRS) using a random number table:

- 1) label/number each individual in population
- 2) pick a random line & break digits into one/two/three digit numbers (based on sampling frame) and use these to select sample

Flip to Table B, Random digits in the back of your textbook. (Page T-2).

Copy the digits from line 120 below. Only copy the columns for which there is space for below.

120

3	5	4	7	6	5	5	9	7	2	3	9	4	2	1	6	5	8	5	0	0	4	2	6	6	3	5	4	3	5
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Our states are identified with numbers 1 - 50. Therefore, when we are looking at the random digits, we need to think of them as 2 digit numbers.

Re-write the digits from line 120 above as a list of two digit numbers.

35 47 65 59 72 39 42 16

Using these random two digit numbers, select five random states.

35: Wyoming 47: Conn. 39: Alaska 42: Oregon 16: Kentucky