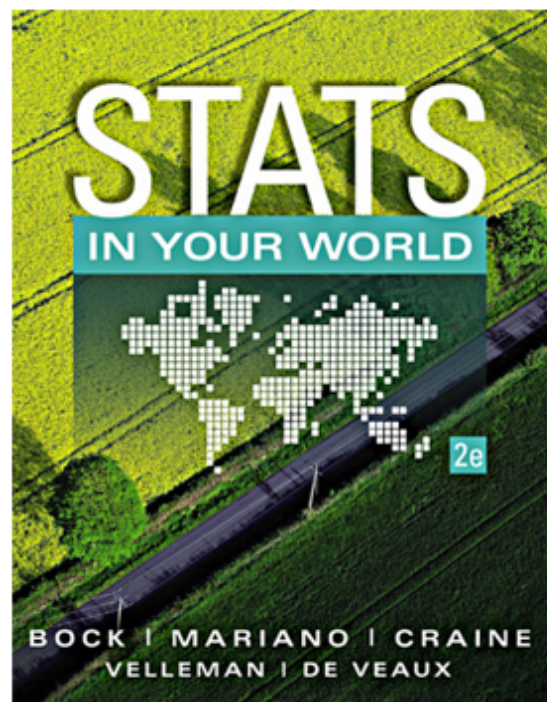


2019

Chapter 9

Samples



Goal #1

Types of Sampling

Goal #2

Types of Bias

Goal #3

Parameter
vs.
Statistic

Goal #4

Possible Issues

Consider the following:

Given a large pot of soup and you want to know how it tastes. Is it reasonable to eat the entire pot to find out?

Explain why not and what you might do before taking a taste. Stir it up!

Would it be more helpful in determining the taste if you used a ladle (large spoon) versus a typical teaspoon?

Both taste the same
so size of sample
doesn't matter.

When we are determining how to sample the population, we need to do so carefully and try to ensure that we make a random selection.

The sample should adequately represent the population

There are a variety of ways to choose a sample such as:

1. **SRS** Simple Random Sample - each person in the population has an equal chance of being selected
2. **Stratified** The population is divided into sub-groups, and then samples are taken from each sub-group
3. **Cluster** An entire group that already exists is selected to be the sample (ex. all students with 5th period lunch)
4. **Systematic** The sample is selected through some logical system (ex. every 5th person to arrive)
5. **Convenience** Sample of people readily available (ex. this class)
6. **Multistage** a mixture of different types of sampling (ex. stratified then SRS)
7. **Voluntary Response**

People choose whether or not to participate (ex. call in survey)

Always biased !!

As a class, we will divide up these sampling techniques, research them in the text and briefly explain each of them on the table in your packet.

HW 9-1 Read pages 218-221 and answer the questions below

1. Which of these is an advantage of using a stratified sample instead of a simple random sample?
 - A) The stratified random sample allows you to get information about each stratum.
 - B) The stratified sample reduces sample size .
 - C) The stratified sample has more sample to sample variability.
 - D) The stratified sample eliminates the need for randomization.

2.

The local chapter of the National Honor Society offers after school tutoring, but the sessions are not well attended. Hoping to increase attendance, the tutors design a survey to gauge student interest in times, locations, and days of the week that students could attend tutoring sessions. They choose 3 English classes at random, and have all of the students in each class take the survey. What type of sample is this?

 - A) simple random sample
 - B) stratified random sample
 - C) cluster random sample
 - D) systematic random sample

3.

The local chapter of the National Honor Society offers after school tutoring, but the sessions are not well attended. Hoping to increase attendance, the tutors design a survey to gauge student interest in times, locations, and days of the week that students could attend tutoring sessions. They choose randomly choose 10 students from each grade to take the survey. What type of sample is this?

 - A) simple random sample
 - B) stratified random sample
 - C) cluster random sample
 - D) systematic random sample

4.

The local chapter of the National Honor Society offers after school tutoring, but the sessions are not well attended. Hoping to increase attendance, the tutors design a survey to gauge student interest in times, locations, and days of the week that students could attend tutoring sessions. They stand outside the entrance to the school and give the survey to every 10th student entering the building. What type of sample is this?

 - A) simple random sample
 - B) stratified random sample
 - C) cluster random sample
 - D) systematic random sample

5. A statistics teacher wants to know how her students feel about an introductory statistics course. She decides to administer a survey to a random sample of students taking the course. She has several sampling plans to choose from. Name the sampling strategy in each.

a) There are four grade levels of students taking the class: freshmen, sophomores, juniors, and seniors. Randomly select 15 students from each grade level

b) Randomly select a grade level (freshmen, sophomores, juniors, and seniors) and survey every student in that grade level

c) Each student has a nine-digit student number. Randomly choose 60 numbers.

d) Using the class roster, select every fifth student from the list.

6. Why does our text suggest that FDR won the presidency in 1936?

7. What does stirring the pot of soup have to do with randomizing?