U3A-4

Sampling Design and Methods

Vocabulary

Simple Random Sampling: the researcher chooses the sample from the entire population through a randomization technique—for example, drawing names out of a hat or using a random number table or random number generator.

Stratified Random Sampling: The researcher separates the population into a number of strata (statistical subpopulations) and then takes a random sample within each stratum. Examples of possible strata are freshman, sophomore, junior, and senior classes or males and females.

Systematic Sampling: The researcher separates the population into evenly sized groups, randomly selects one participant in the first group, and then selects every *n*th participant. For example, the entire student roster is numbered, numbers 1 through 25 are placed in a hat, and a number is drawn. Say the number 7 is chosen; every 25th student afterward is selected. Our sample consists of No. 7, No. 32, No. 57 and so forth.

Cluster Sampling: The researcher separates the population into groups and then randomly selects some of these groups to participate. For example, the numbers of every classroom in school are placed in a hat, and five classrooms are selected. Every student in those five classrooms participates.

Convenience Sampling: The researcher selects participants based on easy accessibility—for example, the researcher stands in one location at school and selects the first 50 students who walk by.

Census: a study in which every member of a population of interest in a participant

Just to clarify...

What does the word *random* mean in statistics?

Random means that some strategy has been employed to ensure impartial selection, unbiased by the researcher.

Random *sampling* means that a strategy was used to select the participants in the statistical investigation.

Random *assignment* of treatments means that a strategy was used to determine who gets an active treatment and who gets a placebo *or* the order in which treatments are given.

Remember that Spuds Potato Chips scenario?

Hypothesis: $\mu < 28.3$ g that was advertised.

How might we collect a sample of bags to test? *Remember that the sample should be representative of the population*.

What do we mean by 'population of Chips?'

@11 the chips

What factors should we consider when selecting the sample?

Is it possible to test bags from all around the country?

Can you think of one the costs very little money?

Complete #1-8

EC: #9