RESEARCH METHODOLOGY

LECTURE-31

IMPORTANT SAMPLING DISTRIBUTIONS

Some important sampling distributions, which are commonly used, are:
(1) sampling distribution of mean; (2) sampling distribution of proportion; (3) student's 't' distribution; (4) F distribution; and (5) Chi-square distribution

STANDARD ERROR
The standard deviation of sampling distribution of a statistic is known as its standard error (S.E) and is considered the key to sampling theory.

What is sample size and its determination?

Sample size determination is the act of choosing the number of observations or replicates to include in a statistical sample. The sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample.

What are the terms used around the sample size?
Before we jump into sample size determination, let's take a look at the terms you should know:

Population size: Population size is how many people fit your demographic. For example, you want to get information on doctors residing in North America. Your population size is the total number of doctors in North America. Don't worry! Your population size doesn't always have to be that big. Smaller population sizes can still give you accurate results as long as you know who you're trying to represent.

Confidence level: Confidence level tells you how sure you can be that your data is accurate. It is expressed as a percentage and aligned to the confidence interval. For example, if your confidence level is 90%, your results will most likely be 90% accurate.
The margin of error (confidence interval): When it comes to surveys, there's no way to be 100% accurate. Confidence intervals tell you how far off from the

population means you're willing to allow your data to fall. A margin of error describes how close you can reasonably expect a survey result to fall relative to the real population value. Remember, if you need help with this information you can use our margin of error calculator.

Standard deviation: Standard deviation is the measure of the dispersion of a data set from its mean. It measures the absolute variability of a distribution. The higher the dispersion or variability, the greater the standard deviation and the greater the magnitude of the deviation. For example, you have already sent out your survey. How much variance do you expect in your responses? That variation in response is the standard of deviation.