

UNIT 15: Population Parameters and Sample Statistics

Specific Objectives:

1. To learn related terminology.
2. To acquire preliminary idea of sampling distribution.
3. To learn some simple population estimators.

	Detailed Content	Time Ratio	Notes on Teaching
	15.1 Basic terminology	2	Terms like population, sample, sampling, statistical Inference, population parameters, sample mean, sample variance and sample mean distribution should be introduced.
	15.2 Sample mean distribution	3	The following properties are to be introduced: (a) the mean of the sample mean distribution is the population mean (b) If the population is normally distributed with mean μ and variance σ^2 then the sample mean is normally distributed with mean μ and variance $\frac{\sigma^2}{n}$. (c) the sample mean distribution approaches normal when n is large even though the population is not necessarily normal.
38	15.3 Parameters estimation	3	Teachers may touch upon unbiased and efficient estimators of a population parameter during class discussion The following key points should be stressed: (a) sample mean, on the average, is right on the population mean, (b) sample mean approaches population mean when the sample size is sufficiently large, (c) the adjusted sample variance, $\frac{n}{n-1}\sigma_{\bar{x}}^2$ is also, on the average, right on the population variance, (d) sample mean and adjusted sample variance are unbiased estimators.
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