Summary

- An estimator or estimate is said to be a best estimator or estimate if it is unbiased, consistent, efficient and sufficient
- The amount of bias: B = Estimated value – True value of the parameter
- The sample mean x bar is an unbiased estimator of the population mean
- Unbiased estimator of the population variance in case of Normal population is given by $n\,s^2/(n-1)$
- An estimator is said to be consistent if the variance of its sampling distribution decreases with increasing sample size
- An estimator Tn is consistent estimator for g(ϴ) (a function of ϴ) if E(Tn) = g(ϴ) and V(Tn) $\rightarrow 0$ as n $\rightarrow \infty$
- Consistent Estimators need not be unbiased
- Unbiased estimators need not be consistent
- Suppose Tn is a consistent estimator of ϴ and h (ϴ) is a continuous function of ϴ then h (Tn) is consistent for h (ϴ). Hence consistent possess the invariance property
- If a consistent estimator exists whose sampling variance is less than that of any other consistent estimator it is said to be most efficient and it provides a standard for the measurement of efficiency of a statistic.