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
- Generally unbiased estimators does not possess the invariance property
- 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) $\to 0$ as $n \to \infty$
- 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