Summary

- In the study of attributes (qualitative data), we are interested in the estimate of the proportion
- The sample proportion p is used as an point estimate of the population proportion in an interval estimation of the population proportion
- The difference in the proportions of the two samples drawn from two populations is taken as an point estimate of the difference in the population proportions in an interval estimation of the difference in population proportions
- A confidence interval for the population proportion P gives an estimated range of values which is likely to include an unknown population proportion
- 100 (1- α)% C.I for the population proportion P is given by

$$[p - Z_{\alpha/2} \sqrt{\frac{pq}{n}} \, , \, p + Z_{\alpha/2} \sqrt{\frac{pq}{n}} \,]$$

- 100 (1- α)% C.I for the difference of two population proportions is given by

$$[(p_1 - p_2)) - Z_{\alpha/2} \sqrt{\frac{p_1 q_1}{n_1} + \frac{p_2 q_2}{n_2}} \, , \, (p_1 - p_2) + Z_{\alpha/2} \sqrt{\frac{p_1 q_1}{n_1} + \frac{p_2 q_2}{n_2}} \,]$$