Summary

- In this module we discuss different methods of studying association of two attributes for two way viz.,
  - Comparison of actual and observed frequencies
  - Comparison of various proportions and products.
  - Calculation of Yule's Coefficient of association
  - Calculation of coefficient of Collignation
  - Calculation of coefficient of Contingency

- Two attributes A and B are said to be independent if the observed frequency of (AB) is equal to its expected frequency ie., $(A)X(B)/N$

- The main limitation of studying association by a comparison of actual and expected values of AB is that it only determines the nature of association between A and B i.e., whether the association (if any) is positive or negative. It does not tell us about the degree of association i.e., whether it is high or low

- A slightly better method would be the comparison of proportions between various classes. It can be found out easily that A and B would be independent if $(AB)\ (\alpha\beta) = (A\ \beta)\ (\alpha\beta)$

- For practical purpose it is enough to take a decision about whether the two attributes in question are associated, disassociated or independent. But in some cases the difference between observed and expected frequencies may be due to what are called fluctuations of sampling. Under such circumstances it becomes necessary to obtain an idea about the extent to which the difference between the observed and expected frequencies can be due to chance fluctuations

- Yule's coefficient takes the value between -1 and +1

- The coefficient of collignation is denoted by gamma

- Instead of dividing the universe into 2 parts, it can be divided into more than 2 parts and is written in the tabular form is known as manifold classification

- Karl Pearson has given the following formula for the calculation of "coefficient of mean square contingency". According to it the coefficient of mean square contingency, $C = \sqrt{\frac{\chi^2}{N + \chi^2}} = \sqrt{\frac{\phi^2}{1 + \chi^2}}$

- Since C cannot reach the limit 1, we have one more coefficient known as: Tschuprow's Coefficient, which is given by, $T = \sqrt{\frac{C^2}{(1 - C^2)\sqrt{(s-1)(t-1)}}}$