TUTORIAL NO.1.1 : PARTIAL AND MULTIPLE CORRELATION

Date: 29/11/2019

1. Is it possible to get the following from a set of experimental data?
   $r_{xy} = 0.6$, $r_{yz} = 0.8$, $r_{xz} = -0.5$ (Find $r_{xy.z}$)

2. On the basis of observations made on 39 cotton plants, the total correlation of yield of cotton (X), number of seed vessels (Y) and height (Z) are found to be:
   $r_{xy} = 0.8$, $r_{xz} = 0.65$ and $r_{yz} = 0.7$
   Find the partial correlation between yield of cotton and the number of bolls, eliminating the effect of height.

3. The correlation between a general intelligence test and school achievement in a group of children from 6 to 15 years old is 0.80. The correlation between the general intelligence test and age in the same group is 0.70 and the correlation between school achievement and age is 0.60. What is the partial correlation between general intelligence and school achievement in children of the same age?

4. In trivariate distribution, $r_{xy} = 0.80$, $r_{yz} = -0.56$ and $r_{xz} = -0.40$. Find $R_{z.xy}$.

5. Find the multiple correlation coefficient $R_{y.xz}$ when $r_{xy} = 0.9$, $r_{xz} = 0.75$ and $r_{yz} = 0.7$.

6. The simple correlation coefficients between temperature(X), corn yield(Y) and rainfall(Z) are $r_{xy} = 0.59$, $r_{xz} = 0.46$ and $r_{yz} = 0.77$. Calculate $r_{xy.z}$ and $R_{x.yz}$.

7. In trivariate distribution, $r_{xy} = 0.632$, $r_{yz} = r_{xz} = 0.856$. Find I) $r_{23.1}$ II) $R_{1.23}$