

Multiple Correlation

We can also calculate the correlation between more than two variables.

Definition 1: Given variables x , y and z , we define the **multiple correlation coefficient**

$$R_{z,xy} = \sqrt{\frac{r_{xz}^2 + r_{yz}^2 - 2r_{xz}r_{yz}r_{xy}}{1 - r_{xy}^2}}$$

where r_{xz} , r_{yz} , r_{xy} are as defined in Definition 2 of [Basic Concepts of Correlation](#). Here x and y are viewed as the independent variables and z is the dependent variable.