One-Way Analysis of Variance

$$SS_T = \sum_j \sum_i \left(x_{ij} - \bar{\bar{x}}\right)^2$$

$$SS_W = \sum_j SS_j = \sum_j \sum_i \left(x_{ij} - \bar{x}_j\right)^2$$

$$SS_B = \sum_j n_j \left(\bar{x}_j - \bar{\bar{x}}\right)^2$$

Two-Way Analysis of Variance

Replicate Measurments

$SS_T = \sum_k \sum_j \sum_i \left(x_{ijk} - \bar{x}\right)^2$	$df_T = n - 1$	$MS_T = SS_T / df_T$
$SS_A = mc \sum_i (\bar{x}_i - \bar{x})^2$	$df_A = r - 1$	$MS_A = SS_A / df_A$
$SS_B = mr \sum_j \left(\bar{x}_j - \bar{x}\right)^2$	$df_B = c - 1$	$MS_B = SS_B / df_B$
$SS_{AB} = m \sum_j \sum_i \left(\bar{x}_{ij} - \bar{x}_i - \bar{x}_j + \bar{x}\right)^2$	$df_{AB} = (r-1)(c-1)$	$MS_{AB} = SS_{AB} / df_{AB}$
$SS_W = \sum_k \sum_j \sum_i \left(x_{ijk} - \bar{x}_{ij}\right)^2$	$df_W = n - rc$	$MS_W = SS_W / df_W$