Relation between μ_r and μ'_r

$$\mu_1 = 0$$

$$\mu_2 = \mu'_2 - \mu'^2_1$$

$$\mu_3 = \mu'_3 - 3\mu'_2\mu' + 2\mu'^3_1$$

$$\mu_4 = \mu'_4 - 4\mu'_3\mu'_1 + 6\mu_2\mu'^2_1 - 3\mu'^4_1$$

Relation between μ_r and V_r

$$V_1 = \bar{x} \text{ (Mean)}$$

$$V_2 = \mu_2 + \bar{x}^2$$

$$V_3 = \mu_3 + 3\mu_2\bar{x} + \bar{x}^3$$

$$V_4 = \mu_4 + 4\mu_3\bar{x} + 6\mu_2\bar{x}^2 + \bar{x}^4$$

Imp Karl Pearson's β and γ Coefficients

There are four Karl Pearson's coefficients base on the first four moments of a frequency distribution about its mean:

(1) $\beta_1 = \dfrac{\mu_3^2}{\mu_2^3}$

$\beta_2 = \dfrac{\mu_4}{\mu_2^2}$ $\longrightarrow$ β- Coefficients

$\gamma_1 = +\sqrt{\beta_1} = +\sqrt{\dfrac{\mu_3^2}{\mu_2^3}}$ = Coefficient of Skewness

$\gamma_2 = \beta_2 - 3$ = Coefficient of Kurtosis