$$\begin{aligned} N_i \downarrow = N_{i-1} \downarrow + n_i &= \sum_{h=1}^i n_h \\ F_i \downarrow = F_{i-1} \downarrow + f_i &= \sum_{h=1}^i f_h \\ \bar{x} &= \frac{\sum x_i}{\sum x_i} \\ \bar{x} &= \frac{\sum x_i n_i}{\sum x_i} \end{aligned} \qquad \bar{x} = \sum x_i f_i \qquad \bar{x} = \sum x_i f_i$$

$$N_i \uparrow = N_{i+1} \uparrow + n_i = \sum_{h=i}^m n_h$$

$$F_i \uparrow = F_{i+1} \uparrow + f_i = \sum_{h=i}^m f_h$$

$$\overline{x} = \frac{\sum x_i}{n} \qquad \overline{x} = \frac{\sum x_i n_i}{\sum n_i} \qquad \overline{x} = \sum x_i f_i \qquad f_i = \frac{n_i}{\sum n_i} \qquad \overline{x} = \frac{\sum x_i n_i}{\sum n_i} \qquad x_i = \frac{x_{i-1} + x_i}{2}$$

$$\overline{x} = \sum x_i f_i$$

$$\bar{x} = \frac{n_i}{\sum n_i}$$
 $\bar{x} = \frac{\sum n_i}{\sum n_i}$

$$x_{i} = \frac{x_{i-1} + x_{i}}{2}$$

$$s^2 = \frac{\sum (x_i - \overline{x})^2}{n}$$

$$s^{2} = \frac{\sum (x_{i} - \overline{x})^{2}}{n}$$

$$s^{2} = \frac{\sum (x_{i} - \overline{x})^{2} n_{i}}{\sum n_{i}}$$

$$s = \sqrt{\frac{\sum \left(x_i - \overline{x}\right)^2}{n}}$$

$$s = \sqrt{\frac{\sum (x_i - \overline{x})^2}{n}}$$

$$s = \sqrt{\frac{\sum (x_i - \overline{x})^2 n_i}{\sum n_i}}$$

$$U^{Me} = \frac{n+1}{2}$$

$$U^{Q_k} = k \cdot \frac{n+1}{4}$$

$$U^{D_k} = k \cdot \frac{n+1}{10}$$

$$v = \frac{s}{\overline{x}} \cdot 100$$

$$I_Q=Q_3-Q_1$$

$$n_{i\bullet} = \sum_{i=1}^{p} n_{ij}$$

$$n_{\bullet j} = \sum_{i=1}^{m} n_{ij}$$

$$f_{i\bullet} = \frac{n_{i\bullet}}{n_{\bullet\bullet}}; \qquad f_{\bullet j} = \frac{n_{\bullet j}}{n_{\bullet\bullet}}$$

$$f_{i/j} = \frac{n_{ij}}{n_{\bullet j}}$$

$$f_{j/i} = \frac{n_{ij}}{n_{i\bullet}}$$

$$f_{ij} = \frac{n_{ij}}{n_{\bullet\bullet}}$$

$$\overline{x}_j = \frac{\sum_{i=1}^m x_i \cdot n_{ij}}{n_{\bullet j}}$$

$$\overline{x} = \frac{\sum_{j=1}^{p} \overline{x}_{j} \cdot n_{\bullet j}}{\sum_{i=1}^{p} n_{\bullet j}}$$

$$\overline{s^2} = \frac{\sum_{j=1}^p s_j^2 n_{\bullet j}}{\sum_{j=1}^p n_{\bullet j}}$$

$$\overline{x} = \frac{\sum_{j=1}^{p} \overline{x}_{j} \cdot n_{\bullet j}}{\sum_{j=1}^{p} n_{\bullet j}} \qquad \overline{s^{2}} = \frac{\sum_{j=1}^{p} s_{j}^{2} n_{\bullet j}}{\sum_{j=1}^{p} n_{\bullet j}} \qquad s_{\overline{x}_{j}}^{2} = \frac{\sum_{j=1}^{p} (\overline{x}_{j} - \overline{x})^{2} \cdot n_{\bullet j}}{\sum_{j=1}^{p} n_{\bullet j}}$$

$$s_X^2 = \overline{s^2} + s_{\overline{x}_j}^2$$
 $k_1 = \frac{s_{\overline{x}_j}^2}{s_Y^2}$

$$k_1 = \frac{s_{\overline{x}_j}^2}{s_X^2}$$

$$k_2 = \frac{\overline{s^2}}{s_x^2}$$