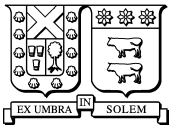
Francisco Cuevas
Carlos Schwarzenberg
DMAT - UTFSM



Ayudantes:
Diego Astaburuaga
Gabriel Riffo

MAT041 - Probabilidad y Estadística

Formulario Estadística

$$\overline{X} = \frac{1}{n}\sum_{i=1}^{n} x_i$$

$$\text{Me}(X) = \begin{cases} X_{\left(\frac{1}{2}(n+1)\right)} & n \text{ impar} \\ \frac{X_{\left(\frac{n}{2}\right)} + X_{\left(\frac{n}{2}+1\right)}}{2} & n \text{ par} \end{cases}$$

$$\overline{X} = \sum_{j=1}^{k} f_j m_j, \qquad f_j = \frac{n_j}{n}$$

$$\text{Me}(X) = LI_{CMe} + \left\{\frac{n}{2} - N_{CMe-1}\right\}\frac{a_{CMe}}{n_{CMe}}$$

$$\text{Mo}(X) = LI_{CMo} + \frac{n_{CMo} - n_{CMo-1}}{2n_{CMo} - n_{CMo-1} - n_{CMo+1}} a_{CMo}$$

$$P_j = X_{\left(\frac{j}{100}(n+1)\right)}$$

$$P_j = LI_{CP} + \left\{n \times \frac{j}{100} - N_{CP-1}\right\} \times \frac{a_{CP}}{n_{CP}}$$

$$S^2 = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \overline{X})^2 = \frac{1}{n-1}\left\{\sum_{i=1}^{n} x_i^2 - n\overline{X}^2\right\}$$

$$S^2 = \sum_{j=1}^{k} f_j(m_j - \overline{X})^2 = \sum_{j=1}^{k} f_j m_j^2 - \overline{X}^2$$

$$RIQ = Q_3 - Q_1$$

$$CV = \frac{s}{\overline{X}}$$

$$m_r = \frac{1}{n}\sum_{i=1}^{n}(x_i - \overline{X})^r$$

$$m_r = \sum_{j=1}^{k} f_j(m_j - \overline{X})^r$$

$$\gamma_1 = \frac{m_3}{s^3}$$

$$A_s = 3\left(\frac{\overline{X} - \text{Me}(X)}{s}\right)$$

$$\gamma_2 = \frac{m_4}{s^4} - 3$$

$$f_{ij} = \frac{n_{ij}}{n}$$
$$i = 1, \ldots, r$$
$$j = 1, \ldots, s$$

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

$$f_{i\bullet} = \sum_{j=1}^{s} f_{ij}$$

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

$$f_{\bullet j} = \sum_{i=1}^{r} f_{ij}$$

$$\text{Cov}(X,Y) = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \overline{X})(y_i - \overline{Y}) = \frac{1}{n-1}\left\{\sum_{i=1}^{n}(x_i y_i - n\overline{XY})\right\}$$

$$\text{Cov}(X,Y) = \frac{1}{n}\sum_{i=1}^{r}\sum_{j=1}^{s} n_{ij}(x_i - \overline{X})(y_i - \overline{Y}) = \sum_{i=1}^{r}\sum_{j=1}^{s} f_{ij} x_i y_i - \overline{XY}$$

$$\text{Corr}(X,Y) = \frac{\text{Cov}(X,Y)}{s_X s_Y}$$