*(anotaciones manuscritas superiores)*

$E(x) = \int x \cdot P(x)dx$  CONTINUA

$V(x) = E(x^2) - [E(x)]^2$  donde $E(x^2) = \int x^2 \cdot P(x)dx$

Acumulada: $P(k) = P(x \le k) = \int^k P(x)dx$

# FORMULARIO N° 1
## ESTADÍSTICA DESCRIPTIVA UNIVARIADA

| FUNCIÓN | FÓRMULA | OBSERVACIÓN |
|---|---|---|
| Promedio | $\overline{X} = \dfrac{\sum n_i * X_i}{n}$ | |
| | $\overline{X} = \dfrac{\sum W_i * X_i}{\sum W_i}$  $W_i$ = parámetro de ponderación | Promedio Ponderado |
| | $\overline{X}_T = \dfrac{\sum \overline{X}_h * n_h}{n}$ | Promedio Total o estratificado |
| Mediana | $Me = X^{\left(\frac{n+1}{2}\right)}$ | Datos no tabulados (n impar) |
| | $Me = \dfrac{X^{\left(\frac{n}{2}\right)} + X^{\left(\frac{n}{2}+1\right)}}{2}$ | Datos no tabulados (n par) |
| | $Me = Y'_{i-1} + a_i \dfrac{\frac{n}{2} - N_{i-1}}{n_i}$ | Datos tabulados (Var. Continua) |
| Moda | $Md = Y'_{i-1} + a_i\left[\dfrac{\Delta_A}{\Delta_A + \Delta_P}\right]$ | $\Delta_A = n_i - n_{i-1}$  $\Delta_P = n_i - n_{i+1}$ |
| Percentil | $P_k = Y'_{i-1} + a_i \dfrac{\frac{n*k}{100} - N_{i-1}}{n_i}$ | $X\left(\dfrac{n \cdot k}{100}\right)$ datos no tabulados |
| Media Geométrica | $Mg = \sqrt[n]{Y_1^{n_1} \cdot Y_2^{n_2} \cdot Y_3^{n_3} \cdot \ldots \cdot Y_k^{n_k}}$ | $Mg \le \overline{X}$ |
| Media Armónica | $M_H = \dfrac{n}{\sum\limits_{i=1}^{k}\dfrac{1}{y_i \cdot n_i}}$ | $M_H \le M_g$ |
| Varianza | $S^2(\sigma^2) = \dfrac{\sum\limits_{i=1}^{n} n_i\left(Y_i - \overline{Y}\right)^2}{n} = \dfrac{\sum\limits_{i=1}^{n} n_i * Y_i^2}{n} - \overline{Y}^2$ | $\sigma = +\sqrt{V(Y)}$ |
| Coef. de Variación | $CV(X) = \dfrac{\sigma}{\overline{X}}$ | |
| Puntaje Típico | $Z_h = \dfrac{X_h - \overline{X}}{\sigma}$ | |
| Intravarianza | $S_w^2 = \dfrac{\sum n_h * S_h^2}{n} = \dfrac{\sum\sum\left(X_{ij} - \overline{X}_i\right)^2}{n}$ | $\overline{X}_T = \dfrac{\sum n_h * X_h}{n}$ |
| Intervarianza | $S_b^2 = \dfrac{\sum n_h * \overline{X}_h^2}{n} - \overline{X}_T^2 = \dfrac{\sum n_i\left(\overline{X}_i - \overline{X}_T\right)^2}{n}$ | |
| Sesgo | $\beta_1 = \dfrac{\sum\left(x_i - \overline{X}\right)^3}{n \cdot \sigma^3}$ | $\beta_2 = \dfrac{\overline{X} - M_d}{\sigma}$ |
| Curtosis | $\gamma_1 = \dfrac{\sum\left(x_i - \overline{X}\right)^4}{n \cdot \sigma^4}$ | $\gamma_2 = \dfrac{Q_3 - Q_1}{2 \cdot \left(D_9 - D_1\right)}$ |