

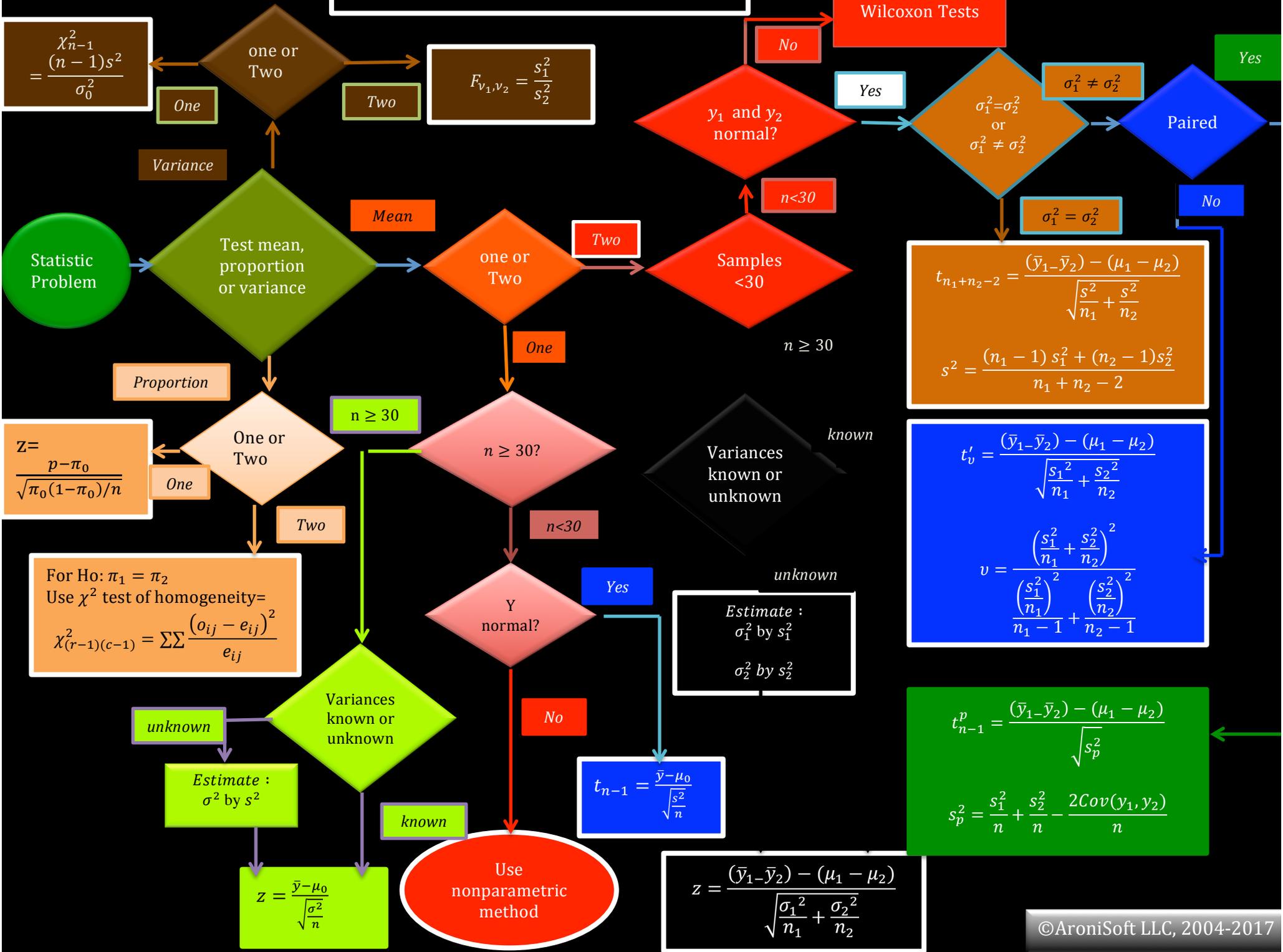


Probabilities and Distributions Relations

Relation Among Probability Distributions

How To Choose a Statistical Test

How to Select a Statistical Test



$$\frac{\chi_{n-1}^2}{(n-1)s^2} = \frac{\sigma_0^2}{\sigma^2}$$

$$F_{v_1, v_2} = \frac{s_1^2}{s_2^2}$$

Use Mann-Witney-Wilcoxon Tests

$$t_{n_1+n_2-2} = \frac{(\bar{y}_1 - \bar{y}_2) - (\mu_1 - \mu_2)}{\sqrt{\frac{s^2}{n_1} + \frac{s^2}{n_2}}}$$

$$s^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}$$

$$t'_v = \frac{(\bar{y}_1 - \bar{y}_2) - (\mu_1 - \mu_2)}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

$$v = \frac{\left(\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}\right)^2}{\left(\frac{s_1^2}{n_1}\right)^2 + \left(\frac{s_2^2}{n_2}\right)^2}$$

$$t_{n-1}^p = \frac{(\bar{y}_1 - \bar{y}_2) - (\mu_1 - \mu_2)}{\sqrt{s_p^2}}$$

$$s_p^2 = \frac{s_1^2}{n} + \frac{s_2^2}{n} - \frac{2Cov(y_1, y_2)}{n}$$

$$Z = \frac{p - \pi_0}{\sqrt{\pi_0(1 - \pi_0)/n}}$$

For $H_0: \pi_1 = \pi_2$
Use χ^2 test of homogeneity =

$$\chi_{(r-1)(c-1)}^2 = \sum \sum \frac{(o_{ij} - e_{ij})^2}{e_{ij}}$$

Estimate: σ^2 by s^2

$$Z = \frac{\bar{y} - \mu_0}{\sqrt{\frac{s^2}{n}}}$$

$$Z = \frac{(\bar{y}_1 - \bar{y}_2) - (\mu_1 - \mu_2)}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}}$$