# ANALÝZA VARIANCIE

ANOVA - jednofaktorová

| Zdroj variability | Súčet štvorcov odchýlok | Stupne voľnosti | Rozptyl | F-test. kritérium | F tab. |
|---|---|---|---|---|---|
| Variabilita medzi triedami | $S_1 = n \cdot \sum_{i=1}^{m} \left(\bar{y}_{i.} - \bar{y}_{..}\right)^2$ | m-1 | $s_1^2 = \frac{S_1}{m-1}$ | $F = \frac{s_1^2}{s_r^2}$ | $F(\alpha, (m-1), (m.(n-1)))$ |
| Variabilita vo vnútri triedy | $S_r = \sum_{i=1}^{m} \sum_{j=1}^{n} \left(y_{ij} - \bar{y}_{i.}\right)^2$ | m.(n-1) | $s_r^2 = \frac{S_r}{m.(n-1)}$ | | |
| Celková variabilita | $S_c = \sum_{i=1}^{m} \sum_{j=1}^{n} \left(y_{ij} - \bar{y}_{..}\right)^2$ | m.n-1 | | | |

ANOVA - dvojfaktorová

| Zdroj variability | Súčet štvorcov odchýlok | Stupne voľnosti | Rozptyl | F-test. kritérium | F tab. |
|---|---|---|---|---|---|
| Variabilita medzi riadkami | $S_1 = n \cdot \sum_{i=1}^{m} \left(\bar{y}_{i.} - \bar{y}_{..}\right)^2$ | m-1 | $s_1^2 = \frac{S_1}{m-1}$ | $F = \frac{s_1^2}{s_r^2}$ | $F(\alpha, (m-1), ((m-1).(n-1)))$ |
| Variabilita medzi stĺpcami | $S_2 = m \cdot \sum_{j=1}^{n} \left(\bar{y}_{.j} - \bar{y}_{..}\right)^2$ | n-1 | $s_2^2 = \frac{S_2}{n-1}$ | $F = \frac{s_2^2}{s_r^2}$ | $F(\alpha, (n-1), ((m-1).(n-1)))$ |
| Variabilita vo vnútri skupiny | $S_r = \sum_{i=1}^{m} \sum_{j=1}^{n} \left(y_{ij} - \bar{y}_{i.} - \bar{y}_{.j} + \bar{y}_{..}\right)^2$ | (m-1).(n-1) | $s_r^2 = \frac{S_r}{(m-1).(n-1)}$ | | |
| Celková variabilita | $S_c = \sum_{i=1}^{m} \sum_{j=1}^{n} \left(y_{ij} - \bar{y}_{..}\right)^2$ | m.n-1 | | | |

# INTERVALY SPOĽAHLIVOSTI PRE STREDNÚ HODNOTU, ROZPTYL A SMERODAJNÚ ODCHÝLKU

$$P(\bar{x} - u_{1-\alpha/2} \cdot \frac{\sigma}{\sqrt{n}} \le \mu \le \bar{x} + u_{1-\alpha/2} \cdot \frac{\sigma}{\sqrt{n}}) = 1 - \alpha$$

$$P(\bar{x} - t_{\alpha} \cdot \frac{s_1}{\sqrt{n}} \le \mu \le \bar{x} + t_{\alpha} \cdot \frac{s_1}{\sqrt{n}}) = 1 - \alpha$$

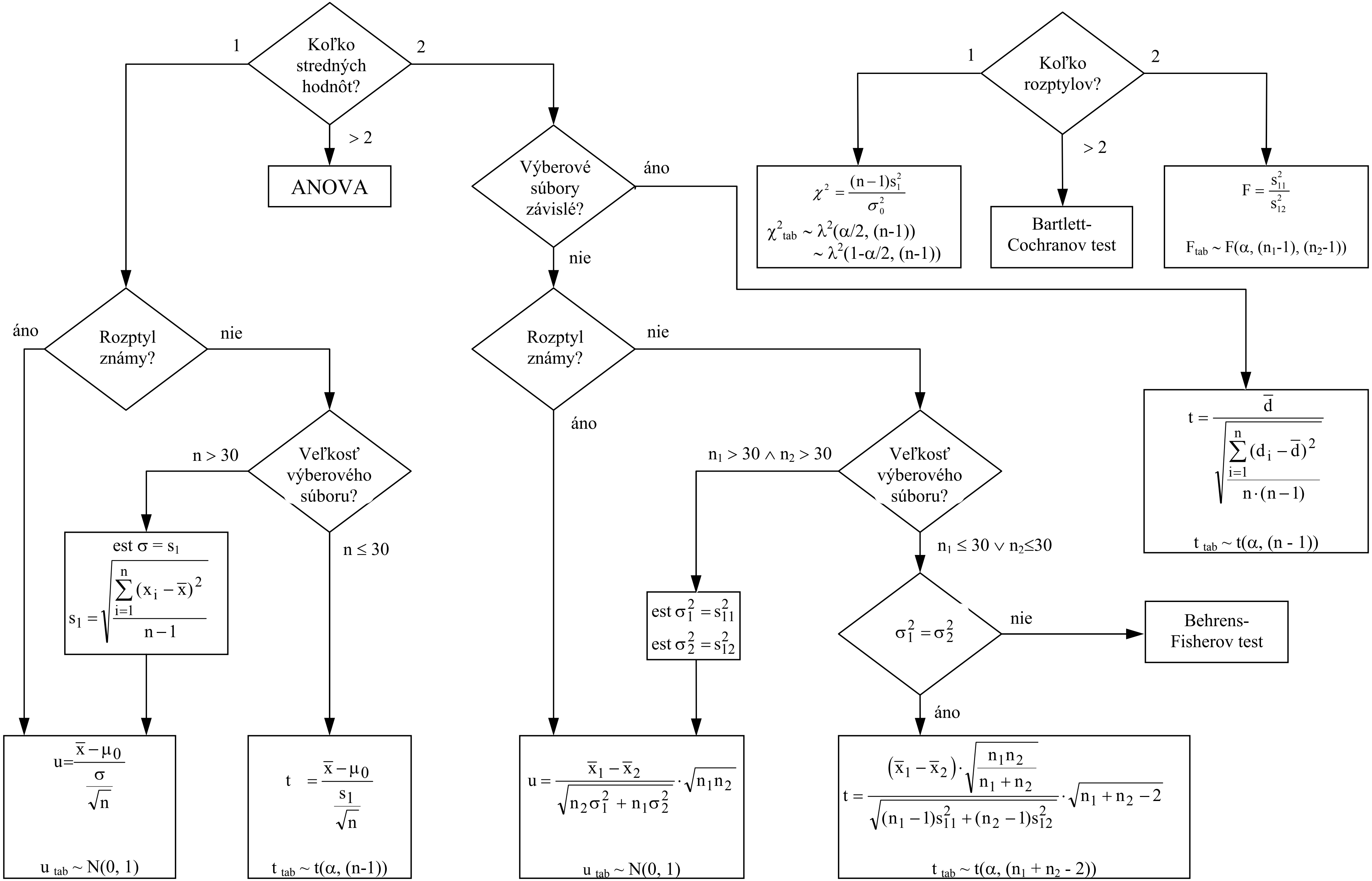
$$P\left(\frac{(n-1) \cdot s_1^2}{\chi^2_{\alpha/2}} \le \sigma^2 \le \frac{(n-1) \cdot s_1^2}{\chi^2_{1-\alpha/2}}\right) = 1 - \alpha$$

$$P\left(\sqrt{\frac{(n-1) \cdot s_1^2}{\chi^2_{\alpha/2}}} \le \sigma \le \sqrt{\frac{(n-1) \cdot s_1^2}{\chi^2_{1-\alpha/2}}}\right) = 1 - \alpha$$

## TEST ZHODY ROZDELENIA

$$\chi^2 = \sum_{i=1}^{m} \frac{(n_i - np_i)^2}{np_i}$$

## TESTY O STREDNEJ HODNOTE A ROZPTYLE



$$\chi^2 = \sum_i \sum_j \frac{((a_i b_j) - (a_i b_j)_0)^2}{(a_i b_j)_0}$$

$$(a_i b_j)_0 = \frac{(a_i) \cdot (b_j)}{n}$$

$$S_t = \frac{y_t}{y'_t}$$

$$i_{pz} = \frac{\dfrac{\sum p_1 q_1}{\sum q_1}}{\dfrac{\sum p_0 q_0}{\sum q_0}}$$

$$_{(0)}\, i_{sz} = \frac{\dfrac{\sum p_1 q_0}{\sum q_0}}{\dfrac{\sum p_0 q_0}{\sum q_0}} = \frac{\sum p_1 q_0}{\sum p_0 q_0}$$

$$_{(1)}\, i_{sz} = \frac{\dfrac{\sum p_1 q_1}{\sum q_1}}{\dfrac{\sum p_0 q_1}{\sum q_1}} = \frac{\sum p_1 q_1}{\sum p_0 q_1}$$

$$_{(0)}\, i_s = \frac{\dfrac{\sum p_0 q_1}{\sum q_1}}{\dfrac{\sum p_0 q_0}{\sum q_0}}$$

$$_{(1)}\, i_s = \frac{\dfrac{\sum p_1 q_1}{\sum q_1}}{\dfrac{\sum p_1 q_0}{\sum q_0}}$$

$$i_h = \frac{\sum p_1 q_1}{\sum p_0 q_0}$$

$$_L i_c = \frac{\sum p_1 q_0}{\sum p_0 q_0}$$

$$_P i_c = \frac{\sum p_1 q_1}{\sum p_0 q_1}$$

$$_L i_{fo} = \frac{\sum p_0 q_1}{\sum p_0 q_0}$$

$$_P i_{fo} = \frac{\sum p_1 q_1}{\sum p_1 q_0}$$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$$S_t = \frac{y_t}{y'_t}$$

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