

# STATISTIKA – přehled vzorců

$$\left( p - \frac{1}{2n} - u_{1-\alpha/2} \sqrt{\frac{p(1-p)}{n-1}} ; p + \frac{1}{2n} + u_{1-\alpha/2} \sqrt{\frac{p(1-p)}{n-1}} \right)$$

$$\left( \bar{x} - u_{1-\alpha/2} \frac{\sigma}{\sqrt{n}} ; \bar{x} + u_{1-\alpha/2} \frac{\sigma}{\sqrt{n}} \right), \left( \bar{x} - t_{1-\alpha/2}(n-1) \frac{s}{\sqrt{n}} ; \bar{x} + t_{1-\alpha/2}(n-1) \frac{s}{\sqrt{n}} \right)$$

$$H_0: \pi = \pi_0 \quad T = \frac{(p - \pi_0) \cdot \sqrt{n}}{\sqrt{\pi_0(1 - \pi_0)}}$$

$$H_1: \pi \neq \pi_0 \quad \dots \quad W = (-\infty; -u_{1-\alpha/2}) \cup (u_{1-\alpha/2}; \infty)$$

$$H_1: \pi > \pi_0 \quad \dots \quad W = (u_{1-\alpha}; \infty)$$

$$H_1: \pi < \pi_0 \quad \dots \quad W = (-\infty; -u_{1-\alpha})$$

$$H_0: \mu = \mu_0 \quad T = \frac{(\bar{x} - \mu_0) \cdot \sqrt{n}}{\sigma}$$

$$H_1: \mu \neq \mu_0 \quad \dots \quad W = (-\infty; -u_{1-\alpha/2}) \cup (u_{1-\alpha/2}; \infty)$$

$$H_1: \mu > \mu_0 \quad \dots \quad W = (u_{1-\alpha}; \infty)$$

$$H_1: \mu < \mu_0 \quad \dots \quad W = (-\infty; -u_{1-\alpha})$$

$$T = \frac{(\bar{x} - \mu_0) \cdot \sqrt{n}}{s}$$

$$H_1: \mu \neq \mu_0 \quad \dots \quad W = (-\infty; -t_{1-\alpha/2}(n-1)) \cup (t_{1-\alpha/2}(n-1); \infty)$$

$$H_1: \mu > \mu_0 \quad \dots \quad W = (t_{1-\alpha}(n-1); \infty)$$

$$H_1: \mu < \mu_0 \quad \dots \quad W = (-\infty; -t_{1-\alpha}(n-1))$$

$$H_0: \mu_1 = \dots = \mu_r \quad T = \frac{Q_m / (r-1)}{Q_v / (n-r)}$$

$$Q_{TOT} = s^2 \cdot (n-1) = \sum_{i=1}^r \sum_{j=1}^{n_i} (y_{ij} - \bar{y})^2 = Q_v + Q_m$$

$$Q_m = \sum_{i=1}^r (\bar{y}_i - \bar{y})^2 \cdot n_i$$

$$Q_v = \sum_{i=1}^r \sum_{j=1}^{n_i} (y_{ij} - \bar{y}_i)^2$$

$$W = (F_{1-\alpha}(r-1, n-r); \infty)$$

$$H_0: P(x_1) = \pi_1, \dots, P(x_r) = \pi_r \quad T = \sum_{i=1}^r \frac{(n_i - o_i)^2}{o_i}$$

$$W = (\chi^2_{1-\alpha}(r-1); \infty)$$

$$(o_i = n \cdot \pi_i)$$

$$H_0: \text{nezávislost} \quad T = \sum_{i=1}^r \sum_{j=1}^s \frac{(n_{ij} - o_{ij})^2}{o_{ij}}$$

$$W = (\chi^2_{1-\alpha}(r-1) \cdot (s-1); \infty) \quad (o_{ij} = (n_{i \cdot} \cdot n_{\cdot j}) / n)$$

$$C_p = \sqrt{\frac{T}{T+n}}$$

$$\left\langle 0, \sqrt{\frac{(q-1)}{q}} \right\rangle$$

$$q = \min(r, s)$$

$$\phi = \sqrt{\frac{T}{n}}$$

$$V = \sqrt{\frac{T}{n(q-1)}}$$

$$\langle 0, 1 \rangle$$

$$M_2^X = \overline{M_2^X} + M_2^{\bar{X}}$$

$$P_X^2 = M_2^{\bar{X}} / M_2^X$$

$$b_1 = \frac{\overline{xy} - \bar{x} \cdot \bar{y}}{\overline{x^2} - \bar{x}^2}$$

$$b_0 = \bar{y} - b_1 \bar{x}$$

$$Q_e = \sum (e_i)^2 \quad Q_y = \sum (y_i - \bar{y})^2$$

$$I^2 = 1 - Q_e / Q_y$$

$$s_e^2 = Q_e / (n-p)$$

$$H_0: \beta_1 = \dots = \beta_{p-1} = 0$$

$$T = \frac{(Q_y - Q_e) / (p-1)}{Q_e / (n-p)}$$

$$W = (F_{1-\alpha}(p-1, n-p); \infty)$$

$$r = \frac{\overline{xy} - \bar{x} \cdot \bar{y}}{\sqrt{(\overline{x^2} - \bar{x}^2) \cdot (\overline{y^2} - \bar{y}^2)}}$$

$$H_0: \rho(x, y) = 0 \quad T = \frac{r}{\sqrt{1-r^2}} \sqrt{n-2}$$

$$W = \left\{ T, |T| \geq t_{1-\frac{\alpha}{2}}(n-2) \right\}$$

$$d_t = y_t - y_{t-1}$$

$$k_t = y_t / y_{t-1}$$

$$b_t = y_t / y_0$$

$$r_t = d_t / y_{t-1}$$

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