$$\hat{x} = M + h\frac{d_p}{d_p + d_n} \qquad \tilde{x} = E + h\cdot\frac{\frac{n}{2} - N_{i-1}}{n_i} \qquad \gamma_3 = \frac{C_3}{s^3} = \frac{C_3}{\sqrt{C_2^3}} \qquad \gamma_4 = \frac{C_4}{s^4} - 3 = \frac{C_4}{C_2^2} - 3$$

$$C_r = \frac{1}{n}\sum_{i=1}^{n}(z_i - \bar{x})^r \quad \text{pre}\, n < 50 \qquad C_r = \frac{1}{n}\sum_{i=1}^{k}(z_i - \bar{x})^r n_i \quad \text{pre}\, n \geq 50$$

$$P_n(x) = \binom{n}{x} p^x (1-p)^{n-x} \qquad P(x) = e^{-\lambda}\frac{\lambda^x}{x!} \qquad f(t,\lambda) = \begin{cases} \lambda e^{-\lambda t}, & t \geq 0 \\ 0, & t < 0 \end{cases}$$

$$E(X) = np \qquad E(X) = \lambda \qquad E(T) = 1/\lambda$$

$$D(X) = np(1-p) \qquad D(X) = \lambda \qquad D(T) = 1/\lambda^2$$

$$\mu_{D2} = \bar{x} - u_{1-\frac{\alpha}{2}}\frac{\sigma}{\sqrt{n}} \qquad \mu_{H2} = \bar{x} + u_{1-\frac{\alpha}{2}}\frac{\sigma}{\sqrt{n}} \qquad \mu_{D1} = \bar{x} - u_{1-\alpha}\frac{\sigma}{\sqrt{n}} \qquad \mu_{H1} = \bar{x} + u_{1-\alpha}\frac{\sigma}{\sqrt{n}}$$

$$\mu_{D2} = \bar{x} - t_{1-\frac{\alpha}{2},n-1}\frac{s}{\sqrt{n}} \qquad \mu_{H2} = \bar{x} + t_{1-\frac{\alpha}{2},n-1}\frac{s}{\sqrt{n}} \qquad \mu_{D1} = \bar{x} - t_{1-\alpha,n-1}\frac{s}{\sqrt{n}} \qquad \mu_{H1} = \bar{x} + t_{1-\alpha,n-1}\frac{s}{\sqrt{n}}$$

$$\sigma^2{}_{D2} = \frac{(n-1)s^2}{\chi^2_{1-\frac{\alpha}{2},n-1}} \qquad \sigma^2{}_{H2} = \frac{(n-1)s^2}{\chi^2_{\frac{\alpha}{2},n-1}} \qquad \sigma^2{}_{D1} = \frac{(n-1)s^2}{\chi^2_{1-\alpha,n-1}} \qquad \sigma^2{}_{H1} = \frac{(n-1)s^2}{\chi^2_{\alpha,n-1}}$$

$$\pi_{D2} = p - u_{1-\frac{\alpha}{2}}\sqrt{\frac{p(1-p)}{n}} \quad \pi_{H2} = p + u_{1-\frac{\alpha}{2}}\sqrt{\frac{p(1-p)}{n}},\ \pi_{D1} = p - u_{1-\alpha}\sqrt{\frac{p(1-p)}{n}},\ \pi_{H1} = p + u_{1-\alpha}\sqrt{\frac{p(1-p)}{n}}$$

Hypotézy		Rozptyl	Testovacia charakteristika	Kritický obor
H_0	$\mu = \mu_0$	známy	$z_0 = \frac{\bar{x} - \mu_0}{\sigma/\sqrt{n}}$	$\lvert z_0 \rvert > u_{\frac{1+\gamma}{2}}$
H_1	$\mu \neq \mu_o$			
H_0	$\mu \leq \mu_0$			$z_0 > u_\gamma$
H_1	$\mu > \mu_o$			
H_0	$\mu \geq \mu_0$			$z_0 < -u_\gamma$
H_1	$\mu < \mu_o$			
H_0	$\mu = \mu_0$	neznámy	$t_0 = \frac{\bar{x} - \mu_0}{s/\sqrt{n}}$	$\lvert t_0 \rvert > t_{\frac{1+\gamma}{2},n-1}$
H_1	$\mu \neq \mu_o$			
H_0	$\mu \leq \mu_0$			$t_0 > t_{\gamma,n-1}$
H_1	$\mu > \mu_o$			
H_0	$\mu \geq \mu_0$			$t_0 < -t_{\gamma,n-1}$
H_1	$\mu < \mu_o$			

Hypotézy	Rozptyl	Testovacia charakteristika	Kritický obor
$H_0 \quad \mu_1-\mu_2=\mu_0$ $H_1 \quad \mu_1-\mu_2\neq\mu_0$	známy	$z_0=\frac{(\bar{x}_1-\bar{x}_2)-\mu_0}{\sqrt{\sigma_1^2/n_1+\sigma_2^2/n_2}}$	$\lvert z_0\rvert > u_{\frac{1+\gamma}{2}}$
$H_0 \quad \mu_1-\mu_2\leq\mu_0$ $H_1 \quad \mu_1-\mu_2>\mu_0$			$z_0 > u_{\gamma}$
$H_0 \quad \mu_1-\mu_2\geq\mu_0$ $H_1 \quad \mu_1-\mu_2<\mu_0$			$z_0 < -u_{\gamma}$
$H_0 \quad \mu_1-\mu_2=\mu_0$ $H_1 \quad \mu_1-\mu_2\neq\mu_0$	neznámy $\sigma_1^2=\sigma_2^2$	$t_0=\frac{(\bar{x}_1-\bar{x}_2)-\mu_0}{s_p\cdot\sqrt{(1/n_1)+(1/n_2)}}$	$\lvert t_0\rvert > t_{\frac{1+\gamma}{2},n_1+n_2-2}$
$H_0 \quad \mu_1-\mu_2\leq\mu_0$ $H_1 \quad \mu_1-\mu_2>\mu_0$			$t_0 > t_{\gamma,n_1+n_2-2}$
$H_0 \quad \mu_1-\mu_2\geq\mu_0$ $H_1 \quad \mu_1-\mu_2<\mu_0$			$t_0 < -t_{\gamma,n_1+n_2-2}$
$H_0 \quad \mu_1-\mu_2=\mu_0$ $H_1 \quad \mu_1-\mu_2\neq\mu_0$	neznámy $\sigma_1^2\neq\sigma_2^2$	$t_0=\frac{(\bar{x}_1-\bar{x}_2)-\mu_0}{\sqrt{s_1^2/n_1+s_2^2/n_2}}$	$\lvert t_0\rvert > t_{\frac{1+\gamma}{2},\nu}$
$H_0 \quad \mu_1-\mu_2\leq\mu_0$ $H_1 \quad \mu_1-\mu_2>\mu_0$			$t_0 > t_{\gamma,\nu}$
$H_0 \quad \mu_1-\mu_2\geq\mu_0$ $H_1 \quad \mu_1-\mu_2<\mu_0$			$t_0 < -t_{\gamma,\nu}$
		kde $s_p^2=\frac{(n_1-1)s_1^2+(n_2-1)s_2^2}{n_1+n_2-2}$	kde $\nu=\frac{(s_1^2/n_1+s_2^2/n_2)^2}{\frac{(s_1^2/n_1)^2}{n_1-1}+\frac{(s_2^2/n_2)^2}{n_2-1}}$

Hypotézy	Testovacia charakteristika	Kritický obor
$H_0 \quad \sigma^2=\sigma_0^2$ $H_1 \quad \sigma^2\neq\sigma_0^2$	$\chi_0^2=\frac{(n-1)s^2}{\sigma_0^2}$	$\chi_0^2 > \chi^2_{\frac{1+\gamma}{2},n-1}$ $\chi_0^2 < \chi^2_{1-\frac{1+\gamma}{2},n-1}$
$H_0 \quad \sigma^2\leq\sigma_0^2$ $H_1 \quad \sigma^2>\sigma_0^2$		$\chi_0^2 > \chi^2_{\gamma,n-1}$
$H_0 \quad \sigma^2\geq\sigma_0^2$ $H_1 \quad \sigma^2<\sigma_0^2$		$\chi_0^2 < \chi^2_{1-\gamma,n-1}$

Hypotézy	Testovacia charakteristika	Kritický obor
$H_0 \quad \sigma_1^2=\sigma_2^2$ $H_1 \quad \sigma_1^2\neq\sigma_2^2$	$F_0=\frac{s_1^2}{s_2^2}$ *	$F_0 > F_{\frac{1+\gamma}{2},n_1-1,n_2-1}$ $F_0 < F_{1-\frac{1+\gamma}{2},n_1-1,n_2-1}$
$H_0 \quad \sigma_1^2\leq\sigma_2^2$ $H_1 \quad \sigma_1^2>\sigma_2^2$		$F_0 > F_{\gamma,n_1-1,n_2-1}$
$H_0 \quad \sigma_1^2\geq\sigma_2^2$ $H_1 \quad \sigma_1^2<\sigma_2^2$		$F_0 < F_{1-\gamma,n_1-1,n_2-1}$

* Indexy 1 a 2 volíme tak, aby platilo: $\frac{s_1^2}{s_2^2} > 1$.

Hypotézy	Testovacia charakteristika	Kritický obor
$H_0 \quad p = p_0$ $H_1 \quad p \neq p_o$	$z_0 = \dfrac{\hat{p} - p_0}{\sqrt{p_0(1 - p_0)/n}}$	$\lvert z_0 \rvert > u_{\frac{1+\gamma}{2}}$
$H_0 \quad p \leq p_0$ $H_1 \quad p > p_o$		$z_0 > u_\gamma$
$H_0 \quad p \geq p_0$ $H_1 \quad p < p_o$		$z_0 < -u_\gamma$

Hypotézy	Testovacia charakteristika	Kritický obor
$H_0 \quad p_1 - p_2 = p_0$ $H_1 \quad p_1 - p_2 \neq p_0$	$z_0 = \dfrac{\hat{p}_1 - \hat{p}_2}{\sqrt{\hat{p}(1 - \hat{p})(1/n_1 + 1/n_2)}}$	$\lvert z_0 \rvert > u_{\frac{1+\gamma}{2}}$
$H_0 \quad p_1 - p_2 \leq p_0$ $H_1 \quad p_1 - p_2 > p_0$		$z_0 > u_\gamma$
$H_0 \quad p_1 - p_2 \geq p_0$ $H_1 \quad p_1 - p_2 < p_0$		$z_0 < -u_\gamma$
	kde $\hat{p} = \dfrac{n_1 \hat{p}_1 + n_2 \hat{p}_2}{n_1 + n_2}$ je združený odhad podielu nezhodných prvkov súboru.	

Pearsonov test:

$$P=\sum_{i=1}^{k}\frac{(np_i-n_i)^2}{np_i}=\sum_{i=1}^{k}\frac{n_i^2}{np_i}-n \qquad \text{W: } P>\chi_\gamma^2(k-1-r) \qquad p_i=F(t_i)-F(t_{i-1})$$

Cochranovo pravidlo: $t_0=\inf\{\, x; F(x)>0 \,\}$

$np_i\geq 5$, $\quad np_i\geq 4$ pre $k-1-r\geq 3$, $\quad np_i\geq 1$ pre $k-1-r\geq 6$ $\qquad t_k=\sup\{\, x; F(x)<1 \,\}$

Kolmogorovov test:

$$D_1=\max\{\max_{1\leq i\leq l}\Delta_i;\ \max_{1\leq i\leq l}\Delta_i'\} \qquad \text{W: } D_1>D_\alpha(n) \qquad \Delta_i=\left|F(x_{(N_i)})-F_n(x_{(N_i)})\right|$$

$$\Delta'_i=\left|F(x_{(N_i)})-F_n(x_{(N_{i-1})})\right|$$

Kolmogorovov-Smirnovov test:

1) $n_1, n_2\geq 50$ $\qquad D_2=\max_{x\in R}\left|F_{n_1}(x)-G_{n_2}(x)\right|$ $\qquad$ W: $D_2\geq\frac{1}{\sqrt{n_o}}.\lambda_\alpha$ $\quad$ kde $\quad n_o=\frac{n_1\,.\,n_2}{n_1+n_2}$

2) $n_1, n_2 < 50$ $\quad$ a) $n_1 = n_2 = n$ $\qquad d=n.\max_{x\in R}\left|F_n(x)-G_n(x)\right|$ $\qquad$ W: $d\geq d_\alpha(n)$

b) $n_1\neq n_2$ $\qquad \Delta=n_1\,.\,n_2\,.\max_{x\in R}\left|F_{n_1}(x)-G_{n_2}(x)\right|$ $\qquad$ W: $\Delta\geq\Delta_\alpha(n_1, n_2)$

Test normality pomocou momentových charakteristík:

1) pomocou γ_3 : $\qquad D_3=\sqrt{\frac{6(n-2)}{(n+1)(n+3)}}$ $\qquad$ W: $|\gamma_3|>u_{\frac{1+\gamma}{2}}D_3$

2) pomocou γ_4 : $\qquad D_4=\sqrt{\frac{24n(n-2)(n-3)}{(n+1)^2(n+3)(n+5)}}$ $\qquad$ W: $\left|\gamma_4+\frac{6}{n+1}\right|>u_{\frac{1+\gamma}{2}}D_4$

Grubbsov test: $\qquad T(n)=\frac{x_{(n)}-\bar{x}}{s}.\sqrt{\frac{n}{n-1}}$ $\qquad T(1)=\frac{\bar{x}-x_1}{s}\cdot\sqrt{\frac{n}{n-1}}$

W: $T(n)>T_\alpha(n)$ $\qquad$ W: $T(1)>T_\alpha(n)$

Dixonov test: $\qquad Q(n)=\frac{x_{(n)}-x_{(n-1)}}{x_{(n)}-x_{(1)}}$ $\qquad Q(1)=\frac{x_{(2)}-x_{(1)}}{x_{(n)}-x_{(1)}}$

W: $Q(n)>Q_\alpha(n)$ $\qquad$ W: $Q(1)>Q_\alpha(n)$

Regresná priamka:

$Y=b_0+b_1x$ $\qquad b_1\equiv b_{yx}=\frac{s_{xy}}{s_x^2}=\frac{\overline{xy}-\bar{x}.\bar{y}}{\overline{x^2}-\bar{x}^2}$ $\qquad b_0=\bar{y}-b_1\bar{x}$

Korelačný koeficient:

$$r_{xy}=\frac{s_{xy}}{s_xs_y}=\frac{\overline{xy}-\bar{x}.\bar{y}}{\sqrt{\left(\overline{x^2}-\bar{x}^2\right)\left(\overline{y^2}-\bar{y}^2\right)}} \qquad r_{xy}^2=\frac{s_{xy}^2}{s_x^2s_y^2}=\frac{s_{xy}}{s_x^2}\cdot\frac{s_{xy}}{s_y^2}=b_{xy}.b_{yx}$$

Kontingenčné koeficienty:

$C_{Cr}=\sqrt{\frac{G}{n.h}}$, h = minimum(r-1, s-1) $\qquad C_P=\sqrt{\frac{G}{G+n}}$ $\qquad G=\sum_{i=1}^{r}\sum_{j=1}^{s}\frac{(n_{ij}-\psi_{ij})^2}{\psi_{ij}}$