

$$S_T = \sum_{i=1}^n y_i^2 - n\bar{y}^2 = 196,917$$

$$S_A = \sum_{j=1}^3 m_j (\bar{y}_j - \bar{y})^2 = 170,16$$

$$S_e = S_T - S_A = 26,75$$

$$H_0: \mu_A = \mu_B = \mu_C \quad \alpha = 0,05$$

	S	df	MS	F-value
COUNTRY	170,16	3-1	85,08	28,65
ERROR	26,75	12-3	2,972	
TOTAL	196,917	12-1	17,9	

$$F_{0,95}$$

$$F_{0,95}(3-1; 12-3) = 4,2565$$

$$\bar{W}_\alpha = \langle 0; 4,2565 \rangle$$

$$F\text{-value} \notin \bar{W}_{0,05} \Rightarrow H_0 \text{ ZAM.}$$

$$S_{RES}^2 = MS_e$$

$$\frac{(\bar{y}_j - \bar{y}_k)^2}{k-1}$$

$$S_{RES}^2 = \left(\frac{1}{m_j} + \frac{1}{m_k} \right)$$

	B	C
A	27,41	12,36
B		5,05

$$\mu_A \neq \mu_B$$

$$\mu_A \neq \mu_C$$

$$\mu_B \neq \mu_C$$

$$RES_i = y_i - \bar{y}_j$$

$$\sum_{i=1}^n RES_i^2 = -5,625$$

$$\sum_{i=1}^n RES_i^4 = 101,33$$

$$SKEW = \frac{\frac{1}{n} \cdot \sum_{i=1}^n RES_i^3}{\left(\frac{1}{n} S_e \right)^{\frac{3}{2}}} = -0,14$$

$$KURT = \frac{\frac{1}{n} \sum_{i=1}^n RES_i^4}{\left(\frac{1}{n} S_e \right)^{\frac{4}{2}}} = 3 = -1,3$$

$$JB = \frac{n}{6} \left[SKEW^2 + \frac{1}{4} KURT^2 \right] = 0,8856$$

$$JB \sim \chi^2(2)$$

$$\bar{W}_{0,05} = \langle 0; \chi_{0,95}^2(2) \rangle = \langle 0; 5,991 \rangle \quad JB \in \bar{W}_{0,05} \Rightarrow NEZ.$$

$$s_{RES}^2 = MS_e = 2,972$$

$$\frac{1}{n_j - 1} \sum_{i=1}^{n_j} (y_{ji} - \bar{y}_j)^2 = s_j^2 = \frac{1}{n_j - 1} \left(\sum_{i=1}^{n_j} y_{ji}^2 - n_j \bar{y}_j^2 \right)$$

$$s_A^2 = 2,917$$

$$s_B^2 = 4$$

$$s_C^2 = 2,5$$

$$H_0: \sigma_1^2 = \sigma_2^2 = \sigma_3^2$$

$$C = 1 + \frac{1}{3(k-1)} \left[\sum_{j=1}^k \frac{1}{n_j - 1} - \frac{1}{n - k} \right] = 1,162$$

$$\bar{W}_{0,05} = \langle 0,5,991 \rangle$$

$$B \sim \chi^2(k-1)$$

$$B = \frac{1}{C} \left[(n - k) \cdot \ln(s_{RES}^2) - \sum_{j=1}^k (n_j - 1) \cdot \ln(s_j^2) \right] = 0,133$$

$$B \in \bar{W}_{0,05} \Rightarrow \text{NEZ } H_0$$