

Summary Table for chi-square analysis tests

Type Chi-Sq Test	Null Hypothesis	Degree of freedom, df	Statistics	Acceptance Rule (H_0)
<u>Goodness-of-fit</u>	$H_0: O = E$	$(k-1)$	$\chi^2 = \sum \frac{(O-E)^2}{E}$	$\chi^2 \leq \chi^2_{1-\alpha}$
<u>Independence</u>	$H_0: O = E$	$(r-1)(c-1)$	$\chi^2 = \sum \frac{(O-E)^2}{E}$	$\chi^2 \leq \chi^2_{1-\alpha}$
<u>Homogeneity</u>	$H_0 : \pi_1 = \pi_2 = \dots = \pi_i$	$(r-1)(c-1)$	$\chi^2 = \sum \frac{(O-E)^2}{E}$	$\chi^2 \leq \chi^2_{1-\alpha}$
<u>Variance</u>	$H_0 : \sigma^2 \leq \sigma_0^2$ Or $H_0 : \sigma^2 \geq \sigma_0^2$	$(n-1)$	$\chi^2 = \frac{(n-1)s^2}{\sigma^2}$	$\frac{(n-1)s^2}{\chi^2_{1-\frac{\alpha}{2}}} \leq \sigma^2 \leq \frac{(n-1)s^2}{\chi^2_{\frac{\alpha}{2}}}$