

Summary of Hypothesis Tests

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Test	Statistic	Formulas	df	Table	Effect Size
Z-test	$z = \frac{(\bar{x} - \mu_{hyp})}{\sigma_{\bar{x}}}$	$\sigma_{\bar{x}} = \frac{\sigma_x}{\sqrt{n}}$	N/A	A	$d = \frac{ \bar{x} - \mu_{hyp} }{\sigma_x}$
T-test one mean	$t = \frac{(\bar{x} - \mu_{hyp})}{s_{\bar{x}}}$	$s_{\bar{x}} = \frac{s_x}{\sqrt{n}}$	n-1	D	$d = \frac{ \bar{x} - \mu_{hyp} }{s_x}$
Independent measures t-test	$t = \frac{\bar{x} - \bar{y}}{s_{\bar{x} - \bar{y}}}$	$s_{\bar{x} - \bar{y}} = sp \sqrt{\left(\frac{1}{n_x} + \frac{1}{n_y}\right)}$ $sp = \sqrt{\frac{(n_x - 1)s_x^2 + (n_y - 1)s_y^2}{(n_x - 1) + (n_y - 1)}}$	$n_x + n_y - 2$	D	$d = \frac{ \bar{x} - \bar{y} }{sp}$
Dependent measures t-test	$t = \frac{\bar{D} - \mu_{hyp}}{s_{\bar{D}}}$	$s_{\bar{D}} = \frac{s_D}{\sqrt{n}}$	n-1 (n is the no. pairs)	D	$d = \frac{\bar{D}}{s_D}$
χ^2 test for frequencies	$\chi^2 = \sum \frac{(fo - fe)^2}{fe}$	$fe = \frac{n}{C}$ (for equal frequencies)	C-1 (C is no. categories)	I	
χ^2 test for independence	$\chi^2 = \sum \frac{(fo - fe)^2}{fe}$	$fe = \frac{(RowSum)(ColSum)}{TotalSum}$	(R-1)(C-1)	I	
Test for one correlation = 0	$t = \frac{r}{\sqrt{\frac{1-r^2}{n-2}}}$		n-2 (n is the no. pairs)	G	
Test for two correlations ($\rho_1 = \rho_2$)	$z = \frac{z'_1 - z'_2}{\sigma_{z'_1 - z'_2}}$	$\sigma_{z'_1 - z'_2} = \sqrt{\frac{1}{n_1 - 3} + \frac{1}{n_2 - 3}}$ $z' = \frac{\ln(1+r) - \ln(1-r)}{2}$	N/A	H and A	
One Factor ANOVA	$F = \frac{MS_{bet}}{MS_w}$	$MS_{bet} = \frac{SS_{bet}}{df_{bet}}$ $SS_{bet} = \sum_j n_j (\bar{X}_j - \bar{X})^2$ $MS_w = \frac{SS_w}{df_w}$ $SS_w = \sum_j \sum_i (X_{ij} - \bar{X}_j)^2$	$df_{bet} = k - 1$ $df_w = n_{total} - k$	E	