

TERMS

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FORMULAS

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| <ul style="list-style-type: none"> <li>• <math>\square = (b - a) \times \frac{1}{(b-a)}</math> (finite curve)</li> <li>• <math>Z = \frac{\bar{x} - \mu}{\sigma}</math> (z-score)</li> <li>• <math>X \sim N(\mu, \sigma)</math></li> <li>• <math>\bar{X} \sim N(\mu, \frac{\sigma}{\sqrt{n}})</math></li> <li>• <math>SEM = \frac{s}{\sqrt{n}}</math> (compute standard error)</li> <li>• <math>t = \frac{\bar{X} - \mu_0}{\frac{s}{\sqrt{n}}}</math> [NP]</li> <li>• <math>t = \frac{\bar{x}_d}{\frac{s_d}{\sqrt{n}}}</math> [matched pair]</li> <li>• <math>t = \frac{(\bar{x}_1 - \bar{x}_2)}{\sqrt{\frac{(s_1)^2}{n_1} + \frac{(s_2)^2}{n_2}}} \sim t(K)</math> [NHST]</li> <li>• <math>(\bar{x} \pm t^{**} \times \frac{s}{\sqrt{n}})</math> [confidence interval]</li> <li>• <math>\bar{x} - t^{**} \times \frac{s}{\sqrt{n}} &lt; \mu &lt; \bar{x} + t^{**} \times \frac{s}{\sqrt{n}}</math> [confidence interval when sample mean given]</li> </ul> | <ul style="list-style-type: none"> <li>• <math>IQR = Q_3 - Q_1</math></li> <li>• <math>K = 1.5</math></li> <li>• Lower fence: <math>Q_1 - K \times IQR</math></li> <li>• Upper fence: <math>Q_3 + K \times IQR</math></li> <li>• <math>t = \frac{\Delta \bar{x} - \Delta \mu}{\frac{\Delta s}{\sqrt{n}}}</math></li> <li>• <math>df = n - 1</math></li> <li>• <math>df(\text{treatment}) = k - 1</math> (k) <math>\leftarrow</math> number of categories</li> <li>• <math>df(\text{error}) = N - k</math> (N) <math>\leftarrow</math> total sample size.</li> <li>• <math>MSTr = SSTr / (k - 1)</math> SSTr <math>\leftarrow</math> sum of treatment</li> <li>• <math>MSE = SSE / (N - k)</math> SSE <math>\leftarrow</math> sum of error</li> <li>• <math>F = \frac{MSTr}{MSE}</math></li> <li>• <math>C = 1 - \alpha</math> [confidence level]</li> <li>• <math>((\bar{x}_1 - \bar{x}_2) - t^{**} \times \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}), ((\bar{x}_1 - \bar{x}_2) + t^{**} \times \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}})</math> [qt(<math>\frac{\alpha}{2}</math>, 347.41, lower.tail = F) <math>\Rightarrow t^{**}</math>]</li> </ul> |
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