

## Statistical Tests Demonstrated in Stat-Tree Version 5.1

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### For Comparative Hypotheses:

#### Parametric

- Independent Samples  $t$ -Test\*
- Paired-samples  $t$ -Test\*
- One-way Analysis of Variance (ANOVA)\*
- One-way Analysis of Covariance (ANCOVA)
- Two-way Analysis of Variance (Factorial ANOVA)
- Two-way Analysis of Covariance (Factorial ANCOVA)
- Repeated Measures Analysis of Variance (ANOVA)
- One-way Multivariate Analysis of Variance (MANOVA)
- One-way Multivariate Analysis of Covariance (MANCOVA)
- Two-way Multivariate Analysis of Variance (Factorial MANOVA)
- Two-way Multivariate Analysis of Covariance (Factorial MANCOVA)

#### Non-Parametric

- Pearson One-way Chi-Square\*
- Contingency Analysis (Factorial Chi-Square)
- McNemar's Test
- Mann-Whitney  $U$ \*
- Kruskal-Wallis  $H$ \*
- Wilcoxon Matched Pairs Signed-Rank Test\*
- Cochran's  $Q$
- Friedman Two-way Analysis of Variance

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### For Relational Hypotheses:

#### Parametric

- Pearson Product-moment Correlation\*
- Canonical Correlation
- Simple Linear Regression\*
- Multiple Regression\*

#### Non-Parametric

- Cramer's  $V$
- Spearman Rank Order Correlation\*
- Biserial Correlation\*
- Somers'  $d$
- Logistic Regression
- Discriminant Analysis

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### For Testing Assumptions about Data

#### Normality

- Kolmogorov-Smirnov\*
- Shapiro-Wilks\*\*
- Doornik-Hansen\*\*\*

#### Equality of Variance

- Levene's Test for Homogeneity of Variance\*

#### Tests for Outliers

- Mahalanobis Distance\*\*
- Minimum Covariance Determinant (MCD)\*\*\*

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Tests demonstrated in R, SPSS™, SAS™, and Stata™

\* Tests also demonstrated in Julia and Python.

\*\* Tests also demonstrated in Python.

\*\*\* Tests also demonstrated in Julia.