

Nonparametric Association Tests (Binary Dependent)

Author: Autumn Laughbaum, Golden Helix, Inc.

Overview

This function makes use of the *scipy* package, specifically the *scipy.stats.ranksums* and *scipy.stats.mannwhitneyu* functions. With one binary dependent column, the user can perform nonparametric association tests on all numeric columns.

Recommended Directory Location

Save the script to the following directory:

*..\Application Data\Golden Helix SVS\UserScripts\Spreadsheet\Numeric

Note: The **Application Data** folder is a hidden folder on Windows operating systems and its location varies between XP and Vista. The easiest way to locate this directory on your computer is to open SVS and select **Tools > Open Folder > UserScripts Folder**. If saved to the proper folder, this script will be accessible from the spreadsheet **Numeric** menu.

Preparing to use the Script

This script should be run from a spreadsheet containing a binary dependent column and several active numeric columns.

1. From an appropriate spreadsheet, choose **Numeric > Nonparametric Association Tests (Binary Dependent)**. The Nonparametric Association Tests (Binary Dependent) dialog allows the user to choose the test and output options.
2. Choose the Wilcoxon Rank-sum test or Mann-Whitney test and choose to output or not the Bonferroni adjusted p-values and the $-\log_{10}$ p-values.
3. The resulting spreadsheet has a column containing the test statistic for each active numeric column in the original spreadsheet, a p-value column and optional $-\log_{10}(P)$ and Bonf-P columns. If a marker map was applied to the columns of the original spreadsheet, it is reapplied to the rows or the Results spreadsheet.

For more information about the internal *scipy* functions see:

<http://docs.scipy.org/doc/scipy/reference/generated/scipy.stats.ranksums.html#scipy.stats.ranksums>

and

<http://docs.scipy.org/doc/scipy/reference/generated/scipy.stats.mannwhitneyu.html#scipy.stats.mannwhitneyu>