**StatsAngularDistanceTest**, **StatsKWTest**, **StatsWilcoxonRankTest**

# StatsWRCorrelationTest

**StatsWRCorrelationTest** [***flags***] ***waveA, waveB***

The StatsWRCorrelationTest operation performs a Weighted Rank Correlation test on *waveA* and *waveB*, which contain the ranks of sequential factors. The waves are 1-based, integer ranks of factors in the range 1-2^31.

StatsWRCorrelationTest computes a top-down correlation coefficient using Savage sums as well as the critical and P-values. Output is to the W_StatsWRCorrelationTest wave in the current data folder or optionally to a table.

**Flags**

| | |
|---|---|
| /ALPH = *val* | Sets the significance level (default *val*=0.05). |
| /Q | No results printed in the history area. |
| /T=*k* | Displays results in a table. *k* specifies the table behavior when it is closed.<br>*k*=0: Normal with dialog (default).<br>*k*=1: Kills with no dialog.<br>*k*=2: Disables killing.<br>The table is associated with the test, not the data. If you repeat the test, it will update any existing table with the new results. |
| /Z | Ignores errors. |

**Details**

The StatsWRCorrelationTest input waves must be one-dimensional and have the same length. The waves are 1-based, integer ranks of factors corresponding to the point number. Ranks may have ties in which case you should repeat the rank value. For example, if the second and third entries have the same rank you should enter {1,2,2,4}. $H_0$ stipulates that the same factors are most important in both groups represented by *waveA* and *waveB*.

The top-down correlation is the sum of the product of Savage sums for each row:

$$r_{TD} = \frac{\sum_{i=1}^{n} S_{iA} S_{iB} - n}{n - S_1},$$

where $n$ is the number of rows and the Savage sum $S_i$ is

$$S_i = \sum_{j=i}^{n} \frac{1}{j},$$

and $S_{iA}$ corresponds to the $S_i$ value of the rank of the data in row ($i$-1) of *waveA*.

**References**

Iman, R.L., and W.J. Conover, A measure of top-down correlation, *Technometrics*, *29*, 351-357, 1987.

See, in particular, Chapter 19 of:

Zar, J.H., *Biostatistical Analysis*, 4th ed., 929 pp., Prentice Hall, Englewood Cliffs, New Jersey, 1999.

**See Also**

Chapter III-12, **Statistics** for a function and operation overview; **StatsLinearCorrelationTest**, **StatsRankCorrelationTest**, **StatsTopDownCDF**, and **StatsInvTopDownCDF**.