$$\chi^2 = \sum_{i=0}^{n-1} z_i^2 \left(n_i - 3\right) - \frac{\left(\sum_{i=0}^{n-1} z_i \left(n_i - 3\right)\right)^2}{\sum_{i=0}^{n-1} \left(n_i - 3\right)},$$

where z_i is the Fisher's z transform of the correlation coefficients and n_i is the corresponding sample size. It computes the common correlation coefficient rw and its transform zw.

$$z_w = \frac{\sum_{i=0}^{n-1} z_i \left(n_i - 3\right)}{\sum_{i=0}^{n-1} \left(n_i - 3\right)}$$

These values are calculated even when not appropriate, such as when χ^2 exceeds the critical value and H_0 (all samples came from populations of identical correlation coefficients) is rejected.

The operation also computes ChiSquaredP (due to S.R. Paul), a different variant of χ^2 that is corrected for bias and should be compared with the same critical value. Output is to the W_StatsMultiCorrelationTest wave in the current data folder or optionally to a table.

References

See, in particular, Chapters 19 and 11 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, **StatsCircularCorrelationTest**, **StatsDunnettTest**, **StatsTukeyTest**, **StatsInvQCDF**, and **StatsScheffeTest**.

StatsNBinomialCDF

StatsNBinomialCDF(*x*, *k*, *p*)

The StatsNBinomialCDF function returns the negative binomial cumulative distribution function

$$F(x;k,p) = Betai(k, x+1; p),$$

where **betai** is the regularized incomplete beta function.

See Also

Chapter III-12, **Statistics** for a function and operation overview; the **StatsNBinomialPDF** and **StatsInvNBinomialCDF** functions.

StatsNBinomialPDF

StatsNBinomialPDF(*x*, *k*, *p*)

The StatsNBinomialPDF function returns the negative binomial probability distribution function

$$f(x;k,p) = \left(\begin{array}{c} x+k-1 \\ k-1 \end{array} \right) p^k (1-p)^x, \qquad\qquad x = 0,1,2...$$

where $\left(\begin{array}{c} a \\ b \end{array} \right)$ is the **binomial** function.

The binomial distribution expresses the probability of the *k*th success in the *x+k* trial for two mutually exclusive results (success and failure) and *p* the probability of success in a single trial.