

Package: nppbib (via r-universe)

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Title Nonparametric Partially-Balanced Incomplete Block Design
Analysis

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Description Implements a nonparametric statistical test for rank or
score data from partially-balanced incomplete block-design
experiments.

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URL <https://github.com/dalling1>

NeedsCompilation no

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Repository <https://dalling1.r-universe.dev>

RemoteUrl <https://github.com/cran/nppbib>

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RemoteSha efedbd1839bfe60d4b4bd315a665ca1de87a71ed

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Description

Implements a nonparametric statistical test for rank or score data from partially-balanced incomplete block-design experiments.

Usage

```
nppbib(datafilename)
```

Arguments

datafilename A character string giving the name of the data file to analyse.

Details

This package implements the nonparametric statistical test for rank or score data from partially-balanced incomplete block-design experiments described in the paper by DJ Best, JCW Rayner and David Allingham, (*Journal of Sensory Studies*, 2011). It reads a dataset from a plain-text file and returns a p-value, as well as other values of interest. If the file contains scores, these are converted to ranks for the analysis. Ties are allowed.

Data format:

Each line should list the rank or score for each product tested by that judge, with entries of NA for products that that judge did not test. The number of lines is, therefore, equal to the number of judges, and the number of columns is equal to the number of products.

Comments (starting with \#) are allowed (both on their own lines and at the end of lines of data).

Currently there are no error checks on the format. Users should examine the values of Njudges, Nproducts and Nperjudgement in the output to ensure that they are as expected.

Value

\$Njudges	the number of judges in the data file (number of data lines).
\$Nproducts	the number of products tested (number of data columns).
\$Nperjudgement	the number of products that each judge considered.
\$rawdata	a matrix containing the data that was read from the input file (ranks or scores).
\$rankdata	a matrix containing the ranked data.
\$varCovarMatrix	the variance-covariance matrix of the ranked data.
\$adjustedSum	the adjusted sum of ranks of the products, also called the product effects.
\$SMstatistic	the Skilling-Mack test statistic computed from the ranked data.
\$pvalue	the p-value for the null hypothesis that there exist no pairwise differences between products.

Author(s)

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Best, D.J.

References

“A Statistical Test for Ranking Data from Partially-Balanced Incomplete Block Designs”, Best, D.J., Rayner, J.C.W. and Allingham, David. *Journal of Sensory Studies*, 26(1): 81–84, 2011.

Examples

```
# Analyse the sample data set provided with this package:  
nppbib(system.file('extdata', 'sm6.txt', package='nppbib'))
```

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