Package 'npst'

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Type Package

Title Generalization of Hewitt's Seasonality Test

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Suggests parallel

Description Package 'npst' generalizes Hewitt's (1971) test for seasonality and Rogerson's (1996) extension based on Monte-Carlo simulation.

License GPL-2

LazyLoad yes

NeedsCompilation yes

Repository CRAN

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R topics documented:

`npst-package` *npst*

Description

Package 'npst' generalizes Hewitt's (1971) test for seasonality and Rogerson's (1996) extension based on Monte-Carlo simulation.

Details

Package:	npst
Type:	Package
Version:	1.6
Date:	2011-08-26
License:	GPL-2
LazyLoad:	yes

Author(s)

Roland Rau

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References

EDWARDS, J.H. (1961): The recognition and estimation of cyclic trends. Annals of Human Genetics 25:83-86

HEWITT, David and MILNER, Jean and CSIMA, Adele and PAKULA (1971): On Edwards' Criterion of Seasonality and a Non-Parametric Alternative. British Journal of Preventive Social Medicine 25:174-176

ROGERSON, Peter A. (1996): A Generalization of Hewitt's Test for Seasonality. International Journal of Epidemiology 25:644-648

WALTER, S.D. (1980): Exact significance levels for Hewitt's test for seasonality Journal of Epidemiology and Community Health 34:147–149

Examples

```
npst(indata=c(1:6, 12:7), peak=6, repts=100000,
  whole.distribution=FALSE, siglevels=c(0.01, 0.05, 0.1),
  PARALLEL=FALSE)
```

`npst` *npst*

Description

Package 'npst' generalizes Hewitt's (1971) test for seasonality and Rogerson's (1996) extension based on Monte-Carlo simulation.

Usage

```
npst(indata=NULL, long=12, peak=6, repts=100000,
  whole.distribution=FALSE, siglevels=c(0.001,0.01,0.05,0.1),
  PARALLEL=FALSE, nodes=1)
```

Arguments

indata	A numeric vector whose elements are the empirical number of events (e.g. deaths). The length of the data is typically 12 (=months), 52 or 53 (weeks), or 365 or 366 (days). Not providing 'indata' is also okay (slightly different output then).
long	The basic length of the data analyzed, i.e. if we have monthly data, it would be 12 (hence it is an integer scalar). If 'indata' are provided, argument 'long' is calculated based on argument 'indata'.
peak	Length of peak period (integer scalar). For instance, if we assume that the 'peak season' lasts six months for monthly data, 'peak' would be six (=default value).
repts	How many Monte Carlo simulation runs should be conducted (integer scalar)?
whole.distribution	Argument 'whole.distribution' indicates whether the whole distribution should be returned (=TRUE) or only the critical values (=FALSE) (Boolean Scalar).
siglevels	For which significance levels should the corresponding required rank sums be returned. Default settings are the 'typical' signficance levels of 0.001,0.01, 0.05, and 0.1 (numeric vector).
PARALLEL	If TRUE, multi-core Monte Carlo Simulation; otherwise single-core Simulation (Boolean Scalar).
nodes	Specify on how many nodes the estimation should run (default=1). Only active if argument PARALLEL=TRUE.

Value

maximum.rank.sum	The maximum rank sum theoretically possible with the given data (integer scalar)
observed	The observed maximum rank sum (with the given data) (integer scalar)
observed.p.value	What is the p-value corresponding to the observed maximum rank sum (numeric scalar)
critical values	What are the required rank sums for the entered significance levels (numeric data.frame)?
distribution	ONLY IF whole.distribution=TRUE: A numeric data.frame specifying all possible rank-sums and their associated p-values.

Author(s)

Roland Rau

References

EDWARDS, J.H. (1961): The recognition and estimation of cyclic trends. Annals of Human Genetics 25:83-86

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npst(indata=c(1:6, 12:7), peak=6, repts=100000,
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