Package ‘AID’

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Type  Package

Title  An R Package to Estimate Box-Cox Power Transformation Parameter

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Depends  MASS, tseries, nortest, stats

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Description  Includes a function to estimate the power transformation parameter and some datasets

License  GPL (>= 2)

NeedsCompilation  no

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Description

Includes a function to estimate the power transformation parameter and some datasets

Details
boxcoxnc

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boxcoxnc

A Function to Estimate Box-Cox Power Transformation Parameter via
Normality Tests and Artificial Covariate Method

Description

boxcoxnc utilizes seven different normality tests and artificial covariate method to estimate Box-Cox power transformation parameter and provides graphical analysis

Usage

boxcoxnc(data, method="all", lam=seq(-2,2,0.01), plotit=TRUE, rep=30, p.method="BY")

Arguments

data is a vector, matrix for univariate dataset

method expects a character string to select the desired method to be used to estimate Box-Cox transformation parameter. To use Shapiro-Wilk test method should be set to "sw". For method = "ad", boxcoxnc function uses Anderson-Darling test to estimate Box-Cox transformation parameter. Similarly, method should be set to "cvm", "pt", "sf", "lt", "jb", "ac" to use Cramer-von Mises, Pearson Chi-square, Shapiro-Francia, Lilliefors, Jarque-Bera tests and artificial covariate method, respectively. To use all the methods at the same time, default is set to method = "all".

lam is a vector which includes the sequence of candidate lambda values. Default is set to (-2,2) with increment 0.01

plotit plots normality test statistic vs lambda for methods utilizing normality tests. It also plots log-likelihood vs lambda for artificial covariate method. Defaults plotit = TRUE

rep is an integer which denotes the replication number for artificial covariate method. Default is set to 30

p.method expects a character string which defines the method to adjust the p-values. Default is set to "BY". p.method is same with the "method" in p.adjust documentation. See the documentation of p.adjust for other possible choices of methods and details.
grades

Value

Returns a matrix of output with the results of seven different normality tests and artificial covariate method. The first row of the matrix corresponds to the related estimates of lambda. The subsequent rows correspond to the p-values of different normality tests for each estimates of lambda.

Note

This is the version 1.4 of this user documentation file.

Author(s)

Osman Dag, Ozgur Asar, Ozlem Ilk

References


Examples

data(textile)
boxcoxnc(textile[,1])
boxcoxnc(textile[,1])$result[1,1]

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grades

Student Grades Data

Description

Overall student grades for a class taught by Dr. Ozlem Ilk

Usage

data(grades)
textile

**Format**

A data frame with 42 observations on the following variable.

- **grades**: a numeric vector for the student grades

**Examples**

```r
data(grades)
hist(grades[,1])
boxcoxnc(grades[,1])
```

textile

**Textile Data**

**Description**

Number of Cycles to Failure of Worsted Yarn

**Usage**

```r
data(textile)
```

**Format**

A data frame with 27 observations on the following variable.

- **textile**: a numeric vector for the number of cycles

**References**


**Examples**

```r
data(textile)
hist(textile[,1])
boxcoxnc(textile[,1])
```
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