

Package ‘PSGoft’

May 7, 2026

Title Modified Lilliefors Goodness-of-Fit Normality Test

Version 0.0.1

Description

Presentation of a new goodness-of-fit normality test based on the Lilliefors method. For details on this method see: Sulewski (2019) <[doi:10.1080/03610918.2019.1664580](https://doi.org/10.1080/03610918.2019.1664580)>.

Depends R (>= 3.5.0)

Imports moments

License GPL-3

Language en-US

Encoding UTF-8

RoxygenNote 7.2.3

Suggests testthat, knitr, rmarkdown

VignetteBuilder knitr

LazyData true

NeedsCompilation no

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data1	<i>A real data set on Dozer Cycle Times</i>
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Description

The data set from AbouRizk, S.M., Halpin, D.W., Wilson, J. R. (1994). *Fitting beta distributions based on sample data*. Journal of Construction Engineering and Management 120(2), 288–305. consist of 72 observations for Dozer Cycle Times

Usage

data1

Format

A data frame with 72 observations

data2	<i>A real data set on the height of five-year-old British boys</i>
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Description

The data set presents the height of 99 five-year-old British boys in cm downloaded from <http://www.mas.ncl.ac.uk/njnsn/med>

Usage

data2

Format

A data frame with 99 observations

MLF.pvalue	<i>Modified Lilliefors Goodness-of-Fit Normality Test</i>
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Description

Calculates the p-value of the modified Lilliefors goodness-of-fit normality test.

Usage

MLF.pvalue(x)

Arguments

`x` a numeric vector of data values, the number of which must be greater than 4.

Details

The modified Lilliefors goodness-of-fit p-value.

Value

The function returns the p-value of the modified Lilliefors goodness-of-fit normality test.

Author(s)

Piotr Sulewski, <piotr.sulewski@aps1.edu.pl>, Pomeranian University in Slupsk.

References

Sulewski, P. (2019). *Modified Lilliefors Goodness-of-fit Test for Normality*. Communications in Statistics - Simulation and Computation 51(3), 1199-1219.

Examples

```
MLF.pvalue(rnorm(33, mean = 0, sd = 2))  
MLF.pvalue(data1)
```

MLF.stat

Modified Lilliefors Goodness-of-Fit Normality Test

Description

Calculates the value of the modified Lilliefors goodness-of-fit normality test statistic.

Usage

```
MLF.stat(x)
```

Arguments

`x` a numeric vector of data values, the number of which must be greater than 4.

Details

The modified Lilliefors goodness-of-fit normality test statistic, see formula (5) in the article.

Value

The function returns the value of the modified Lilliefors goodness-of-fit normality test statistic.

Author(s)

Piotr Sulewski, <piotr.sulewski@apsl.edu.pl>, Pomeranian University in Slupsk.

References

Sulewski, P. (2019). *Modified Lilliefors Goodness-of-fit Test for Normality*. Communications in Statistics - Simulation and Computation 51(3), 1199-1219.

Examples

```
MLF.stat(rnorm(33, mean = 0, sd = 2))
MLF.stat(data1)
```

MLF.test

Modified Lilliefors Goodness-of-Fit Normality Test

Description

Performs the modified Lilliefors goodness-of-fit normality test.

Usage

```
MLF.test(x)
```

Arguments

x a numeric vector of data values, the number of which must be greater than 4.

Details

The modified Lilliefors goodness-of-fit normality test statistic, see formula (5) in the article.

Value

A list with class “hstest” containing the following components:

statistic - the value of the modified Lilliefors statistic.

p.value - the p-value for the test.

method - the character string “Modified Lilliefors goodness-of-fit normality test”.

data.name - a character string giving the name(s) of the data.

Author(s)

Piotr Sulewski, <piotr.sulewski@apsl.edu.pl>, Pomeranian University in Slupsk.

References

Sulewski, P. (2019). *Modified Lilliefors Goodness-of-fit Test for Normality*. Communications in Statistics - Simulation and Computation 51(3), 1199-1219.

Examples

```
MLF.test(rnorm(33, mean = 0, sd = 2))  
MLF.test(data1)
```

PSGof

The list of package functions and their demonstration

Description

The **PSGof** package puts into practice the modified Lilliefors goodness-of-fit normality test. This modification consists in varying a formula of calculating the empirical distribution function. Values of constants a, b in the formula depend on values of sample skewness and excess kurtosis, which is recommended in order to increase the power of the LF test.

Data sets in the package

[data1](#)
[data2](#)

Functions for the modified Lilliefors goodness-of-fit normality test

[MLF.stat](#)
[MLF.pvalue](#)
[MLF.test](#)

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