

Package ‘mvShapiroTest’

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Type Package

Title Generalized Shapiro-Wilk test for multivariate normality

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Description This package implements the generalization of the Shapiro-Wilk test for multivariate normality proposed by Villasenor-Alva and Gonzalez-Estrada (2009).

License GPL (>= 3)

Depends stats, datasets

LazyLoad yes

NeedsCompilation no

Repository CRAN

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R topics documented:

mvShapiro.Test	1
Index	3

mvShapiro.Test	<i>Generalized Shapiro-Wilk test for multivariate normality</i>
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Description

Given a d-dimensional random sample of size n, this function computes the test statistic and p-value of the Shapiro-Wilk test for multivariate normality proposed by Villasenor-Alva and Gonzalez-Estrada (2009).

Usage

```
mvShapiro.Test(X)
```

Arguments

X Numeric data matrix with d columns (vector dimension) and n rows (sample size).

Details

n must be larger than d.

When d=1, mvShapiro.Test(X) produces the same results as shapiro.test(X).

Value

A list with class "htest" containing the following components.

statistic	the value of the generalized Shapiro-Wilk statistic for testing multivariate normality.
p.value	the p-value of the test.
method	the character string "Generalized Shapiro-Wilk test for multivariate normality".
data.name	a character string giving the name of the data set.

Author(s)

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References

Villasenor-Alva, J.A. and Gonzalez-Estrada, E. (2009). A generalization of Shapiro-Wilk's test for multivariate normality. *Communications in Statistics: Theory and Methods*, **38** 11,1870-1883.

See Also

[shapiro.test](#)

Examples

```
X <- matrix(rnorm(40),ncol=2) # Generating a two dimensional random sample of size 20
mvShapiro.Test(X)           # Testing multivariate normality on X

#-----
# iris.virginica contains a set of measurements corresponding to
# Iris virginica of the famous iris dataset.

iris.virginica <- as.matrix(iris[iris$Species == "virginica",1:4],ncol=4)
mvShapiro.Test(iris.virginica) # Testing multivariate normality on iris.virginica
```

Index

* **htest**

mvShapiro.Test, 1

* **multivariate**

mvShapiro.Test, 1

mvShapiro.Test, 1

shapiro.test, 2