

# Package ‘mvnormtest’

January 2, 2012

**Version** 0.1-7

**Date** 2009-01-08

**Title** Normality test for multivariate variables

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**Description** Generalization of shapiro-wilk test for multivariate variables.

**License** GPL

**Depends** stats

**Repository** CRAN

**Date/Publication** 2009-02-10 08:14:38

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mshapiro.test	<i>Shapiro-Wilk Multivariate Normality Test</i>
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### Description

Performs the Shapiro-Wilk test for multivariate normality.

### Usage

```
mshapiro.test(U)
```

**Arguments**

U a numeric matrix of data values, the number of which must be for each sample between 3 and 5000.

**Value**

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

statistic	the value of the Shapiro-Wilk statistic.
p.value	the p-value for the test.
method	the character string "Shapiro-Wilk normality test".
data.name	a character string giving the name(s) of the data.

**Author(s)**

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**References**

Czeslaw Domanski (1998) Wlasnosci testu wielowymiarowej normalnosci Shapiro-Wilka i jego zastosowanie. *Cracow University of Economics Rector's Lectures*, **No. 37**.

Patrick Royston (1982) An Extension of Shapiro and Wilk's  $W$  Test for Normality to Large Samples. *Applied Statistics*, **31**, 115–124.

Patrick Royston (1982) Algorithm AS 181: The  $W$  Test for Normality. *Applied Statistics*, **31**, 176–180.

Patrick Royston (1995) A Remark on Algorithm AS 181: The  $W$  Test for Normality. *Applied Statistics*, **44**, 547–551.

**See Also**

[shapiro.test](#) for univariate samples, [qqnorm](#) for producing a normal quantile-quantile plot.

**Examples**

```
library(mvnormtest)
data(EuStockMarkets)

C <- t(EuStockMarkets[15:29,1:4])
mshapiro.test(C)

C <- t(EuStockMarkets[14:29,1:4])
mshapiro.test(C)

R <- t(diff(t(log(C))))
mshapiro.test(R)

dR <- t(diff(t(R)))
mshapiro.test(dR)
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