

Package ‘discnorm’

May 20, 2020

Type Package

Title Test for Discretized Normality in Ordinal Data

Version 0.1.0

Description Tests whether multivariate ordinal data may stem from discretizing a multivariate normal distribution.

The test is described by Foldnes and Grønneberg (2019) <doi:10.1080/10705511.2019.1673168>.

License GPL (>= 2)

Encoding UTF-8

LazyData true

Suggests knitr, rmarkdown

VignetteBuilder knitr

Imports lavaan, arules, sirt, MASS, pbivnorm, psych

RoxygenNote 7.1.0

NeedsCompilation no

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Repository CRAN

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bootTest	<i>Bootstrap test for discretized normality</i>
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Description

bootTest is a bootstrap test for whether an ordinal dataset is consistent with being a discretization of a multivariate normal dataset.

Usage

```
bootTest(my.data, B = 1000, verbose = TRUE)
```

Arguments

my.data	A dataset containing ordinal data. Must contain only integer values.
B	Number of bootstrap samples.
verbose	If true, bootstrap progress is printed to the console.

Value

p-value associated with the underlying normality hypothesis.

References

Njål Foldnes & Steffen Grønneberg (2019) Pernicious Polychorics: The Impact and Detection of Underlying Non-normality, Structural Equation Modeling: A Multidisciplinary Journal, DOI: 10.1080/10705511.2019.1673168

Examples

```
set.seed(1)
norm.data <- MASS::mvrnorm(300, m=rep(0,3),
Sigma=cov(MASS::mvrnorm(15, mu=rep(0,3), Sigma=diag(3))))
disc.data <- apply(norm.data,2, cut,
breaks = c(-Inf, 0,1, Inf), labels=FALSE)# normal data discretized
pvalue <- bootTest(disc.data, B=500)
#no support for underlying non-normality
```

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