Package 'MINDcor'

April 6, 2020

Type Package

Title Minkowski distance based correlation for categorical variables

Version 1.0

Date 2020-04-05

Author Qingyang Zhang

Maintainer Qingyang Zhang <qz008@uark.edu>

Description Two functions are provided to compute the Minkowski distance based correlation between two categorical (nominal) variables, and the corresponding p-value based on random permutations.

License GPL-3

NeedsCompilation no

R topics documented:

`MINDcor-package` *Minkowski distance based correlation for categorical variables*

Description

Two functions are provided to compute the Minkowski distance based correlation between two categorical (nominal) variables, and the corresponding p-value based on random permutations.

Details

The DESCRIPTION file:

Package:	MINDcor
Type:	Package
Title:	Minkowski distance based correlation for categorical variables
Version:	1.0
Date:	2020-04-05

Author:	Qingyang Zhang
Maintainer:	Qingyang Zhang <qz008@uark.edu>
Description:	Two functions are provided to compute the Minkowski distance based correlation between two categorical
License:	GPL-3

Index of help topics:

Author(s)

Qingyang Zhang

Maintainer: Qingyang Zhang <qz008@uark.edu>

References

Zhang, Q. (2019). A Class of Association Measures for Categorical Variables Based on Weighted Minkowski Distance. Entropy, 21(990), doi:10.3390/e21100990

See Also

MINDcorr, MINDtest

Examples

```
library(MINDcor)
mytable=matrix(c(8,8,0,1,9,7,8,0,9),3,3)
MINDtest(xytable=mytable,index=2,R=1000)
```

MINDcorr *Minkowski distance based correlation measure*

Description

This function calculates the Minkowski distance based correlation measure

Usage

```
MINDcorr(xytable, index)
```

Arguments

xytable	A matrix or two-way table that displays all the counts.
index	Exponent in the Minkowski distance.

Details

Specify index="max" for the maximum norm. When index=2, the measure is equivalent to distance correlation.

Value

COR	Minkowski distance based correlation measure

Author(s)

Qingyang Zhang

References

Zhang, Q. (2019). A Class of Association Measures for Categorical Variables Based on Weighted Minkowski Distance. Entropy, 21(990), doi:10.3390/e21100990

See Also

MINDtest

Examples

```
library(MINDcor)
mytable=matrix(c(8,8,0,1,9,7,8,0,9),3,3)
MINDcorr(xytable=mytable,index=2)
```

MINDtest *Minkowski distance based independence test*

Description

This function calculates permutation p-value for the independence test.

Usage

```
MINDtest(xytable, index, R)
```

Arguments

xytable	A matrix or two-way table that displays all the counts.
index	Exponent in the Minkowski distance.
R	Number of permutations

Details

Specify index="max" for the maximum norm. When index=2, the measure is equivalent to distance correlation.

Value

p.value	Permutation p-value

Author(s)

Qingyang Zhang

References

Zhang, Q. (2019). A Class of Association Measures for Categorical Variables Based on Weighted Minkowski Distance. Entropy, 21(990), doi:10.3390/e21100990

See Also

MINDcorr

Examples

```
library(MINDcor)
mytable=matrix(c(8,8,0,1,9,7,8,0,9),3,3)
MINDtest(xytable=mytable,index=2,R=1000)
```

Index