

Package ‘ahptopsis2n’

January 31, 2021

Type Package

Title Hybrid Method for Multiple Criteria Decision-Making (MCDM)

Version 0.2.0

Date 2021-01-30

Author Raquel Coutinho [aut, cre],
Marcos dos Santos [aut]

Maintainer Raquel Coutinho <rdouradocoutinho@gmail.com>

Description Implementation of a hybrid MCDM method build from the AHP (Analytic Hierarchy Process) and TOPSIS-2N (Technique for Order of Preference by Similarity to Ideal Solution - with two normalizations). This method is described in Souza et al. (2018) <doi: 10.1142/S0219622018500207>.

License GPL-3

Encoding UTF-8

LazyData true

Suggests knitr, rmarkdown

VignetteBuilder knitr

NeedsCompilation no

Repository CRAN

Date/Publication 2021-01-31 15:30:10 UTC

R topics documented:

ahptopsis2n 2

Index 4

ahptopsis2n

AHP-TOPSIS-2N method

Description

AHP-TOPSIS-2N is a hybrid multi-criteria decision-making method build from the AHP (Analytic Hierarchy Process) and TOPSIS-2N (Technique for Order of Preference by Similarity to Ideal Solution - with two normalizations).

Usage

```
ahptopsis2n(decision, criteria, minmax)
```

Arguments

decision	a matrix where rows correspond to the alternatives and columns correspond to criteria.
criteria	a matrix with pairwise comparison of criteria as in Analytic Hierarchy Process method.
minmax	a vector with objectives, minimize or maximize, to each criteria.

Details

criteria must be in the same order on the arguments.

Value

a list with consistency ratio and two dataframes with priority sorting of the alternatives.

Author(s)

Raquel Coutinho <rdouradocoutinho@gmail.com>, Marcos dos Santos <marcosdossantos@ime.eb.br>

References

Souza, L. P. de, Gomes, C. F. S. and De Barros, A. P. (2018). Implementation of New Hybrid AHP-TOPSIS-2N Method in Sorting and Prioritizing of an it CAPEX Project Portfolio. International Journal of Information Technology & Decision Making. DOI: 10.1142/S0219622018500207.

Examples

```
decision<-matrix(c(64, 48, 1400,
                  128,64, 1900,
                  64, 32, 1100), ncol=3, byrow=TRUE)

rownames(decision)<- c("A1", "A2", "A3")
```

```
criteria<-matrix(c(1, 3, 1/3,  
                  1/3, 1, 1/5,  
                  3, 5, 1), ncol=3, byrow=TRUE)  
  
minmax<-c("max", "max", "min")  
  
ahptopsis2n(decision=decision, criteria=criteria, minmax=minmax)
```

Index

ahptopsis2n, [2](#)