

Package ‘sapevom’

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Type Package

Title Group Ordinal Method for Multiple Criteria Decision-Making

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Description Implementation of SAPEVO-M, a Group Ordinal Method for Multiple Criteria Decision-Making (MCDM). SAPEVO-M is an acronym for Simple Aggregation of Preferences Expressed by Ordinal Vectors Group Decision Making. This method provides alternatives ranking given decision makers' preferences: criteria preferences and alternatives preferences for each criterion. This method is described in Gomes et al. (2020) <doi: 10.1590/0101-7438.2020.040.00226524 >.

Imports stats

License GPL-3

Encoding UTF-8

LazyData true

Suggests knitr, rmarkdown

VignetteBuilder knitr

NeedsCompilation no

Repository CRAN

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SAPEVO-M

Description

Implements SAPEVO-M method

Usage

```
sapevom(criteriaEvaluations, alternativesEvaluations)
```

Arguments

criteriaEvaluations

a list of matrices with pairwise comparison of criteria, one matrix for each decisor.

alternativesEvaluations

a list of lists of matrices with pairwise comparison of alternatives, one list for each criterion containing one matrix for each decisor.

Details

Criteria and alternatives must be in the same order on all the matrices. Define row names for all matrices, like on documentation example, to have a more understandable output. The pairwise comparisons must be made with a scale of seven values, from -3 to 3, to represent the preferences.

Value

a vector with criteria weights and a dataframe with SAPEVO-M results.

Author(s)

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References

GOMES, C. F. S., DOS SANTOS, M., TEIXEIRA, L. F. H. S. B., SANSEVERINO, A. M. and BARCELOS, M.R. S. (2020). SAPEVO-M: a group multicriteria ordinal ranking method. Pesquisa Operacional. 40. 1-20. DOI: 10.1590/0101-7438.2020.040.00226524.

Examples

```
criteria<- c("C1", "C2", "C3")
alternatives<- c("A1", "A2", "A3")

listofmatrices<-list(matrix(c(0,1,1,-1,0,0,-1,0,0),
                           byrow=TRUE, ncol=3, dimnames=list(criteria)),
                    matrix(c(0,2,1,-2,0,1,-1,-1,0),
```

```
        byrow=TRUE, ncol=3, dimnames=list(criteria))
    )

listoflistsofmatrices<-list(list(matrix(c(0,0,-1,0,0,2,1,-2,0),
        byrow=TRUE, ncol=3, dimnames=list(alternatives)),
        matrix(c(0,-1,2,1,0,0,-2,0,0),
        byrow=TRUE, ncol=3, dimnames=list(alternatives))),
    list(matrix(c(0,1,0,-1,0,0,0,0,0),
        byrow=TRUE, ncol=3, dimnames=list(alternatives)),
        matrix(c(0,2,1,-2,0,1,-1,-1,0),
        byrow=TRUE, ncol=3, dimnames=list(alternatives))),
    list(matrix(c(0,3,2,-3,0,1,-2,-1,0),
        byrow=TRUE, ncol=3, dimnames=list(alternatives)),
        matrix(c(0,0,3,0,0,-1,-3,1,0),
        byrow=TRUE, ncol=3, dimnames=list(alternatives)))
    )

sapevom(criteriaEvaluations= listofmatrices, alternativesEvaluations= listoflistsofmatrices)
```

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