

Package ‘rwise’

June 30, 2023

Type Package

Title WISP Multiple Criteria Sorting Method

Description

Implementation of the Integrated Simple Weighted Sum Product Method (WISP), a multiple criteria sorting method create by Dragisa Stanujkic (2021) <[doi:10.1109/TEM.2021.3075783](https://doi.org/10.1109/TEM.2021.3075783)>.

Version 1.0.5

RoxygenNote 7.2.3

Encoding UTF-8

License GPL (>= 3)

URL <https://github.com/dioubernardo/rwise>

BugReports <https://github.com/dioubernardo/rwise/issues>

Imports utils

Language en-US

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

NeedsCompilation no

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Repository CRAN

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rwispfromcsv	<i>Abstraction for extracting data from a CSV file to run the wispcalc function</i>
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Description

File requirements: - Separated by comma or semicolon - Do not use thousands separator Example file in <https://github.com/dioubernardo/rwisp/blob/main/inst/extdata/example.csv>

Usage

```
rwispfromcsv(file)
```

Arguments

file	the name of the file
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Value

list with 3 matrix, ui = ranking and the global ui, normalizedData = normalized data, utilities = utility values

Examples

```
result <- rwispfromcsv(system.file("extdata", "example.csv", package = "rwisp"))
```

wispcalc	<i>Integrated Simple Weighted Sum Product Method - WISP</i>
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Description

Implementation of An Integrated Simple Weighted Sum Product Method - WISP More information about the method at <https://doi.org/10.1109/TEM.2021.3075783> More information about the implementation at <https://github.com/dioubernardo/rwisp/blob/main/README.md>

Usage

```
wispcalc(data, alternatives, optimizations, weights)
```

Arguments

data	A numeric data matrix, columns are the criteria, rows are the alternatives
alternatives	A character vector with the identification of alternatives
optimizations	A character vector with definition of minimization or maximization for each criterion, expected 'min' or 'max' only
weights	A numeric vector with the criteria weights, the sum of all must be 1

Value

list with 3 matrix, ui = ranking and the global ui, normalizedData = normalized data, utilities = utility values

Examples

```
alternatives <- c("A1", "A2", "A3", "A4", "A5")
optimizations <- c("max", "min", "max", "max", "min", "max", "min", "max", "min", "max")
weights <- c(0.07, 0.07, 0.07, 0.14, 0.2, 0.08, 0.12, 0.125, 0.05, 0.075)
data <- matrix(c(
  c(3, 4, 6, 5, 2), # criterion 1 values
  c(7, 6, 4, 6, 8), # criterion 2 values
  c(4, 5, 5, 6, 3), # criterion 3 values
  c(4, 5, 6, 5, 4), # criterion 4 values
  c(6, 5, 4, 3, 6), # criterion 5 values
  c(4, 5, 5, 6, 3), # criterion 6 values
  c(6, 5, 5, 4, 6), # criterion 7 values
  c(8, 8, 9, 7, 7), # criterion 8 values
  c(5, 6, 7, 8, 7), # criterion 9 values
  c(8, 9, 9, 9, 8) # criterion 10 values
), nrow=5, ncol=10)
result <- wispcalc(data, alternatives, optimizations, weights)
```

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