

# Package ‘TopSisWM’

April 23, 2025

**Title** Multi-Criteria Method for Decision (TOPSIS)

**Version** 1.0.3

**Description** Assists in the TOPSIS analysis process, designed to return at the end of the answer of the TOPSIS multicriteria analysis, a ranking table with the best option as the analysis proposes. TOPSIS is basically a technique developed by Hwang and Yoon in 1981, starting from the point that the best alternative should be closest to the positive ideal solution and farthest from the negative one, based on several criteria to result in the best benefit. (LIU, H. et al., 2019) <[doi:10.1016/j.agwat.2019.105787](https://doi.org/10.1016/j.agwat.2019.105787)>.

**License** GPL-3

**Encoding** UTF-8

**RoxygenNote** 7.3.2

**Depends** R (>= 2.10)

**LazyData** true

**NeedsCompilation** no

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Topex1	<i>Topex1 - TopSisWM</i>
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**Description**

Example Data

**Usage**

Topex1

**Format**

Matrix

**Source**

Topex1

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TopSisWM	<i>Multi-Criteria Method for Decision (TOPSIS)</i>
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**Description**

Assists in the TOPSIS analysis process, designed to return a ranking table with the best option as the analysis proposes. TOPSIS is a technique developed by Hwang and Yoon (1981), assuming the best alternative is closest to the positive ideal solution and farthest from the negative one. (LIU, H. et al., 2019) [doi:10.1016/j.agwat.2019.105787](https://doi.org/10.1016/j.agwat.2019.105787).

**Usage**

TopSisWM(TabTo = NULL, P.Pesos = NULL, solpo = NULL, sort.rank = TRUE)

**Arguments**

TabTo	A table or matrix containing row and column names, with only numeric values. Default is NULL.
P.Pesos	A vector of weights for each criterion. Must have a weight for each column of the table. The sum of weights must be 1. Default is NULL.
solpo	A vector indicating if each criterion is to be maximized ("+") or minimized ("-"). Must match the number of columns. Default is NULL.
sort.rank	Logical. If TRUE, the result is ordered by rank. If FALSE, keeps original input order. Default is TRUE.

**Value**

A matrix with the results of the TOPSIS analysis, including the distance to the positive ideal solution (d+), the distance to the negative ideal solution (d-), the relative closeness (eu), and the final rank.

**References**

LIU, H. et al. (2019). Optimizing irrigation frequency and amount to balance yield, fruit quality and water use efficiency of greenhouse tomato. *Agricultural Water Management*, 226, 1–11.

**Examples**

```
data(Topex1)
Tabela <- Topex1
Pesos <- c(0.5,0.3,0.2)
solucao <- c("-", "-", "+")
TopSisWM(Tabela, Pesos, solucao)

# Important: use row.names = 1 when importing local data
# Tabela <- read.csv("file.csv", sep=";", h=TRUE, row.names=1)
# Tabela <- read.table("Tabela.txt", h=TRUE, row.names=1)
```

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\* **datasets**

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