

Package ‘PSIM’

January 20, 2025

Type Package

Title Preference Selection Index Method (PSIM)

Version 0.1.0

Maintainer Luana Oliveira <luana.azevedo.oliveira.2022@gmail.com>

Description The Preference Selection Index Method was created in (2010) and provides an innovative approach to determining the relative importance of criteria without pairwise comparisons, unlike the Analytic Hierarchy Process. The Preference Selection Index Method uses statistical methods to calculate the criteria weights and reflects their relative importance in the final decision-making process, offering an objective and non-subjective solution. This method is beneficial in multi-criteria decision analysis. The 'PSIM' package provides a practical and accessible tool for implementing the Preference Selection Index Method in R. It calculates the weights of criteria and makes the method available to researchers, analysts, and professionals without the need to develop complex calculations manually. More details about the Preference Selection Index Method can be found in Maniya K. and Bhatt M. G.(2010) <[doi:10.1016/j.matdes.2009.11.020](https://doi.org/10.1016/j.matdes.2009.11.020)>.

URL <https://github.com/luana1909/PSIM>

Imports dplyr, matrixStats, magrittr, tidyverse

Language en-US

License GPL-3

Encoding UTF-8

RoxygenNote 7.3.2

Suggests rmarkdown, spelling, testthat (>= 3.0.0)

Config/testthat/edition 3

NeedsCompilation no

Author Luana Oliveira [aut, cre],
Marcos Santos [ctb] (<<https://orcid.org/0000-0003-1533-5535>>)

Repository CRAN

Date/Publication 2024-09-19 15:40:12 UTC

Contents

psicalc	2
Index	3

psicalc	<i>Preference Selection Index Method PSI</i>
---------	--

Description

Implementation of An PREFERENCE SELECTION INDEX METHOD - PSI More information about the method at <https://doi.org/10.1016/j.matdes.2009.11.020> More information about the implementation at <https://github.com/luana1909/PSIM/blob/main/DESCRIPTION> The goal is to determine the weights of criteria

Arguments

data	A numeric data matrix, columns are the criteria, rows are the alternatives
optimization	A character vector with definition of minimization or maximization for each criterion, expected 'min' or 'max' only

Value

dataframe with 3 columns: critério, phi_j and psi_j

Examples

```
optimizations <- c("min","min", "max", "max") # "min" and "max" should be all lowercase
decision_matrix <- data.frame(criterio1 = c(7000, 15000, 20000),
                              criterio2 = c(700, 800, 1000),
                              criterio3 = c(280, 300, 180),
                              criterio4 = c(120, 880, 1200))
result <- psicalc(decision_matrix, optimizations)
```

Index

psicalc, [2](#)