

Package ‘GDMR’

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Type Package

Title GDM-R: A new framework in R to support fuzzy group decision making processes

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Description A framework to carry out consensus guided decision making processes using fuzzy preference relations providing mechanism to deal with missing information. The system includes tools to visualize the evolution of the decision making process and presents various operation modes, including a test operation one which automatically creates a customized decision scenario to validate, test and compare among various decision making approaches.

License GPL (>= 2)

LazyData TRUE

RoxygenNote 5.0.1

URL <https://github.com/rakelup/GDMR>

Depends R (>= 2.6.0),
lattice,
scatterplot3d

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agregation	agregation <i>aggregates all the experts preferences following and Yager OWA quantifier</i>
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Description

agregation aggregates all the experts preferences following and Yager OWA quantifier

Usage

```
agregation(preferences, M, N, quantifier)
```

Arguments

preferences	amtrix with the experts preferences
M	Number of experts
N	Number of aternatives
quantifier	Type of quantifier could be 'leasthalf', 'most', 'asmany'

Value

A NxN matrix with the preferences of all the experts aggregated using the given quantifier

complete	<i>Title complete complete Completes the missing preferences values in a matrix of preferences following the additive consistency property</i>
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Description

Title complete complete Completes the missing preferences values in a matrix of preferences following the additive consistency property

Usage

```
complete(preferences)
```

Arguments

preferences	a matrix where all the incomplete experts preferences are included, that is, if there are n alternatives and h experts it receives a matrix of h*n rows and n cols
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Value

the complete matrix of preferences

distanceCalculation	<i>Calculates the distance between two elements</i>
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Description

Calculates the distance between two elements

Usage

```
distanceCalculation(a, b, type)
```

Arguments

a	First element
b	Second element
type	Type of distance, could be 'manhattan', 'euclidean', 'cosine', 'dice', 'jacard'

Value

d the distance between the two given elements

estimate	<i>Estimates the missing value using the additive consistency properties</i>
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Description

Estimates the missing value using the additive consistency properties

Usage

```
estimate(i, k, preferences, type)
```

Arguments

i	number of row where the preference is located
k	number of column where the preference is located
preferences	matrix of preferences
type	type of estimation

Value

the estimated value

exploitation	<i>Exploitation</i>
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Description

Exploitation

Usage

exploitation(agregated, N, dominance, quantifier)

Arguments

agregated	NxN matrix of preference where all the experts preferences has been included
N	Number of expert
dominance	Type of choice degree "GDD" or "GNDD"
quantifier	Type of quantifier

generateIncompletePref

generateIncompletePref Generates a matrix of incomplete preferences randomly colocated

Description

generateIncompletePref Generates a matrix of incomplete preferences randomly colocated

Usage

generateIncompletePref(n, consistent)

Arguments

n	number of alternatives
consistent	boolean paramater that indicates if the maxtrix of preference is consistent or not

Value

pref a matrix of preferences

generatePref	<i>generatePref Generates a matrix of preferences</i>
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Description

generatePref Generates a matrix of preferences

Usage

generatePref(n, consistent)

Arguments

n	number of alternatives
consistent	boolean paramater that indicates if the maxtrix of preference is consistent or not

Value

pref a matrix of preferences

owa	<i>owa Aggregates the elementes in the vector A following an Ordering Weighting Averaging operator, OWA, with the weights provided as a parameter</i>
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Description

owa Aggregates the elementes in the vector A following an Ordering Weighting Averaging operator, OWA, with the weights provided as a parameter

Usage

owa(A, w)

Arguments

A	number of alternatives
w	Weights for the aggregation

Value

h Aggregated value

weight	<i>Computes the weights in the aggregation when a Yager Ordering weighting averaging operator (OWA) is used</i>
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Description

Computes the weights in the aggregation when a Yager Ordering weighting averaging operator (OWA) is used

Usage

```
weight(r, type)
```

Arguments

type	Type of quantifier to be used in the aggregation, could be 'leasthalf', 'most' and 'asmany'.
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Value

weight for the BUM function

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