

Package ‘explor’

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Type Package

Title Interactive Interfaces for Results Exploration

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Description Shiny interfaces and graphical functions for multivariate analysis results exploration.

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VignetteBuilder knitr

URL <https://juba.github.io/explor/>

BugReports <https://github.com/juba/explor/issues>

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Imports shiny (>= 1.0), DT, dplyr (>= 1.0), tidyr (>= 1.0), ggplot2,
highr, formatR, scatterD3 (>= 1.0.0), RColorBrewer

Suggests FactoMineR, ade4 (>= 1.7-13), GDAtools (>= 2.0), MASS,
quanteda, quanteda.textmodels, testthat, knitr, rmarkdown

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CA_var_plot	<i>Interactive CA variables plot</i>
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Description

This function generates an HTML widget displaying the variables plot of a CA result.

Usage

```
CA_var_plot(  
  res,  
  xax = 1,  
  yax = 2,  
  lev_sup = TRUE,  
  var_sup = TRUE,  
  var_sup_choice = NULL,  
  var_hide = "None",  
  var_lab_min_contrib = 0,  
  point_size = 64,  
  col_var = NULL,  
  symbol_var = NULL,  
  size_var = NULL,  
  size_range = c(10, 300),  
  zoom_callback = NULL,  
  in_explor = FALSE,  
  ...  
)
```

Arguments

res	Result of prepare_results() call
xax	Horizontal axis number
yax	Vertical axis number
lev_sup	TRUE to display supplementary levels
var_sup	TRUE to display supplementary variables
var_sup_choice	list of supplementary variables to display
var_hide	elements to hide (rows or columns)

var_lab_min_contrib	Contribution threshold to display points labels
point_size	base point size
col_var	name of the variable for points color
symbol_var	name of the variable for points symbol
size_var	name of the variable for points size
size_range	points size range with format c(minimum, maximum)
zoom_callback	scatterD3 zoom callback JavaScript body
in_explor	wether the plot is to be displayed in the explor interface
...	Other arguments passed to scatterD3

explor	<i>Interface for analysis results exploration</i>
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Description

This function launches a shiny app in a web browser in order to do interactive visualisation and exploration of an analysis results.

Usage

```
explor(obj)

## S3 method for class 'CA'
explor(obj)

## S3 method for class 'textmodel_ca'
explor(obj)

## S3 method for class 'coa'
explor(obj)

## S3 method for class 'MCA'
explor(obj)

## S3 method for class 'speMCA'
explor(obj)

## S3 method for class 'mca'
explor(obj)

## S3 method for class 'acm'
explor(obj)

## S3 method for class 'PCA'
```

```
explor(obj)

## S3 method for class 'princomp'
explor(obj)

## S3 method for class 'prcomp'
explor(obj)

## S3 method for class 'pca'
explor(obj)
```

Arguments

obj object containing analysis results

Details

If you want to display supplementary individuals or variables and you're using the `dudi.coa` function, you can add the coordinates of `suprow` and/or `supcol` to as `supr` and/or `supv` elements added to your `dudi.coa` result (See example).

If you want to display supplementary individuals or variables and you're using the `dudi.acm` function, you can add the coordinates of `suprow` and/or `supcol` to as `supi` and/or `supv` elements added to your `dudi.acm` result (See example).

If you want to display supplementary individuals or variables and you're using the `dudi.pca` function, you can add the coordinates of `suprow` and/or `supcol` to as `supi` and/or `supv` elements added to your `dudi.pca` result (See example).

Value

The function launches a shiny app in the system web browser.

Examples

```
## Not run:

require(FactoMineR)

## FactoMineR::MCA exploration
data(hobbies)
mca <- MCA(hobbies[1:1000,c(1:8,21:23)], quali.sup = 9:10,
           quanti.sup = 11, ind.sup = 1:100, graph = FALSE)
explor(mca)

## FactoMineR::PCA exploration
data(decathlon)
d <- decathlon[,1:12]
pca <- PCA(d, quanti.sup = 11:12, graph = FALSE)
explor(pca)

## End(Not run)
```

```

## Not run:

library(ade4)

data(bordeaux)
tab <- bordeaux
row_sup <- tab[5,-4]
col_sup <- tab[-5,4]
coa <- dudi.coa(tab[-5,-4], nf = 5, scannf = FALSE)
coa$supr <- suprow(coa, row_sup)
coa$supc <- supcol(coa, col_sup)
explor(coa)

## End(Not run)
## Not run:

library(ade4)
data(banque)
d <- banque[-(1:100),-(19:21)]
ind_sup <- banque[1:100, -(19:21)]
var_sup <- banque[-(1:100),19:21]
acm <- dudi.acm(d, scannf = FALSE, nf = 5)
acm$supv <- supcol(acm, dudi.acm(var_sup, scannf = FALSE, nf = 5)$tab)
colw <- acm$cw*ncol(d)
X <- acm.disjonctif(ind_sup)
X <- data.frame(t(t(X)/colw) - 1)
acm$supi <- suprow(acm, X)
explor(acm)

## End(Not run)
## Not run:

library(ade4)
data(deug)
d <- deug$tab
sup_var <- d[-(1:10), 8:9]
sup_ind <- d[1:10, -(8:9)]
pca <- dudi.pca(d[-(1:10), -(8:9)], scale = TRUE, scannf = FALSE, nf = 5)
supi <- suprow(pca, sup_ind)
pca$supi <- supi
supv <- supcol(pca, dudi.pca(sup_var, scale = TRUE, scannf = FALSE)$tab)
pca$supv <- supv
explor(pca)

## End(Not run)

```

Description

This function displays a graphical representation of the individuals (rows) of a multivariate analysis.

This function displays a graphical representation of the individuals (rows) of a multiple correspondence analysis generated by the MCA function of the FactoMineR package.

Usage

```
ggind(obj, ...)

## S3 method for class 'MCA'
ggind(
  obj,
  xax = 1,
  yax = 2,
  fac = NA,
  label = NULL,
  alpha = 0.5,
  palette = "Set1",
  ...
)
```

Arguments

<code>obj</code>	a multivariate analysis results object. Currently only MCA is supported
<code>...</code>	arguments passed to other methods
<code>xax</code>	number of the x axis
<code>yax</code>	number of the y axis
<code>fac</code>	an optional factor by which points are colored, and confidence ellipses drawn
<code>label</code>	legend title
<code>alpha</code>	points opacity
<code>palette</code>	palette for points coloring, if <code>fac</code> is not NULL

<code>ggvar</code>	<i>Graphical representation of the variables (columnss) of a multivariate analysis</i>
--------------------	--

Description

This function displays a graphical representation of the variables (columns) of a multivariate analysis.

This function displays a graphical representation of the variables (columns) of a multiple correspondence analysis generated by the MCA function of the FactoMineR package.

Usage

```
ggvar(obj, ...)

## S3 method for class 'MCA'
ggvar(obj, xax = 1, yax = 2, size = 4, alpha = 0.5, palette = "Set1", ...)
```

Arguments

obj	a multivariate analysis results object. Currently only MCA is supported
...	arguments passed to other methods
xax	number of the x axis
yax	number of the y axis
size	text size
alpha	points opacity
palette	palette for variables coloring

See Also

[MCA](#)

MCA_biplot

Interactive MCA biplot

Description

This function generates an HTML widget displaying the variables plot of an MCA result.

Usage

```
MCA_biplot(
  res,
  xax = 1,
  yax = 2,
  col_var,
  ind_sup = TRUE,
  var_sup = TRUE,
  bi_lab_min_contrib = 0,
  symbol_var = NULL,
  ind_point_size = 16,
  var_point_size = 96,
  ind_opacity = 0.5,
  ind_opacity_var = NULL,
  ind_labels = FALSE,
  zoom_callback = NULL,
  in_explor = FALSE,
  ...
)
```

Arguments

res	Result of prepare_results() call
xax	Horizontal axis number
yax	Vertical axis number
col_var	name of the variable for points color
ind_sup	TRUE to display supplementary individuals
var_sup	TRUE to display supplementary variables
bi_lab_min_contrib	Contribution threshold to display points labels
symbol_var	name of the variable for points symbol
ind_point_size	base point size for individuals
var_point_size	base point size for variable levels
ind_opacity	individuals point opacity (constant)
ind_opacity_var	individuals point opacity (variable)
ind_labels	TRUE to display individuals labels
zoom_callback	scatterD3 zoom callback JavaScript body
in_explor	wether the plot is to be displayed in the explor interface
...	Other arguments passed to scatterD3

MCA_ind_plot

*Interactive MCA individuals plot***Description**

This function generates an HTML widget displaying the individuals plot of an MCA result.

Usage

```
MCA_ind_plot(
  res,
  xax = 1,
  yax = 2,
  ind_sup = TRUE,
  ind_lab_min_contrib = 0,
  lab_var = NULL,
  col_var = NULL,
  symbol_var = NULL,
  opacity_var = NULL,
  size_var = NULL,
  size_range = c(10, 300),
  zoom_callback = NULL,
  in_explor = FALSE,
  ...
)
```


Arguments

res	Result of prepare_results() call
xax	Horizontal axis number
yax	Vertical axis number
ind_sup	TRUE to display supplementary individuals
ind_lab_min_contrib	Contribution threshold to display points labels
lab_var	variable to be used for points names
col_var	variable to be used for points color
symbol_var	name of the variable for points symbol
opacity_var	name of the variable for points opacity
size_var	name of the variable for points size
size_range	points size range with format c(minimum, maximum)
zoom_callback	scatterD3 zoom callback JavaScript body
in_explor	wether the plot is to be displayed in the explor interface
...	Other arguments passed to scatterD3

MCA_var_plot

*Interactive MCA variables plot***Description**

This function generates an HTML widget displaying the variables plot of an MCA result.

Usage

```
MCA_var_plot(
  res,
  xax = 1,
  yax = 2,
  var_sup = TRUE,
  var_sup_choice = NULL,
  var_lab_min_contrib = 0,
  point_size = 64,
  labels_prepend_var = FALSE,
  col_var = NULL,
  symbol_var = NULL,
  size_var = NULL,
  size_range = c(10, 300),
  zoom_callback = NULL,
  in_explor = FALSE,
  ...
)
```

Arguments

<code>res</code>	Result of <code>prepare_results()</code> call
<code>xax</code>	Horizontal axis number
<code>yax</code>	Vertical axis number
<code>var_sup</code>	TRUE to display supplementary variables
<code>var_sup_choice</code>	list of supplementary variables to display
<code>var_lab_min_contrib</code>	Contribution threshold to display points labels
<code>point_size</code>	base point size
<code>labels_prepend_var</code>	if TRUE, prepend variable names to labels
<code>col_var</code>	name of the variable for points color
<code>symbol_var</code>	name of the variable for points symbol
<code>size_var</code>	name of the variable for points size
<code>size_range</code>	points size range with format <code>c(minimum, maximum)</code>
<code>zoom_callback</code>	scatterD3 zoom callback JavaScript body
<code>in_explor</code>	wether the plot is to be displayed in the explor interface
<code>...</code>	Other arguments passed to <code>scatterD3</code>

PCA_ind_plot

*Interactive PCA individuals plot***Description**

This function generates an HTML widget displaying the individuals plot of a PCA result.

Usage

```
PCA_ind_plot(
  res,
  xax = 1,
  yax = 2,
  ind_sup = TRUE,
  ind_lab_min_contrib = 0,
  col_var = NULL,
  symbol_var = NULL,
  opacity_var = NULL,
  size_var = NULL,
  size_range = c(10, 300),
  lab_var = NULL,
  zoom_callback = NULL,
  in_explor = FALSE,
  ...
)
```

Arguments

res	Result of prepare_results() call
xax	Horizontal axis number
yax	Vertical axis number
ind_sup	TRUE to display supplementary individuals
ind_lab_min_contrib	Contribution threshold to display points labels
col_var	variable to be used for points color
symbol_var	name of the variable for points symbol
opacity_var	name of the variable for points opacity
size_var	name of the variable for points size
size_range	points size range with format c(minimum, maximum)
lab_var	variable to be used for points names
zoom_callback	scatterD3 zoom callback JavaScript body
in_explor	wether the plot is to be displayed in the explor interface
...	Other arguments passed to scatterD3

PCA_var_plot

*Interactive PCA variables plot***Description**

This function generates an HTML widget displaying the variables plot of a PCA result.

Usage

```
PCA_var_plot(
  res,
  xax = 1,
  yax = 2,
  var_sup = TRUE,
  var_sup_choice = NULL,
  var_lab_min_contrib = 0,
  scale_unit = FALSE,
  col_var = NULL,
  size_var = NULL,
  zoom_callback = NULL,
  in_explor = FALSE,
  xlim = NULL,
  ylim = NULL,
  ...
)
```

Arguments

<code>res</code>	Result of <code>prepare_results()</code> call
<code>xax</code>	Horizontal axis number
<code>yax</code>	Vertical axis number
<code>var_sup</code>	TRUE to display supplementary variables
<code>var_sup_choice</code>	list of supplementary variables to display
<code>var_lab_min_contrib</code>	Contribution threshold to display points labels
<code>scale_unit</code>	wether the PCA is scaled
<code>col_var</code>	name of the variable for points color
<code>size_var</code>	name of the variable for points size
<code>zoom_callback</code>	scatterD3 zoom callback JavaScript body
<code>in_explor</code>	wether the plot is to be displayed in the explor interface
<code>xlim</code>	custom x axis limits
<code>ylim</code>	custom y axis limits
<code>...</code>	Other arguments passed to <code>scatterD3</code>

<code>prepare_results</code>	<i>Analysis results preparation</i>
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Description

This function prepares results to be used by `explor`. Not to be used directly.

Usage

```
prepare_results(obj)

## S3 method for class 'CA'
prepare_results(obj)

## S3 method for class 'mca'
prepare_results(obj)

## S3 method for class 'MCA'
prepare_results(obj)

## S3 method for class 'PCA'
prepare_results(obj)

## S3 method for class 'coa'
prepare_results(obj)
```

```

## S3 method for class 'acm'
prepare_results(obj)

## S3 method for class 'pca'
prepare_results(obj)

## S3 method for class 'prcomp'
prepare_results(obj)

## S3 method for class 'princomp'
prepare_results(obj)

## S3 method for class 'speMCA'
prepare_results(obj)

## S3 method for class 'textmodel_ca'
prepare_results(obj)

```

Arguments

obj object containing analysis results

See Also

[CA](#)
[mca](#)
[MCA](#)
[PCA](#)
[CA](#)
[dudi.acm](#)
[dudi.pca](#)
[prcomp](#)
[princomp](#)
[speMCA](#)
[textmodel_ca](#)

speMCA_varsup

Compute supplementary variables data for a GDAtools::speMCA result

Description

Compute supplementary variables data for a GDAtools::speMCA result

Usage

```
speMCA_varsup(mca, df)
```

Arguments

<code>mca</code>	result object from <code>speMCA</code> .
<code>df</code>	data frame with the supplementary variables data. Must have the same number of rows than the data used with <code>speMCA</code> .

Value

A list of results suitable to be added as a ‘supv’ element to the ‘mca’ object.

See Also

[speMCA](#), [varsup](#)

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