

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.

License GPL (>= 3)

VignetteBuilder knitr

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

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

Encoding UTF-8

Imports shiny (>= 1.0), DT, dplyr (>= 0.7), tidyr, ggplot2, highr,
formatR, scatterD3 (>= 0.9), RColorBrewer

Suggests FactoMineR, ade4 (>= 1.7-13), GDAtools, MASS, 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, var_sup = TRUE,
  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
var_sup	TRUE to display supplementary variables
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

Author(s)

Julien Barnier <julien.barnier@ens-lyon.fr>

`explor`*Interface for analysis results exploration*

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 '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.

Author(s)

Julien Barnier <julien.barnier@ens-lyon.fr>

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$supr <- suprow(coa, row_sup)$lisup
coa$supc <- supcol(coa, col_sup)$cosup
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)$cosup
colw <- acm$cw*ncol(d)
X <- acm.disjonctif(ind_sup)
X <- data.frame(t(t(X)/colw) - 1)
acm$supi <- suprow(acm, X)$lisup
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$lisup
supv <- supcol(pca, dudi.pca(sup_var, scale = TRUE, scannf = FALSE)$tab)
pca$supv <- supv$cosup
explor(pca)

## End(Not run)

```

ggind

Graphical representation of individuals (rows) of a multivariate analysis

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

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
fac	an optional factor by which points are colored, and confidence ellipses drawn
label	legend title
alpha	points opacity
palette	palette for points coloring, if fac is not NULL

ggvar	<i>Graphical representation of the variables (columns) of a multivariate analysis</i>
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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

Author(s)

Julien Barnier <julien.barnier@ens.lyon.fr>

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

Author(s)

Julien Barnier <julien.barnier@ens-lyon.fr>

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

Author(s)

Julien Barnier <julien.barnier@ens-lyon.fr>

MCA_var_plot	<i>Interactive MCA variables plot</i>
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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_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
var_sup	TRUE to display supplementary variables
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

Author(s)

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 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

<code>res</code>	Result of <code>prepare_results()</code> call
<code>xax</code>	Horizontal axis number
<code>yax</code>	Vertical axis number
<code>ind_sup</code>	TRUE to display supplementary individuals
<code>ind_lab_min_contrib</code>	Contribution threshold to display points labels
<code>col_var</code>	variable to be used for points color
<code>symbol_var</code>	name of the variable for points symbol
<code>opacity_var</code>	name of the variable for points opacity
<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>lab_var</code>	variable to be used for points names
<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>

Author(s)

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PCA_var_plot	<i>Interactive PCA variables plot</i>
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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_lab_min_contrib = 0, scale_unit = FALSE, col_var = NULL,  
             size_var = NULL, zoom_callback = NULL, in_explor = FALSE,  
             xlim = NULL, ylim = NULL, ...)
```

Arguments

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

Author(s)

Julien Barnier <julien.barnier@ens-lyon.fr>

prepare_results *Analysis results preparation*

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)
```

Arguments

`obj` object containing analysis results

Author(s)

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See Also

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

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