

# Package: discoverR (via r-universe)

November 21, 2024

**Title** Exploratory Data Analysis System

**Version** 3.1.5

**Description** Performs an exploratory data analysis through a 'shiny' interface. It includes basic methods such as the mean, median, mode, normality test, among others. It also includes clustering techniques such as Principal Components Analysis, Hierarchical Clustering and the K-Means Method.

**License** GPL (>=2)

**Imports** DT, rlang, golem, shiny (>= 1.7.4), config, plotly, loadR, cluster, ggplot2, shinyjs, shinyAce, ggdendro, echarts4r, htmltools, FactoMineR, htmlwidgets, colourpicker, shinydashboard, shinycustomloader, shinydashboardPlus (>= 2.0.0)

**Depends** R (>= 4.0)

**Encoding** UTF-8

**URL** <https://www.promidat.com>, <https://github.com/PROMiDAT/discoverR>

**BugReports** <https://github.com/PROMiDAT/discoverR/issues>

**RoxygenNote** 7.2.3

**Config/pak/sysreqs** cmake make libicu-dev libssl-dev zlib1g-dev

**Repository** <https://promidat.r-universe.dev>

**RemoteUrl** <https://github.com/PROMiDAT/discoverR>

**RemoteRef** HEAD

**RemoteSha** 7689cee7fa2f5425171c8c9e5e714462b17c810f

## Contents

BP . . . . .	2
calc.centros . . . . .	3
discoverR . . . . .	4
e_afcbi . . . . .	4

e_afcbi_3D . . . . .	5
e_afccol . . . . .	7
e_afccol_3D . . . . .	8
e_afcmbi . . . . .	9
e_afcmbi_3D . . . . .	10
e_afcmcat . . . . .	11
e_afcmcat_3D . . . . .	12
e_afcmind . . . . .	13
e_afcmind_3D . . . . .	14
e_afcmvar . . . . .	15
e_afcmvar_3D . . . . .	16
e_afcrow . . . . .	16
e_afcrow_3D . . . . .	17
e_balloon . . . . .	18
e_cat . . . . .	19
e_horiz . . . . .	20
e_inercia . . . . .	20
e_jambu . . . . .	21
e_mapa . . . . .	22
e_mapa_3D . . . . .	22
e_pcabi . . . . .	23
e_pcabi_3D . . . . .	24
e_pcaind . . . . .	25
e_pcaind_3D . . . . .	26
e_pcavar . . . . .	27
e_pcavar_3D . . . . .	28
e_radar . . . . .	29
e_silhouette . . . . .	30
e_vert . . . . .	31
gg_dendrograma . . . . .	31
inercia.total . . . . .	32
run_app . . . . .	32
WP . . . . .	33

**Index****34**

BP

*Calculate inter-class inertia***Description**

Calculate inter-class inertia

**Usage**

BP(DF, clusters)

**Arguments**

DF                    a data.frame object.  
clusters             a vector specifying the cluster of each individual.

**Value**

numeric

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
m <- hclust(dist(iris[, -5]))  
BP(iris[, -5], cutree(m, 3))
```

---

calc.centros

*Calculation of the center of clusters*

---

**Description**

Calculation of the center of clusters

**Usage**

```
calc.centros(data, clusters)
```

**Arguments**

data                    a data.frame object.  
clusters             a vector specifying the cluster of each individual.

**Value**

list

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
clusters <- factor(kmeans(iris[, -5], 3)$cluster)  
calc.centros(iris[, -5], clusters)
```

---

discoverR

*Exploratory Data Analysis System*

---

### Description

Performs an exploratory data analysis through a 'shiny' interface. It includes basic methods such as the mean, median, mode, normality test, among others. It also includes clustering techniques such as Principal Components Analysis, Hierarchical Clustering and the K-Means Method.

### Details

Package: discoverR  
Type: Package  
Version: 3.1.5  
Date: 2023-03-28  
License: GPL (>=2)

### Author(s)

Maintainer: Oldemar Rodriguez Rojas <oldemar.rodriguez@ucr.ac.cr>

- Oldemar Rodriguez Rojas <oldemar.rodriguez@ucr.ac.cr>
- Diego Jiménez Alvarado

---

e\_afcbi

*AFC biplot*

---

### Description

AFC biplot

### Usage

```
e_afcbi(  
  modelo,  
  axes = c(1, 2),  
  colorRow = "steelblue",  
  colorCol = "forestgreen",  
  cos2Row = 0,  
  cos2Col = 0,
```

```
colorRowCos = "firebrick",
colorColCos = "darkorchid",
titulos = c("Bien Representados", "Mal Representados"),
etq = T
)
```

### Arguments

modelo	an object of class CA [FactoMineR].
axes	a numeric vector of length 2 specifying the dimensions to be plotted.
colorRow	a color for the individuals well represented.
colorCol	a color for the variables well represented.
cos2Row	a numeric value from 0 to 1 specifying the quality of the individuals.
cos2Col	a numeric value from 0 to 1 specifying the quality of the variables.
colorRowCos	a color for the individuals badly represented.
colorColCos	a color for the variables badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.
etq	a boolean, whether to add label to graph or not.

### Value

echarts4r plot

### Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

### Examples

```
p <- FactoMineR::CA(iris[, -5], graph = FALSE)
e_afcbi(p)
```

---

e\_afcbi\_3D

*AFC biplot in 3D*

---

### Description

AFC biplot in 3D

**Usage**

```
e_afcbi_3D(  
  modelo,  
  axes = c(1, 2, 3),  
  colorRow = "steelblue",  
  colorCol = "forestgreen",  
  cos2Row = 0,  
  cos2Col = 0,  
  colorRowCos = "firebrick",  
  colorColCos = "darkorchid",  
  titulos = c("Bien Representados", "Mal Representados"),  
  etq = T  
)
```

**Arguments**

modelo	an object of class CA [FactoMineR].
axes	a numeric vector of length 3 specifying the dimensions to be plotted.
colorRow	a color for the individuals well represented.
colorCol	a color for the variables well represented.
cos2Row	a numeric value from 0 to 1 specifying the quality of the individuals.
cos2Col	a numeric value from 0 to 1 specifying the quality of the variables.
colorRowCos	a color for individuals badly represented.
colorColCos	a color for variables badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.
etq	a boolean, whether to add label to graph or not.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
p <- FactoMineR::CA(iris[, -5], graph = FALSE)  
e_afcbi_3D(p)
```

---

e_afccol	<i>AFC plot of variables</i>
----------	------------------------------

---

**Description**

AFC plot of variables

**Usage**

```
e_afccol(  
  modelo,  
  axes = c(1, 2),  
  colorCol = "forestgreen",  
  cos2 = 0,  
  colorCos = "darkorchid",  
  titulos = c("Bien Representados", "Mal Representados")  
)
```

**Arguments**

modelo	an object of class CA [FactoMineR].
axes	a numeric vector of length 2 specifying the dimensions to be plotted.
colorCol	a color for the variables well represented.
cos2	a numeric value from 0 to 1 specifying the quality of the variables.
colorCos	a color for the variables badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
p <- FactoMineR::CA(iris[, -5], graph = FALSE)  
e_afccol(p)
```

---

`e_afccol_3D`*AFC plot of variables in 3D*

---

**Description**

AFC plot of variables in 3D

**Usage**

```
e_afccol_3D(  
  modelo,  
  axes = c(1, 2, 3),  
  colorCol = "forestgreen",  
  cos2 = 0,  
  colorCos = "darkorchid",  
  titulos = c("Bien Representados", "Mal Representados")  
)
```

**Arguments**

<code>modelo</code>	an object of class CA [FactoMineR].
<code>axes</code>	a numeric vector of length 3 specifying the dimensions to be plotted.
<code>colorCol</code>	a color for the variables well represented.
<code>cos2</code>	a numeric value from 0 to 1 specifying the quality of the variables.
<code>colorCos</code>	a color for variables badly represented.
<code>titulos</code>	a character vector of length 2 specifying the titles to use on legend.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
p <- FactoMineR::CA(iris[, -5], graph = FALSE)  
e_afccol_3D(p)
```



---

e\_afcmbi

*AFCM biplot*

---

### Description

AFCM biplot

### Usage

```
e_afcmbi(  
  modelo,  
  axes = c(1, 2),  
  colorInd = "steelblue",  
  colorVar = "forestgreen",  
  cos2Ind = 0,  
  cos2Var = 0,  
  colorIndCos = "firebrick",  
  colorVarCos = "darkorchid",  
  titulos = c("Bien Representados", "Mal Representados"),  
  etq = T  
)
```

### Arguments

modelo	an object of class AFCM [FactoMineR].
axes	a numeric vector of length 2 specifying the dimensions to be plotted.
colorInd	a color for the individuals well represented.
colorVar	a color for the variables well represented.
cos2Ind	a numeric value from 0 to 1 specifying the quality of the individuals.
cos2Var	a numeric value from 0 to 1 specifying the quality of the variables.
colorIndCos	a color for the individuals badly represented.
colorVarCos	a color for the variables badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.
etq	a boolean, whether to add label to graph or not.

### Value

echarts4r plot

### Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
data("poison", package = "FactoMineR")
poison.active <- poison[1:55, 5:15]
p <- FactoMineR::MCA(poison.active, graph = FALSE)
e_afcmbi(p)
```

---

e\_afcmbi\_3D

*AFCM biplot in 3D*


---

**Description**

AFCM biplot in 3D

**Usage**

```
e_afcmbi_3D(
  modelo,
  axes = c(1, 2, 3),
  colorInd = "steelblue",
  colorVar = "forestgreen",
  cos2Ind = 0,
  cos2Var = 0,
  colorIndCos = "firebrick",
  colorVarCos = "darkorchid",
  titulos = c("Bien Representados", "Mal Representados"),
  etq = T
)
```

**Arguments**

modelo	an object of class AFCM [FactoMineR].
axes	a numeric vector of length 3 specifying the dimensions to be plotted.
colorInd	a color for the individuals well represented.
colorVar	a color for the variables well represented.
cos2Ind	a numeric value from 0 to 1 specifying the quality of the individuals.
cos2Var	a numeric value from 0 to 1 specifying the quality of the variables.
colorIndCos	a color for individuals badly represented.
colorVarCos	a color for variables badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.
etq	a boolean, whether to add label to graph or not.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
data("poison", package = "FactoMineR")
poison.active <- poison[1:55, 5:15]
p <- FactoMineR::MCA(poison.active, graph = FALSE)
e_afcmcat_3D(p)
```

---

e\_afcmcat

*AFCM plot of categories*

---

**Description**

AFCM plot of categories

**Usage**

```
e_afcmcat(
  modelo,
  axes = c(1, 2),
  colorCat = "forestgreen",
  cos2 = 0,
  colorCos = "darkorchid",
  titulos = c("Bien Representados", "Mal Representados")
)
```

**Arguments**

modelo	an object of class AFCM [FactoMineR].
axes	a numeric vector of length 2 specifying the dimensions to be plotted.
colorCat	a color for the categories well represented.
cos2	a numeric value from 0 to 1 specifying the quality of the categories.
colorCos	a color for the categories badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
data("poison", package = "FactoMineR")
poison.active <- poison[1:55, 5:15]
p <- FactoMineR::MCA(poison.active, graph = FALSE)
e_afcmcat(p)
```

---

e\_afcmcat\_3D

*AFCM plot of categories in 3D*

---

**Description**

AFCM plot of categories in 3D

**Usage**

```
e_afcmcat_3D(
  modelo,
  axes = c(1, 2, 3),
  colorCat = "forestgreen",
  cos2 = 0,
  colorCos = "darkorchid",
  titulos = c("Bien Representados", "Mal Representados")
)
```

**Arguments**

modelo	an object of class AFCM [FactoMineR].
axes	a numeric vector of length 3 specifying the dimensions to be plotted.
colorCat	a color for the categories well represented.
cos2	a numeric value from 0 to 1 specifying the quality of the categories.
colorCos	a color for categories badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
data("poison", package = "FactoMineR")
poison.active <- poison[1:55, 5:15]
p <- FactoMineR::MCA(poison.active, graph = FALSE)
e_afcmcat_3D(p)
```

---

e\_afcmind

*AFCM plot of individuals*

---

**Description**

AFCM plot of individuals

**Usage**

```
e_afcmind(
  modelo,
  axes = c(1, 2),
  colorInd = "steelblue",
  cos2 = 0,
  colorCos = "firebrick",
  titulos = c("Bien Representados", "Mal Representados"),
  etq = T
)
```

**Arguments**

modelo	an object of class AFCM [FactoMineR].
axes	a numeric vector of length 2 specifying the dimensions to be plotted.
colorInd	a color for the individuals well represented.
cos2	a numeric value from 0 to 1 specifying the quality of the individuals.
colorCos	a color for individuals badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.
etq	a boolean, whether to add label to graph or not.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

## Examples

```
data("poison", package = "FactoMineR")
poison.active <- poison[1:55, 5:15]
p <- FactoMineR::MCA(poison.active, graph = FALSE)
e_afcmind(p)
```

---

e\_afcmind\_3D

*AFCM plot of individuals in 3D*

---

## Description

AFCM plot of individuals in 3D

## Usage

```
e_afcmind_3D(  
  modelo,  
  axes = c(1, 2, 3),  
  colorInd = "steelblue",  
  cos2 = 0,  
  colorCos = "firebrick",  
  titulos = c("Bien Representados", "Mal Representados"),  
  etq = T  
)
```

## Arguments

modelo	an object of class AFCM [FactoMineR].
axes	a numeric vector of length 3 specifying the dimensions to be plotted.
colorInd	a color for the individuals well represented.
cos2	a numeric value from 0 to 1 specifying the quality of the individuals.
colorCos	a color for individuals badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.
etq	a boolean, whether to add label to graph or not.

## Value

echarts4r plot

## Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
data("poison", package = "FactoMineR")
poison.active <- poison[1:55, 5:15]
p <- FactoMineR::MCA(poison.active, graph = FALSE)
e_afcmind_3D(p)
```

---

e\_afcmvar

*AFCM plot of variables*

---

**Description**

AFCM plot of variables

**Usage**

```
e_afcmvar(modelo, axes = c(1, 2), colorVar = "forestgreen")
```

**Arguments**

modelo            an object of class AFCM [FactoMineR].  
axes              a numeric vector of length 2 specifying the dimensions to be plotted.  
colorVar          a color for the variables.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
data("poison", package = "FactoMineR")
poison.active <- poison[1:55, 5:15]
p <- FactoMineR::MCA(poison.active, graph = FALSE)
e_afcmvar(p)
```

e\_afcmvar\_3D *AFCM plot of variables in 3D*

---

**Description**

AFCM plot of variables in 3D

**Usage**

```
e_afcmvar_3D(modelo, axes = c(1, 2, 3), colorVar = "forestgreen")
```

**Arguments**

modelo            an object of class AFCM [FactoMineR].  
axes              a numeric vector of length 3 specifying the dimensions to be plotted.  
colorVar          a color for the variables well represented.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
data("poison", package = "FactoMineR")  
poison.active <- poison[1:55, 5:15]  
p <- FactoMineR::MCA(poison.active, graph = FALSE)  
e_afcmvar_3D(p)
```

---

e\_afcrow *AFC plot of individuals*

---

**Description**

AFC plot of individuals



**Usage**

```
e_afcrow(  
  modelo,  
  axes = c(1, 2),  
  colorRow = "steelblue",  
  cos2 = 0,  
  colorCos = "firebrick",  
  titulos = c("Bien Representados", "Mal Representados"),  
  etq = T  
)
```

**Arguments**

modelo	an object of class CA [FactoMineR].
axes	a numeric vector of length 2 specifying the dimensions to be plotted.
colorRow	a color for the individuals well represented.
cos2	a numeric value from 0 to 1 specifying the quality of the individuals.
colorCos	a color for individuals badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.
etq	a boolean, whether to add label to graph or not.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
p <- FactoMineR::CA(iris[, -5], graph = FALSE)  
e_afcrow(p)
```

---

e\_afcrow\_3D

*AFC plot of individuals in 3D*

---

**Description**

AFC plot of individuals in 3D

**Usage**

```
e_afcrow_3D(  
  modelo,  
  axes = c(1, 2, 3),  
  colorRow = "steelblue",  
  cos2 = 0,  
  colorCos = "firebrick",  
  titulos = c("Bien Representados", "Mal Representados"),  
  etq = T  
)
```

**Arguments**

modelo	an object of class CA [FactoMineR].
axes	a numeric vector of length 3 specifying the dimensions to be plotted.
colorRow	a color for the individuals well represented.
cos2	a numeric value from 0 to 1 specifying the quality of the individuals.
colorCos	a color for individuals badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.
etq	a boolean, whether to add label to graph or not.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
p <- FactoMineR::CA(iris[, -5], graph = FALSE)  
e_afcrow_3D(p)
```

---

e\_balloon

*Balloonplot*

---

**Description**

Balloonplot

**Usage**

```
e_balloon(datos)
```

**Arguments**

datos                    a data frame object.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
e_balloon(iris)
```

---

e\_cat                    *Barplot for categoric variable by clusters.*

---

**Description**

Barplot for categoric variable by clusters.

**Usage**

```
e_cat(clusters, var, colores = NULL, escalar = T)
```

**Arguments**

clusters                a vector specifying the cluster of each individual.  
var                      a factor column of a data.frame.  
colores                 a vector of color for each cluster.  
escalar                 a boolean value specifying if use percentage or real values.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
clusters <- factor(kmeans(iris[, -5], 3)$cluster)  
e_cat(clusters, iris[, 5], colores = c("steelblue", "pink", "forestgreen"))
```

---

e_horiz	<i>Horizontal representation for centers of clusters.</i>
---------	---

---

**Description**

Horizontal representation for centers of clusters.

**Usage**

```
e_horiz(centros, colores = NULL)
```

**Arguments**

centros	a data.frame object with the centers of the clusters.
colores	a vector of color for each cluster.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
clusters <- factor(kmeans(iris[, -5], 3)$cluster)
c <- calc.centros(iris[, -5], clusters)
e_horiz(c$real, c("steelblue", "pink", "forestgreen"))
```

---

e_inercia	<i>Inertia plot of clusterization</i>
-----------	---------------------------------------

---

**Description**

Inertia plot of clusterization

**Usage**

```
e_inercia(
  data,
  titulos = c("Inercia", "Inercia Inter-Clase", "Inercia Inter-Clase")
)
```

**Arguments**

`data` a data.frame object with the inertia values.  
`titulos` a character vector of length 3 specifying the titles to use on legend.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

---

e_jambu	<i>Jambu Elbow plot</i>
---------	-------------------------

---

**Description**

Jambu Elbow plot

**Usage**

```
e_jambu(data, max.clusters)
```

**Arguments**

`data` a data.frame object.  
`max.clusters` a numeric value specifying the number of times to generate the model.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
e_jambu(iris[, -5], 10)
```

---

e\_mapa

*PCA plot of individuals colored by clusters*

---

### Description

PCA plot of individuals colored by clusters

### Usage

```
e_mapa(pca.model, clusters, colores = NULL, ejes = c(1, 2), etq = F)
```

### Arguments

`pca.model` an object of class PCA [FactoMineR].  
`clusters` a vector specifying the cluster of each individual.  
`colores` a vector of color for each cluster.  
`ejes` a numeric vector of length 2 specifying the dimensions to be plotted.  
`etq` a boolean, whether to add label to graph or not.

### Value

echarts4r plot

### Author(s)

Diego Jimenez <diego.jimenez@promidat.com>

### Examples

```
p <- FactoMineR::PCA(iris[, -5], graph = FALSE)
clusters <- factor(kmeans(iris[, -5], 3)$cluster)
e_mapa(p, clusters, c("steelblue", "pink", "forestgreen"), etq = FALSE)
```

---

e\_mapa\_3D

*PCA plot of individuals colored by clusters*

---

### Description

PCA plot of individuals colored by clusters

### Usage

```
e_mapa_3D(pca.model, clusters, colores = NULL, ejes = c(1, 2, 3), etq = F)
```

**Arguments**

`pca.modelo` an object of class PCA [FactoMineR].  
`clusters` a vector specifying the cluster of each individual.  
`colores` a vector of color for each cluster.  
`ejes` a numeric vector of length 3 specifying the dimensions to be plotted.  
`etq` a boolean, whether to add label to graph or not.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
p <- FactoMineR::PCA(iris[, -5], graph = FALSE)
clusters <- factor(kmeans(iris[, -5], 3)$cluster)
e_mapa_3D(p, clusters, c("steelblue", "pink", "forestgreen"), etq = FALSE)
```

---

e\_pcabi

*PCA biplot*

---

**Description**

PCA biplot

**Usage**

```
e_pcabi(
  modelo,
  axes = c(1, 2),
  colorInd = "steelblue",
  colorVar = "forestgreen",
  cos2Ind = 0,
  cos2Var = 0,
  colorIndCos = "firebrick",
  colorVarCos = "darkorchid",
  titulos = c("Bien Representados", "Mal Representados"),
  etq = F
)
```

**Arguments**

modelo	an object of class PCA [FactoMineR].
axes	a numeric vector of length 2 specifying the dimensions to be plotted.
colorInd	a color for the individuals well represented.
colorVar	a color for the variables well represented.
cos2Ind	a numeric value from 0 to 1 specifying the quality of the individuals.
cos2Var	a numeric value from 0 to 1 specifying the quality of the variables.
colorIndCos	a color for the individuals badly represented.
colorVarCos	a color for the variables badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.
etq	a boolean, whether to add label to graph or not.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
p <- FactoMineR::PCA(iris[, -5], graph = FALSE)
e_pcabi(p)
```

---

e\_pcabi\_3D

*PCA biplot in 3D*

---

**Description**

PCA biplot in 3D

**Usage**

```
e_pcabi_3D(
  modelo,
  axes = c(1, 2, 3),
  colorInd = "steelblue",
  colorVar = "forestgreen",
  cos2Ind = 0,
  cos2Var = 0,
  colorIndCos = "firebrick",
  colorVarCos = "darkorchid",
  titulos = c("Bien Representados", "Mal Representados"),
  etq = F
)
```



**Arguments**

modelo	an object of class PCA [FactoMineR].
axes	a numeric vector of length 3 specifying the dimensions to be plotted.
colorInd	a color for the individuals well represented.
colorVar	a color for the variables well represented.
cos2Ind	a numeric value from 0 to 1 specifying the quality of the individuals.
cos2Var	a numeric value from 0 to 1 specifying the quality of the variables.
colorIndCos	a color for individuals badly represented.
colorVarCos	a color for variables badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.
etq	a boolean, whether to add label to graph or not.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
p <- FactoMineR::PCA(iris[, -5], graph = FALSE)
e_pcabi_3D(p)
```

---

e\_pcaind

*PCA plot of individuals*

---

**Description**

PCA plot of individuals

**Usage**

```
e_pcaind(
  modelo,
  axes = c(1, 2),
  colorInd = "steelblue",
  cos2 = 0,
  colorCos = "firebrick",
  titulos = c("Bien Representados", "Mal Representados"),
  etq = F
)
```

**Arguments**

modelo	an object of class PCA [FactoMineR].
axes	a numeric vector of length 2 specifying the dimensions to be plotted.
colorInd	a color for the individuals well represented.
cos2	a numeric value from 0 to 1 specifying the quality of the individuals.
colorCos	a color for individuals badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.
etq	a boolean, whether to add label to graph or not.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
p <- FactoMineR::PCA(iris[, -5], graph = FALSE)
e_pcaind(p)
```

---

e\_pcaind\_3D

*PCA plot of individuals in 3D*

---

**Description**

PCA plot of individuals in 3D

**Usage**

```
e_pcaind_3D(
  modelo,
  axes = c(1, 2, 3),
  colorInd = "steelblue",
  cos2 = 0,
  colorCos = "firebrick",
  titulos = c("Bien Representados", "Mal Representados"),
  etq = F
)
```

**Arguments**

modelo	an object of class PCA [FactoMineR].
axes	a numeric vector of length 3 specifying the dimensions to be plotted.
colorInd	a color for the individuals well represented.
cos2	a numeric value from 0 to 1 specifying the quality of the individuals.
colorCos	a color for individuals badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.
etq	a boolean, whether to add label to graph or not.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
p <- FactoMineR::PCA(iris[, -5], graph = FALSE)
e_pcaind_3D(p)
```

---

e_pcavar	<i>PCA plot of variables</i>
----------	------------------------------

---

**Description**

PCA plot of variables

**Usage**

```
e_pcavar(  
  modelo,  
  axes = c(1, 2),  
  colorVar = "forestgreen",  
  cos2 = 0,  
  colorCos = "darkorchid",  
  titulos = c("Bien Representados", "Mal Representados")  
)
```

**Arguments**

modelo	an object of class PCA [FactoMineR].
axes	a numeric vector of length 2 specifying the dimensions to be plotted.
colorVar	a color for the variables well represented.
cos2	a numeric value from 0 to 1 specifying the quality of the variables.
colorCos	a color for the variables badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
p <- FactoMineR::PCA(iris[, -5], graph = FALSE)
e_pcavar(p)
```

---

e\_pcavar\_3D

*PCA plot of variables in 3D*

---

**Description**

PCA plot of variables in 3D

**Usage**

```
e_pcavar_3D(
  modelo,
  axes = c(1, 2, 3),
  colorVar = "forestgreen",
  cos2 = 0,
  colorCos = "darkorchid",
  titulos = c("Bien Representados", "Mal Representados")
)
```

**Arguments**

modelo	an object of class PCA [FactoMineR].
axes	a numeric vector of length 3 specifying the dimensions to be plotted.
colorVar	a color for the variables well represented.
cos2	a numeric value from 0 to 1 specifying the quality of the variables.
colorCos	a color for variables badly represented.
titulos	a character vector of length 2 specifying the titles to use on legend.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
p <- FactoMineR::PCA(iris[, -5], graph = FALSE)
e_pcavar_3D(p)
```

---

e\_radar

*Radar representation for centers of clusters.*

---

**Description**

Radar representation for centers of clusters.

**Usage**

```
e_radar(centros, colores = NULL)
```

**Arguments**

centros	a data.frame object with the centers of the clusters.
colores	a vector of color for each cluster.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
clusters <- factor(kmeans(iris[, -5], 3)$cluster)
c <- calc.centros(iris[, -5], clusters)
e_radar(c$porcentual, c("steelblue", "pink", "forestgreen"))
```

---

e\_silhouette

*Silhouette plot*

---

**Description**

Silhouette plot

**Usage**

```
e_silhouette(data, max.clusters)
```

**Arguments**

data            a data.frame object.  
max.clusters   a numeric value specifying the number of times to generate the model.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
e_silhouette(iris[, -5], 10)
```

---

e\_vert *Vertical representation for centers of clusters.*

---

**Description**

Vertical representation for centers of clusters.

**Usage**

```
e_vert(centros, colores = NULL)
```

**Arguments**

centros            a data.frame object with the centers of the clusters.  
colores            a vector of color for each cluster.

**Value**

echarts4r plot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
clusters <- factor(kmeans(iris[, -5], 3)$cluster)
c <- calc.centros(iris[, -5], clusters)
e_vert(c$real, c("steelblue", "pink", "forestgreen"))
```

---

gg\_dendrograma *Dendrogram plot*

---

**Description**

Dendrogram plot

**Usage**

```
gg_dendrograma(model, k, colors = NULL)
```

**Arguments**

model            an object of class hclust.  
k                a vector specifying the cluster of each individual.  
colors           a vector of color for each cluster.

**Value**

ggplot

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

---

inercia.total	<i>Calculate total inertia</i>
---------------	--------------------------------

---

**Description**

Calculate total inertia

**Usage**

```
inercia.total(DF)
```

**Arguments**

DF                    a data.frame object.

**Value**

numeric

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

---

run_app	<i>Run the Shiny Application</i>
---------	----------------------------------

---

**Description**

Run the Shiny Application

**Usage**

```
run_app(...)
```

**Arguments**

...                    A series of options to be used inside the app.



**Examples**

```
if(interactive()) {  
  run_app()  
}
```

---

WP

*Calculate intra-class inertia*

---

**Description**

Calculate intra-class inertia

**Usage**

```
WP(DF, clusters)
```

**Arguments**

DF                    a data.frame object.  
clusters              a vector specifying the cluster of each individual.

**Value**

numeric

**Author(s)**

Diego Jimenez <diego.jimenez@promidat.com>

**Examples**

```
m <- hclust(dist(iris[, -5]))  
WP(iris[, -5], cutree(m, 3))
```

# Index

- \* **package**
  - discoverR, 4
- BP, 2
- calc.centros, 3
- discoverR, 4
- e\_afcbi, 4
- e\_afcbi\_3D, 5
- e\_afccol, 7
- e\_afccol\_3D, 8
- e\_afcmbi, 9
- e\_afcmbi\_3D, 10
- e\_afcmcat, 11
- e\_afcmcat\_3D, 12
- e\_afcmind, 13
- e\_afcmind\_3D, 14
- e\_afcmvar, 15
- e\_afcmvar\_3D, 16
- e\_afcrow, 16
- e\_afcrow\_3D, 17
- e\_balloon, 18
- e\_cat, 19
- e\_horiz, 20
- e\_inercia, 20
- e\_jambu, 21
- e\_mapa, 22
- e\_mapa\_3D, 22
- e\_pcabi, 23
- e\_pcabi\_3D, 24
- e\_pcaind, 25
- e\_pcaind\_3D, 26
- e\_pcavar, 27
- e\_pcavar\_3D, 28
- e\_radar, 29
- e\_silhouette, 30
- e\_vert, 31
- gg\_dendrograma, 31
- inercia.total, 32
- run\_app, 32
- WP, 33