Package ‘radiant.multivariate’

January 12, 2023

Type Package

Title Multivariate Menu for Radiant: Business Analytics using R and Shiny

Version 1.5.0

Date 2023-1-9

Description The Radiant Multivariate menu includes interfaces for perceptual mapping, factor analysis, cluster analysis, and conjoint analysis. The application extends the functionality in ‘radiant.data’.

Depends R (>= 4.0.0), radiant.data (>= 1.4.4)

Imports radiant.model (>= 1.5.0), shiny (>= 1.7.1), dplyr (>= 1.0.7), rlang (>= 0.4.10), ggplot2 (>= 2.2.1), scales (>= 0.4.0), magrittr (>= 1.5), psych (>= 1.8.4), GPArotation (>= 2014.11-1), car (>= 2.1.1), MASS (>= 7.3), import (>= 1.1.0), ggrepel (>= 0.8), lubridate (>= 1.7.4), polycor (>= 0.7.10), gower (>= 0.2.1), clustMixType (>= 0.2.1), patchwork (>= 1.0.0)

Suggests testthat (>= 2.0.0), pkgdown (>= 1.1.0)


BugReports https://github.com/radiant-rstats/radiant.multivariate/issues/

License AGPL-3 | file LICENSE

LazyData true

Encoding UTF-8

RoxygenNote 7.2.3

NeedsCompilation no

Author Vincent Nijs [aut, cre]

Maintainer Vincent Nijs <radiant@rady.ucsd.edu>

Repository CRAN

Date/Publication 2023-01-12 09:00:02 UTC
R topics documented:

carpet ......................................................... 3
city ............................................................ 3
city2 ............................................................ 4
clean_loadings ............................................... 4
computer ....................................................... 5
conjoint ........................................................ 5
full_factor ..................................................... 6
hclus ............................................................ 8
kclus ............................................................ 9
mds .............................................................. 10
movie ........................................................... 11
mp3 ............................................................. 12
plot.conjoint ................................................. 12
plot.full_factor ............................................. 13
plot.hclus ..................................................... 14
plot.kclus ..................................................... 15
plot.mds ....................................................... 16
plot.pre_factor .............................................. 17
plot.prmap .................................................. 18
predict.conjoint ........................................... 20
predict_conjoint_by ....................................... 21
pre_factor ..................................................... 22
print.conjoint.predict .................................... 23
prmap .......................................................... 23
radiant.multivariate ....................................... 24
radiant.multivariate_viewer ................................. 25
radiant.multivariate_window ............................... 26
retailers ....................................................... 26
shopping ....................................................... 27
store.conjoint ............................................... 27
store.conjoint.predict ..................................... 28
store.full_factor ............................................ 28
store.hclus .................................................. 29
store.kclus .................................................. 30
summary.conjoint .......................................... 31
summary.full_factor ....................................... 32
summary.hclus ............................................... 33
summary.kclus ............................................... 33
summary.mds ................................................ 34
summary.pre_factor ....................................... 35
summary.prmap ............................................. 36
the_table ...................................................... 37
toothpaste ................................................... 37
tpbrands ....................................................... 38

Index ................................................. 39
**carpet**

| carpet | Carpet cleaners |

**Description**

Carpet cleaners

**Usage**

`data(carpet)`

**Format**

A data frame with 18 rows and 5 variables

**Details**

Rankings reflect the evaluation of 18 alternative carpet cleaners by one respondent. Description provided in `attr(carpet,"description")`

---

**city**

| city | City distances |

**Description**

City distances

**Usage**

`data(city)`

**Format**

A data frame with 45 rows and 3 variables

**Details**

Distance in miles between nine cities in the USA. The dataset is used to illustrate multi-dimensional scaling (MDS). Description provided in `attr(city, "description")`
city2  

*City distances 2*

**Description**

City distances 2

**Usage**

data(city2)

**Format**

A data frame with 78 rows and 3 variables

**Details**

Distance in miles between 12 cities in the USA. The dataset is used to illustrate multi-dimensional scaling (MDS). Description provided in attr(city2, "description")

---

**clean_loadings**  

*Sort and clean loadings*

**Description**

Sort and clean loadings

**Usage**

clean_loadings(floadings, cutoff = 0, fsort = FALSE, dec = 8, repl = NA)

**Arguments**

- **floadings**: Data frame with loadings
- **cutoff**: Show only loadings with (absolute) values above cutoff (default = 0)
- **fsort**: Sort factor loadings
- **dec**: Number of decimals to show
- **repl**: Replace loadings below the cutoff by NA (or "")

**Details**

See [https://radiant-rstats.github.io/docs/multivariate/full_factor.html](https://radiant-rstats.github.io/docs/multivariate/full_factor.html) for an example in Radiant
Examples

```r
result <- full_factor(shopping, "v1:v6", nr_fact = 2)
clean_loadings(result$floadings, fsort = TRUE, cutoff = .5, dec = 2)
```

**Description**

Perceptions of computer (re)sellers

**Usage**

```r
data(computer)
```

**Format**

A data frame with 5 rows and 8 variables

**Details**

Perceptions of computer (re)sellers. The dataset is used to illustrate perceptual maps. Description provided in `attr(computer, "description")`

**Description**

Conjoint analysis

**Usage**

```r
conjoint(
  dataset, rvar, evar, int = "", by = "none", reverse = FALSE, data_filter = "", envir = parent.frame())
```
Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dataset</td>
<td>Dataset</td>
</tr>
<tr>
<td>rvar</td>
<td>The response variable (e.g., profile ratings)</td>
</tr>
<tr>
<td>evar</td>
<td>Explanatory variables in the regression</td>
</tr>
<tr>
<td>int</td>
<td>Interaction terms to include in the model</td>
</tr>
<tr>
<td>by</td>
<td>Variable to group data by before analysis (e.g., a respondent id)</td>
</tr>
<tr>
<td>reverse</td>
<td>Reverse the values of the response variable ('rvar')</td>
</tr>
<tr>
<td>data_filter</td>
<td>Expression entered in, e.g., Data &gt; View to filter the dataset in Radiant. The expression should be a string (e.g., &quot;price &gt; 10000&quot;)</td>
</tr>
<tr>
<td>envir</td>
<td>Environment to extract data from</td>
</tr>
</tbody>
</table>

Details

See [https://radiant-rstats.github.io/docs/multivariate/conjoint.html](https://radiant-rstats.github.io/docs/multivariate/conjoint.html) for an example in Radiant

Value

A list with all variables defined in the function as an object of class conjoint

See Also

- `summary.conjoint` to summarize results
- `plot.conjoint` to plot results

Examples

```r
conjoint(mp3, rvar = "Rating", evar = "Memory:Shape") %>% str()
```

---

**full_factor**  
*Factor analysis (PCA)*

Description

Factor analysis (PCA)
Usage

```r
full_factor(
  dataset,
  vars,
  method = "PCA",
  hcor = FALSE,
  nr_fact = 1,
  rotation = "varimax",
  data_filter = "",
  envir = parent.frame()
)
```

Arguments

- `dataset`: Dataset
- `vars`: Variables to include in the analysis
- `method`: Factor extraction method to use
- `hcor`: Use polycor::hetcor to calculate the correlation matrix
- `nr_fact`: Number of factors to extract
- `rotation`: Apply varimax rotation or no rotation ("varimax" or "none")
- `data_filter`: Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
- `envir`: Environment to extract data from

Details

See [https://radiant-rstats.github.io/docs/multivariate/full_factor.html](https://radiant-rstats.github.io/docs/multivariate/full_factor.html) for an example in Radiant

Value

A list with all variables defined in the function as an object of class `full_factor`

See Also

- `summary.full_factor` to summarize results
- `plot.full_factor` to plot results

Examples

```r
full_factor(shopping, "v1:v6") %>% str()
```
hclus  
Hierarchical cluster analysis

Description
Hierarchical cluster analysis

Usage

hclus(
  dataset,
  vars,
  labels = "none",
  distance = "sq.euclidian",
  method = "ward.D",
  max_cases = 5000,
  standardize = TRUE,
  data_filter = "",
  envir = parent.frame()
)

Arguments

dataset       Dataset
vars          Vector of variables to include in the analysis
labels        A vector of labels for the leaves of the tree
distance      Distance
method        Method
max_cases     Maximum number of cases allowed (default is 1000). Set to avoid long-running
              analysis in the radiant web-interface
standardize   Standardized data (TRUE or FALSE)
data_filter   Expression entered in, e.g., Data > View to filter the dataset in Radiant. The
              expression should be a string (e.g., "price > 10000")
envir         Environment to extract data from

Details
See https://radiant-rstats.github.io/docs/multivariate/hclus.html for an example in Radiant

Value
A list of all variables used in hclus as an object of class hclus
kclus

See Also

summary.hclus to summarize results
plot.hclus to plot results

Examples

hclus(shopping, vars = "v1:v6") %>% str()

---

kclus  K-clustering

Description

K-clustering

Usage

kclus(
  dataset,
  vars,
  fun = "kmeans",
  hc_init = TRUE,
  distance = "sq.euclidian",
  method = "ward.D",
  seed = 1234,
  nr_clus = 2,
  standardize = TRUE,
  lambda = NULL,
  data_filter = "",
  envir = parent.frame()
)

Arguments

dataset  Dataset
vars  Vector of variables to include in the analysis
fun  Use either "kmeans" or "kproto" for clustering
hc_init  Use centers from hclus as the starting point
distance  Distance for hclus
method  Method for hclus
seed  Random see to use for k-clustering if hc_init is FALSE
nr_clus  Number of clusters to extract
standardize  Standardize data (TRUE or FALSE)
Parameter > 0 to trade off between Euclidean distance of numeric variables and simple matching coefficient between categorical variables. Also a vector of variable specific factors is possible where the order must correspond to the order of the variables in the data. In this case all variables’ distances will be multiplied by their corresponding lambda value.

data_filter Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")

envir Environment to extract data from

Details

See [https://radiant-rstats.github.io/docs/multivariate/kclus.html](https://radiant-rstats.github.io/docs/multivariate/kclus.html) for an example in Radiant

Value

A list of all variables used in kclus as an object of class kclus

See Also

- `summary.kclus` to summarize results
- `plot.kclus` to plot results
- `store.kclus` to add cluster membership to the selected dataset

Examples

```r
kclus(shopping, c("v1:v6"), nr_clus = 3) %>% str()
```

(Dis)similarity based brand maps (MDS)

Description

(Dis)similarity based brand maps (MDS)

Usage

```r
mds(
  dataset,
  id1,
  id2,
  dis,
  method = "metric",
  nr_dim = 2,
  seed = 1234,
  data_filter = "",
  envir = parent.frame()
)
```
.movie

Arguments

- **dataset**: Dataset
- **id1**: A character variable or factor with unique entries
- **id2**: A character variable or factor with unique entries
- **dis**: A numeric measure of brand dissimilarity
- **method**: Apply metric or non-metric MDS
- **nr_dim**: Number of dimensions
- **seed**: Random seed
- **data_filter**: Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
- **envir**: Environment to extract data from

Details

See [https://radiant-rstats.github.io/docs/multivariate/mds.html](https://radiant-rstats.github.io/docs/multivariate/mds.html) for an example in Radiant.

Value

A list of all variables defined in the function as an object of class mds

See Also

- `summary.mds` to summarize results
- `plot.mds` to plot results

Examples

```r
mds(city, "from", "to", "distance") %>% str()
mds(diamonds, "clarity", "cut", "price") %>% str()
```

Description

Conjoint data for Movie theaters

Usage

data(movie)

Format

A data frame with 18 rows and 6 variables
plot.conjoint

Details
Rankings reflect the evaluation of 18 alternative movie theaters by one respondent. Description provided in attr(movie, "description")

mp3
Conjoint data for MP3 players

Description
Conjoint data for MP3 players

Usage
data(mp3)

Format
A data frame with 18 rows and 6 variables

Details
Ratings reflect the evaluation of 18 alternative MP3 players by one respondent. Description provided in attr(mp3, "description")

plot.conjoint
Plot method for the conjoint function

Description
Plot method for the conjoint function

Usage
## S3 method for class 'conjoint'
plot(
  x,
  plots = "pw",
  show = "",
  scale_plot = FALSE,
  shiny = FALSE,
  custom = FALSE,
  ...
)
Arguments

x  
Return value from `conjoint`

plots  
Show either the part-worth ("pw") or importance-weights ("iw") plot

show  
Level in by variable to analyze (e.g., a specific respondent)

scale_plot  
Scale the axes of the part-worth plots to the same range

shiny  
Did the function call originate inside a shiny app

custom  
Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org/ for options.

...  
further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/multivariate/conjoint.html for an example in Radiant

See Also

`conjoint` to generate results

`summary.conjoint` to summarize results

Examples

```r
result <- conjoint(mp3, rvar = "Rating", evar = "Memory:Shape")
plot(result, scale_plot = TRUE)
plot(result, plots = "iw")
```

Description

Plot method for the `full_factor` function

Usage

```r
## S3 method for class 'full_factor'
plot(x, plots = "attr", shiny = FALSE, custom = FALSE, ...)
```
Arguments

- `x`: Return value from `full_factor`
- `plots`: Include attribute ("attr"), respondents ("resp") or both in the plot
- `shiny`: Did the function call originate inside a shiny app
- `custom`: Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org/ for options.
- `...`: further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/multivariate/full_factor.html for an example in Radiant

See Also

- `full_factor` to calculate results
- `plot.full_factor` to plot results

Examples

```r
result <- full_factor(shopping, "v1:v6", nr_fact = 2)
plot(result)
```

Description

Plot method for the hclus function

Usage

```r
## S3 method for class 'hclus'
plot(
x,
plots = c("scree", "change"),
cutoff = 0.05,
shiny = FALSE,
custom = FALSE,
...
)
```
### Arguments

- **x**
  - Return value from `hclus`

- **plots**
  - Plots to return. "change" shows the percentage change in within-cluster heterogeneity as respondents are grouped into different number of clusters, "dendro" shows the dendrogram, "scree" shows a scree plot of within-cluster heterogeneity.

- **cutoff**
  - For large datasets plots can take time to render and become hard to interpret. By selection a cutoff point (e.g., 0.05 percent) the initial steps in hierarchical cluster analysis are removed from the plot.

- **shiny**
  - Did the function call originate inside a shiny app.

- **custom**
  - Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and [https://ggplot2.tidyverse.org/](https://ggplot2.tidyverse.org/) for options.

- **...**
  - Further arguments passed to or from other methods.

### Details

See [https://radiant-rstats.github.io/docs/multivariate/hclus.html](https://radiant-rstats.github.io/docs/multivariate/hclus.html) for an example in Radiant.

### See Also

- `hclus` to generate results
- `summary.hclus` to summarize results

### Examples

```r
result <- hclus(shopping, vars = c("v1:v6"))
plot(result, plots = c("change", "scree"), cutoff = .05)
plot(result, plots = "dendro", cutoff = 0)
```

---

### Description

Plot method for kclus

### Usage

```r
## S3 method for class 'kclus'
plot(x, plots = "density", shiny = FALSE, custom = FALSE, ...)
```
plot.mds

Arguments

x
Return value from `kclus`

plots
One of "density", "bar", or "scatter"

shiny
Did the function call originate inside a shiny app

custom
Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and [https://ggplot2.tidyverse.org/](https://ggplot2.tidyverse.org/) for options.

... further arguments passed to or from other methods

Details

See [https://radiant-rstats.github.io/docs/multivariate/kclus.html](https://radiant-rstats.github.io/docs/multivariate/kclus.html) for an example in Radiant

See Also

- `kclus` to generate results
- `summary.kclus` to summarize results
- `store.kclus` to add cluster membership to the selected dataset

Examples

```r
result <- kclus(shopping, vars = "v1:v6", nr_clus = 3)
plot(result)
```

plot.mds

Plot method for the mds function

Description

Plot method for the mds function

Usage

```r
## S3 method for class 'mds'
plot(x, rev_dim = NULL, fontsize = 5, shiny = FALSE, custom = FALSE, ...)
```

Arguments

x
Return value from `mds`

rev_dim
Flip the axes in plots

fontsize
Font size to use in plots

shiny
Did the function call originate inside a shiny app
plot.pre_factor

Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org/ for options.

... further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/multivariate/mds.html for an example in Radiant

See Also

mds to calculate results

summary.mds to plot results

Examples

result <- mds(city, "from", "to", "distance")
plot(result, fontsz = 7)
plot(result, rev_dim = 1:2)

Description

Plot method for the pre_factor function

Usage

## S3 method for class 'pre_factor'
plot(
  x,
  plots = c("scree", "change"),
  cutoff = 0.2,
  shiny = FALSE,
  custom = FALSE,
  ...
)
Arguments

- **x**: Return value from `pre_factor`
- **plots**: Plots to return. "change" shows the change in eigenvalues as variables are grouped into different number of factors, "scree" shows a scree plot of eigenvalues
- **cutoff**: For large datasets plots can take time to render and become hard to interpret. By selection a cutoff point (e.g., eigenvalues of .8 or higher) factors with the least explanatory power are removed from the plot
- **shiny**: Did the function call originate inside a shiny app
- **custom**: Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and [https://ggplot2.tidyverse.org/](https://ggplot2.tidyverse.org/) for options.
- **...**: further arguments passed to or from other methods

Details

See [https://radiant-rstats.github.io/docs/multivariate/pre_factor.html](https://radiant-rstats.github.io/docs/multivariate/pre_factor.html) for an example in Radiant

See Also

- `pre_factor` to calculate results
- `summary.pre_factor` to summarize results

Examples

```r
result <- pre_factor(shopping, "v1:v6")
plot(result, plots = c("change", "scree"), cutoff = .05)
```

---

plot.prmap

Plot method for the prmap function

Description

Plot method for the prmap function

Usage

```r
## S3 method for class 'prmap'
plot(
  x,
  plots = "",
  scaling = 2,
  fontsize = 5,
)```
seed = 1234,
shiny = FALSE,
custom = FALSE,
... )

Arguments

- `x`: Return value from `prmap`
- `plots`: Components to include in the plot ("brand", "attr"). If data on preferences is available use "pref" to add preference arrows to the plot
- `scaling`: Arrow scaling in the brand map
- `fontsz`: Font size to use in plots
- `seed`: Random seed
- `shiny`: Did the function call originate inside a shiny app
- `custom`: Logical (TRUE, FALSE) to indicate if ggplot object (or list of ggplot objects) should be returned. This option can be used to customize plots (e.g., add a title, change x and y labels, etc.). See examples and https://ggplot2.tidyverse.org/ for options.
- `...`: further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/multivariate/prmap.html for an example in Radiant

See Also

- `prmap` to calculate results
- `summary.prmap` to plot results

Examples

```r
result <- prmap(computer, brand = "brand", attr = "high_end:business")
plot(result, plots = "brand")
plot(result, plots = c("brand", "attr"))
plot(result, scaling = 1, plots = c("brand", "attr"))
prmap(
  retailers,
  brand = "retailer",
  attr = "good_value:cluttered",
  pref = c("segment1", "segment2")
) %>% plot(plots = c("brand", "attr", "pref"))
```
predict.conjoint

Predict method for the conjoint function

Description

Predict method for the conjoint function

Usage

## S3 method for class 'conjoint'
predict(
  object,
  pred_data = NULL,
  pred_cmd = "",
  conf_lev = 0.95,
  se = FALSE,
  interval = "confidence",
  dec = 3,
  envir = parent.frame(),
  ...
)

Arguments

object Return value from `conjoint`
pred_data Provide the dataframe to generate predictions. The dataset must contain all columns used in the estimation
pred_cmd Command used to generate data for prediction
conf_lev Confidence level used to estimate confidence intervals (.95 is the default)
se Logical that indicates if prediction standard errors should be calculated (default = FALSE)
interval Type of interval calculation ("confidence" or "prediction"). Set to "none" if se is FALSE
dec Number of decimals to show
envir Environment to extract data from
... further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/multivariate/conjoint.html for an example in Radiant
predict_conjoint_by

See Also
- conjoint to generate the result
- summary.conjoint to summarize results
- plot.conjoint to plot results

Examples
```
result <- conjoint(mp3, rvar = "Rating", evar = "Memory:Shape")
predict(result, pred_data = mp3)
```

---

predict_conjoint_by  Predict method for the conjoint function when a by variables is used

Description
Predict method for the conjoint function when a by variables is used

Usage
```
predict_conjoint_by(
  object,
  pfun,
  pred_data = NULL,
  pred_cmd = ",",
  conf_lev = 0.95,
  se = FALSE,
  dec = 3,
  envir = parent.frame(),
  ...
)
```

Arguments
- **object**: Return value from `conjoint`
- **pfun**: Function to use for prediction
- **pred_data**: Name of the dataset to use for prediction
- **pred_cmd**: Command used to generate data for prediction
- **conf_lev**: Confidence level used to estimate confidence intervals (.95 is the default)
- **se**: Logical that indicates if prediction standard errors should be calculated (default = FALSE)
- **dec**: Number of decimals to show
- **envir**: Environment to extract data from
- **...**: further arguments passed to or from other methods
Details

See https://radiant-rstats.github.io/docs/multivariate/conjoint.html for an example in Radiant

See Also

conjoint to generate the result
summary.conjoint to summarize results
plot.conjoint to plot results

---

pre_factor Evaluate if data are appropriate for PCA / Factor analysis

Description

Evaluate if data are appropriate for PCA / Factor analysis

Usage

pre_factor(
  dataset,
  vars,
  hcor = FALSE,
  data_filter = "",
  envir = parent.frame()
)

Arguments

dataset Dataset
vars Variables to include in the analysis
hcor Use polycor::hetcor to calculate the correlation matrix
data_filter Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
envir Environment to extract data from

Details

See https://radiant-rstats.github.io/docs/multivariate/pre_factor.html for an example in Radiant

Value

A list with all variables defined in the function as an object of class pre_factor
See Also

- `summary.pre_factor` to summarize results
- `plot.pre_factor` to plot results

Examples

```r
pre_factor(shopping, "v1:v6") %>% str()
```

### print.conjoint.predict

**Print method for predict.conjoint**

**Description**

Print method for predict.conjoint

**Usage**

```r
## S3 method for class 'conjoint.predict'
print(x, ..., n = 20)
```

**Arguments**

- `x` Return value from prediction method
- `...` further arguments passed to or from other methods
- `n` Number of lines of prediction results to print. Use -1 to print all lines

**prmap**

**Attribute based brand maps**

**Description**

Attribute based brand maps

**Usage**

```r
prmap(
  dataset,  # dataset
  brand,    # brand
  attr,     # attribute
  pref = "", # preference
  nr_dim = 2, # number of dimensions
  hcor = FALSE, # horizontal correlation
  data_filter = ",", # data filter
  envir = parent.frame()
)
```
Arguments

- **dataset**: Dataset
- **brand**: A character variable with brand names
- **attr**: Names of numeric variables
- **pref**: Names of numeric brand preference measures
- **nr_dim**: Number of dimensions
- **hcor**: Use polycor::hetcor to calculate the correlation matrix
- **data_filter**: Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "price > 10000")
- **envir**: Environment to extract data from

Details

See [https://radiant-rstats.github.io/docs/multivariate/prmap.html](https://radiant-rstats.github.io/docs/multivariate/prmap.html) for an example in Radiant

Value

A list of all variables defined in the function as an object of class prmap

See Also

- `summary.prmap` to summarize results
- `plot.prmap` to plot results

Examples

```r
prmap(computer, brand = "brand", attr = "high_end:business") %>% str()
```

Description

Launch radiant.multivariate in the default web browser

Usage

```r
radiant.multivariate(state, ...)
```

Arguments

- **state**: Path to state file to load
- **...**: additional arguments to pass to shiny::runApp (e.g., port = 8080)
**radiant.multivariate_viewer**

**Description**

Launch radiant.multivariate in the Rstudio viewer

**Usage**

`radiant.multivariate_viewer(state, ...)`

**Arguments**

- `state`  
  Path to state file to load
- `...`  
  additional arguments to pass to `shiny::runApp` (e.g, `port = 8080`)

**Details**

See [https://radiant-rstats.github.io/docs/](https://radiant-rstats.github.io/docs/) for documentation and tutorials

**Examples**

```r
## Not run:
radiant.multivariate_viewer()

## End(Not run)
```
radiant.multivariate_window

Launch radiant.multivariate in an Rstudio window

Description

Launch radiant.multivariate in an Rstudio window

Usage

radiant.multivariate_window(state, ...)

Arguments

state Path to state file to load
... additional arguments to pass to shiny::runApp (e.g. port = 8080)

Details

See https://radiant-rstats.github.io/docs/ for documentation and tutorials

Examples

## Not run:
radiant.multivariate_window()
## End(Not run)

---

retailers

Perceptions of retailers

Description

Perceptions of retailers

Usage

data(retailers)

Format

A data frame with 6 rows and 10 variables

Details

Consumer evaluations for a set of retailers in the Chicago area on 7 attributes. The dataset is used to illustrate perceptual maps. Description provided in attr(retailers, "description")
shopping

shopping  Shopping attitudes

Description

Shopping attitudes

Usage

data(shopping)

Format

A data frame with 20 rows and 7 variables

Details

Attitudinal data on shopping for 20 consumers. Description provided in attr(shopping, "description")

store.conjoint  Store method for the Multivariate > Conjoint tab

Description

Store method for the Multivariate > Conjoint tab

Usage

## S3 method for class 'conjoint'
store(dataset, object, name, ...)

Arguments

dataset  Dataset
object   Return value from conjoint
name     Variable name(s) assigned to predicted values
...      further arguments passed to or from other methods

Details

Store data frame with PWs or IWs in Radiant r_data list if available
store.conjoint.predict

Description
Store predicted values generated in predict.conjoint

Usage
### S3 method for class 'conjoint.predict'
store(dataset, object, name = "prediction", ...)

Arguments
- dataset: Dataset to add predictions to
- object: Return value from model predict function
- name: Variable name(s) assigned to predicted values
- ...: Additional arguments

Details
See [https://radiant-rstats.github.io/docs/multivariate/conjoint.html](https://radiant-rstats.github.io/docs/multivariate/conjoint.html) for an example in Radiant

Examples
```r
conjoint(mp3, rvar = "Rating", evar = "Memory:Shape") %>%
predict(mp3) %>%
store(mp3, ., name = "pred_pref")
```

store.full_factor

Description
Store factor scores to active dataset

Usage
### S3 method for class 'full_factor'
store(dataset, object, name = "", ...)

Add a cluster membership variable to the active dataset

Description

Add a cluster membership variable to the active dataset

Usage

```r
## S3 method for class 'hclus'
store(dataset, object, nr_clus = 2, name = "", ...)  
```

Arguments

- `dataset`: Dataset to append to cluster membership variable to
- `object`: Return value from `hclus`
- `nr_clus`: Number of clusters to extract
- `name`: Name of cluster membership variable
- `...`: Additional arguments
Details

See https://radiant-rstats.github.io/docs/multivariate/hclus.html for an example in Radiant

See Also

hclus to generate results
summary.hclus to summarize results
plot.hclus to plot results

Examples

hclus(shopping, vars = "v1:v6") %>%
  store(shopping, ., nr_clus = 3) %>%
  head()
**Example**

```r
kclus(shopping, vars = "v1:v6", nr_clus = 3) %>%
  store(shopping, .) %>%
  head()
```

---

**summary.conjoint**

*Summary method for the conjoint function*

**Description**

Summary method for the conjoint function

**Usage**

```r
## S3 method for class 'conjoint'
summary(object, show = "", mc_diag = FALSE, additional = FALSE, dec = 3, ...)
```

**Arguments**

- `object`: Return value from `conjoint`
- `show`: Level in by variable to analyze (e.g., a specific respondent)
- `mc_diag`: Shows multicollinearity diagnostics.
- `additional`: Show additional regression results
- `dec`: Number of decimals to show
- `...`: further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/multivariate/conjoint.html](https://radiant-rstats.github.io/docs/multivariate/conjoint.html) for an example in Radiant

**See Also**

- `conjoint` to generate results
- `plot.conjoint` to plot results

**Examples**

```r
result <- conjoint(mp3, rvar = "Rating", evar = "Memory:Shape")
summary(result, mc_diag = TRUE)
```
### Description

Summary method for the `full_factor` function

### Usage

```r
## S3 method for class 'full_factor'
summary(object, cutoff = 0, fsort = FALSE, dec = 2, ...)
```

### Arguments

- **object**: Return value from `full_factor`
- **cutoff**: Show only loadings with (absolute) values above cutoff (default = 0)
- **fsort**: Sort factor loadings
- **dec**: Number of decimals to show
- **...**: further arguments passed to or from other methods

### Details

See [https://radiant-rstats.github.io/docs/multivariate/full_factor.html](https://radiant-rstats.github.io/docs/multivariate/full_factor.html) for an example in Radiant

### See Also

- `full_factor` to calculate results
- `plot.full_factor` to plot results

### Examples

```r
result <- full_factor(shopping, "v1:v6", nr_fact = 2)
summary(result)
summary(result, cutoff = .5, fsort = TRUE)
```
Description

Summary method for the hclus function

Usage

## S3 method for class 'hclus'

summary(object, ...)  

Arguments

object  
Return value from hclus

...  
Further arguments passed to or from other methods

Details

See https://radiant-rstats.github.io/docs/multivariate/hclus.html for an example in Radiant

See Also

hclus to generate results
plot.hclus to plot results

Examples

result <- hclus(shopping, vars = c("v1:v6"))
summary(result)

Description

Summary method for kclus

Usage

## S3 method for class 'kclus'

summary(object, dec = 2, ...)


Arguments

- object: Return value from `kclus`
- dec: Number of decimals to show
- ...: further arguments passed to or from other methods

Details

See [https://radiant-rstats.github.io/docs/multivariate/kclus.html](https://radiant-rstats.github.io/docs/multivariate/kclus.html) for an example in Radiant

See Also

- `kclus` to generate results
- `plot.kclus` to plot results
- `store.kclus` to add cluster membership to the selected dataset

Examples

```r
result <- kclus(shopping, vars = "v1:v6", nr_clus = 3)
summary(result)
```

---

**summary.mds**

Summary method for the mds function

Description

Summary method for the mds function

Usage

```r
## S3 method for class 'mds'
summary(object, dec = 2, ...)
```

Arguments

- object: Return value from `mds`
- dec: Rounding to use for output (default = 2). +1 used for stress measure
- ...: further arguments passed to or from other methods

Details

See [https://radiant-rstats.github.io/docs/multivariate/mds.html](https://radiant-rstats.github.io/docs/multivariate/mds.html) for an example in Radiant
**summary.pre_factor**

**See Also**

- `mds` to calculate results
- `plot.mds` to plot results

**Examples**

```r
result <- mds(city, "from", "to", "distance")
summary(result, dec = 1)
```

---

**summary.pre_factor**  
*Summary method for the pre_factor function*

**Description**

Summary method for the `pre_factor` function

**Usage**

```r
## S3 method for class 'pre_factor'
summary(object, dec = 2, ...)
```

**Arguments**

- `object`  
  Return value from `pre_factor`
- `dec`  
  Rounding to use for output
- `...`  
  further arguments passed to or from other methods

**Details**

See [https://radiant-rstats.github.io/docs/multivariate/pre_factor.html](https://radiant-rstats.github.io/docs/multivariate/pre_factor.html) for an example in Radiant

**See Also**

- `pre_factor` to calculate results
- `plot.pre_factor` to plot results

**Examples**

```r
result <- pre_factor(shopping, "v1:v6")
summary(result)
pre_factor(computer, "high_end:business") %>% summary()
```
Summary method for the prmap function

Usage

## S3 method for class 'prmap'
summary(object, cutoff = 0, dec = 2, ...)

Arguments

- **object**: Return value from `prmap`
- **cutoff**: Show only loadings with (absolute) values above cutoff (default = 0)
- **dec**: Rounding to use for output
- **...**: further arguments passed to or from other methods

Details

See [https://radiant-rstats.github.io/docs/multivariate/prmap.html](https://radiant-rstats.github.io/docs/multivariate/prmap.html) for an example in Radiant

See Also

- `prmap` to calculate results
- `plot.prmap` to plot results

Examples

```r
result <- prmap(computer, brand = "brand", attr = "high_end:business")
summary(result)
summary(result, cutoff = .3)
prmap(
  computer,
  brand = "brand", attr = "high_end:dated",
  pref = c("innovative", "business")
) %>% summary()
```
Function to calculate the PW and IW table for conjoint

Description
Function to calculate the PW and IW table for conjoint

Usage
the_table(model, dataset, evar)

Arguments
model Tidied model results (broom) output from `conjoint` passed on by `summary.conjoint`
dataset Conjoint data
evar Explanatory variables used in the conjoint regression

Details
See [https://radiant-rstats.github.io/docs/multivariate/conjoint.html](https://radiant-rstats.github.io/docs/multivariate/conjoint.html) for an example in Radiant

See Also
`conjoint` to generate results
`summary.conjoint` to summarize results
`plot.conjoint` to plot results

Examples
```
result <- conjoint(mp3, rvar = "Rating", evar = "Memory:Shape")
the_table(tidy(result$model_list[[1]]["model"]), result$dataset, result$evar)
```

toothpaste Toothpaste attitudes

Description
Toothpaste attitudes

Usage
data(toothpaste)
tpbrands

Format
A data frame with 60 rows and 10 variables

Details
Attitudinal data on toothpaste for 60 consumers. Description provided in attr(toothpaste, "description")

Description
Toothpaste brands

Usage
data(tpbrands)

Format
A data frame with 45 rows and 4 variables

Details
Perceived (dis)similarity of a set of toothpaste brands. The dataset is used to illustrate multi-dimensional scaling (MDS). Description provided in attr(tpbrands, "description")
Index

* datasets
  carpet, 3
city, 3
city2, 4
clean_loadings, 4
computer, 5
movie, 11
mp3, 12
retailers, 26
shopping, 27
toothpaste, 37
tpbrands, 38
carpet, 3
city, 3
city2, 4
clean_loadings, 4
computer, 5
conjoint, 5, 13, 20–22, 31, 37
full_factor, 6, 14, 29, 32
hclus, 8, 15, 29, 30, 33
kclus, 9, 16, 30, 34
mds, 10, 16, 17, 34, 35
movie, 11
mp3, 12
plot.conjoint, 6, 12, 21, 22, 31, 37
plot.full_factor, 7, 13, 14, 29, 32
plot.hclus, 9, 14, 30, 33
plot.kclus, 10, 15, 30, 34
plot.mds, 11, 16, 35
plot.pre_factor, 17, 23, 35
plot.prmap, 18, 24, 36
pre_factor, 18, 22, 35
predict.conjoint, 20
predict_conjoint_by, 21
print.conjoint.predict, 23
prmap, 19, 23, 36
radiant.multivariate, 24
radiant.multivariate_viewer, 25
radiant.multivariate_window, 26
retailers, 26
shopping, 27
store.conjoint, 27
store.conjoint.predict, 28
store.full_factor, 28
store.hclus, 29
store.kclus, 10, 16, 30, 34
summary.conjoint, 6, 13, 21, 22, 31, 37
summary.full_factor, 7, 29, 32
summary.hclus, 9, 15, 30, 33
summary.kclus, 10, 16, 30, 33
summary.mds, 11, 17, 34
summary.pre_factor, 18, 23, 35
summary.prmap, 19, 24, 36
the_table, 37
toothpaste, 37
tpbrands, 38