Package ‘ggcorrplot’

October 13, 2022

Type Package

Title Visualization of a Correlation Matrix using ‘ggplot2’

Version 0.1.4

Date 2029-09-27

Description The 'ggcorrplot' package can be used to visualize easily a correlation matrix using 'ggplot2'. It provides a solution for reordering the correlation matrix and displays the significance level on the plot. It also includes a function for computing a matrix of correlation p-values.

License GPL-2


BugReports https://github.com/kassambara/ggcorrplot/issues

Depends R (>= 3.3), ggplot2 (>= 3.3.6)

Imports reshape2, stats

Suggests testthat (>= 3.0.0), knitr, spelling, vdiffr (>= 1.0.0)

Encoding UTF-8

Language en-US

RoxygenNote 7.1.0

Config/testthat/edition 3

NeedsCompilation no

Author Alboukadel Kassambara [aut, cre], Indrajeet Patil [ctb] (<https://orcid.org/0000-0003-1995-6531>, @patilindrejeets)

Maintainer Alboukadel Kassambara <alboukadel.kassambara@gmail.com>

Repository CRAN

Date/Publication 2022-09-27 02:50:02 UTC
ggcorrplot

**R topics documented:**

- ggcorrplot

---

**Index**

---

### ggcorrplot

*Visualization of a correlation matrix using ggplot2*

#### Description

- `ggcorrplot()`: A graphical display of a correlation matrix using ggplot2.
- `cor_pmat()`: Compute a correlation matrix p-values.

#### Usage

```r
ggcorrplot(
corr,
  method = c("square", "circle"),
  type = c("full", "lower", "upper"),
  ggtheme = ggplot2::theme_minimal,
  title = "",
  show.legend = TRUE,
  legend.title = "Corr",
  show.diag = NULL,
  colors = c("blue", "white", "red"),
  outline.color = "gray",
  hc.order = FALSE,
  hc.method = "complete",
  lab = FALSE,
  lab_col = "black",
  lab_size = 4,
  p.mat = NULL,
  sig.level = 0.05,
  insig = c("pch", "blank"),
  pch = 4,
  pch.col = "black",
  pch.cex = 5,
  tl.cex = 12,
  tl.col = "black",
  tl.srt = 45,
  digits = 2,
  as.is = FALSE
)

cor_pmat(x, ...)
```
Arguments

corr  the correlation matrix to visualize
method character, the visualization method of correlation matrix to be used. Allowed values are "square" (default), "circle".
type character, "full" (default), "lower" or "upper" display.
ggtheme ggplot2 function or theme object. Default value is 'theme_minimal'. Allowed values are the official ggplot2 themes including theme_gray, theme_bw, theme_minimal, theme_classic, theme_void, .... Theme objects are also allowed (e.g., 'theme_classic()').
title character, title of the graph.
show.legend logical, if TRUE the legend is displayed.
legend.title a character string for the legend title. lower triangular, upper triangular or full matrix.
show.diag NULL or logical, whether display the correlation coefficients on the principal diagonal. If NULL, the default is to show diagonal correlation for type = "full" and to remove it when type is one of "upper" or "lower".
colors a vector of 3 colors for low, mid and high correlation values.
outline.color the outline color of square or circle. Default value is "gray".
hc.order logical value. If TRUE, correlation matrix will be hc.ordered using hclust function.
hc.method the agglomeration method to be used in hclust (see ?hclust).
lab logical value. If TRUE, add correlation coefficient on the plot.
lab_col, lab_size size and color to be used for the correlation coefficient labels. used when lab = TRUE.
p.mat matrix of p-value. If NULL, arguments sig.level, insig, pch, pch.col, pch.cex is invalid.
sig.level significant level, if the p-value in p-mat is bigger than sig.level, then the corresponding correlation coefficient is regarded as insignificant.
insig character, specialized insignificant correlation coefficients, "pch" (default), "blank". If "blank", wipe away the corresponding glyphs; if "pch", add characters (see pch for details) on corresponding glyphs.
pch add character on the glyphs of insignificant correlation coefficients (only valid when insig is "pch"). Default value is 4.
pch.col, pch.cex the color and the cex (size) of pch (only valid when insig is "pch").
tl.cex, tl.col, tl.srt the size, the color and the string rotation of text label (variable names).
digits Decides the number of decimal digits to be displayed (Default: '2').
as.is A logical passed to melt.array. If TRUE, dimnames will be left as strings instead of being converted using type.convert.
x numeric matrix or data frame
... other arguments to be passed to the function cor.test.
Value

- `ggcorrplot()`: Returns a ggplot2
- `cor_pmat()`: Returns a matrix containing the p-values of correlations

Examples

```r
# Compute a correlation matrix
data(mtcars)
corr <- round(cor(mtcars), 1)
corr

data(mtcars)
corr <- round(cor(mtcars), 1)
corr

# Compute a matrix of correlation p-values
p.mat <- cor_pmat(mtcars)
p.mat

# Visualize the correlation matrix
# --------------------------------
# method = "square" or "circle"
ggcorrplot(corr)
ggcorrplot(corr, method = "circle")

# Reordering the correlation matrix
# --------------------------------
# using hierarchical clustering
ggcorrplot(corr, hc.order = TRUE, outline.color = "white")

# Types of correlogram layout
# --------------------------------
# Get the lower triangle
ggcorrplot(corr,
  hc.order = TRUE, type = "lower",
  outline.color = "white"
)
# Get the upper triangle
ggcorrplot(corr,
  hc.order = TRUE, type = "upper",
  outline.color = "white"
)

# Change colors and theme
# --------------------------------
# Argument colors
ggcorrplot(corr,
  hc.order = TRUE, type = "lower",
  outline.color = "white",
  ggtheme = ggplot2::theme_gray,
  colors = c("#6D9EC1", "white", "#E46726")
)

# Add correlation coefficients
# --------------------------------
# argument lab = TRUE
```
ggcorrplot(corr,
    hc.order = TRUE, type = "lower",
    lab = TRUE,
    ggtheme = ggplot2::theme_dark(),
  )

# Add correlation significance level
# --------------------------------
# Argument p.mat
# Barring the no significant coefficient
ggcorrplot(corr,
    hc.order = TRUE,
    type = "lower", p.mat = p.mat
  )
# Leave blank on no significant coefficient
ggcorrplot(corr,
    p.mat = p.mat, hc.order = TRUE,
    type = "lower", insig = "blank"
  )

# Changing number of digits for correlation coefficient
# --------------------------------
# ggcorrplot(cor(mtcars),
#     type = "lower",
#     insig = "blank",
#     lab = TRUE,
#     digits = 3
#   )
Index

cor_pmat (ggcorrplot), 2

ggcorrplot, 2

melt.array, 3

type.convert, 3