Package ‘corx’

October 24, 2019

Type Package
Title Create and Format Correlation Matrices
Version 1.0.2
Date 2019-10-21

Description Create correlation (or partial correlation) matrices. Correlation matrices are formatted with significance stars based on user preferences. Matrices of coefficients, p-values, and number of pairwise observations are returned. Send resultant formatted matrices to the clipboard to be pasted into excel and other programs. A plot method allows users to visualize correlation matrices created with 'corx'.

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Encoding UTF-8

LazyData true
Imports ppcor, crayon, ggcorrplot, glue, psych, clipr, tidyselect, moments

RoxygenNote 6.1.1
Suggests testthat

NeedsCompilation no

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Repository CRAN
Date/Publication 2019-10-24 16:50:02 UTC

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Description

Creates an apa matrix

Usage

apa_matrix(r_matrix, p_matrix, stars, round, remove_lead, triangle)

Arguments

r_matrix     correlation coefficient matrix
p_matrix     p-value matrix
stars        a vector of pvalue stars
round        How many digits to round to?
remove_lead  a logical. Should leading zeros be removed?
triangle     can select lower upper or NULL

Description

check all classes are as expected

Usage

check_classes(data, ok_classes, stop_message)

Arguments

data       the data object
ok_classes  a vector of allowed classes
stop_message a character string provided to users if error triggers.
**Description**

Creates an object of class 'corx'. This function calculates correlation matrices. It stores effect sizes, p-values, the number of pairwise observations, and a formatted correlation matrix in a list. The argument 'z' allows for control variables to be assigned. If z does not equal NULL, partial correlations are performed. Methods are exported for the generic functions 'print', 'plot', 'summary', 'data.frame' and, 'coef'.

**Usage**

```r
corx(data, x = NULL, y = NULL, z = NULL, method = c("pearson", "spearman", "kendall"), stars = c(0.05), round = 2, remove_lead = TRUE, triangle = NULL, caption = NULL, note = NULL, describe = FALSE, grey_nonsig = TRUE, ...)
```

**Arguments**

- **data**: A data.frame or matrix
- **x**: a vector of rownames. Defaults to all
- **y**: a vector of colnames. Defaults to all
- **z**: a vector of colnames. Control variables to be used in partial correlations - defaults to NULL
- **method**: a string. One of "pearson", "spearman", or "kendall"
- **stars**: a numeric vector. This argument defines cut-offs for p-value stars.
- **round**: a scalar. Number of digits in printing
- **remove_lead**: a logical. if TRUE (the default), leading zeros are removed in summaries
- **triangle**: one of "lower", "upper" or NULL (the default)
- **caption**: table caption. Passed to plots
- **note**: table note
- **describe**: a list of functions. If functions are supplied to describe, new columns will be bound to the 'APA matrix' for each function in the list. Describe also accepts a variety of shortcuts. If describe is set to TRUE, mean and standard deviation are returned for all row variables. Describe can accept a character vector to call the following descriptive functions: c('mean', 'sd', 'var', 'median', 'iqr', 'skewness', 'kurtosis'). These shortcuts are powered by 'tidyselect'. Skewness and kurtosis are calculated using the 'moments' package. All functions retrieved with shortcuts remove missing values.
- **grey_nonsig**: a logical. Should non-significant values be grey in output? This argument does nothing if describe is not set to FALSE
- **...**: additional arguments
Details

'corx' constructs intercorrelation matrices using 'psych::corr.test'. P-values attained are not adjusted for multiple comparisons. The argument z can be used to specify control variables. If control variables are specified, partial correlations are calculated using 'ppcor::ppcor.test'. Asymmetrical correlation matrices can be constructed using the arguments 'x' and 'y'. The arguments 'x', 'y', and 'z' are powered by 'tidyselect::vars_select'.

Value

A list of class 'corx' which includes:

- "call" The call
- "apa" An 'APA' formatted correlation matrix with significance stars
- "r" Raw correlation coefficients
- "p" Raw p-values
- "n" Pairwise observations
- "caption" Object caption
- "note" Object note

Examples

cor_mat <- corx(mtcars, x = c(mpg, cyl, disp), y = c(wt, drat, disp, qsec),
               z = wt, round = 2, stars = c(0.05),
               caption = "Controlling for weight",
               describe = list("mean" = function(x) mean(x,na.rm=TRUE)))

cor_mat
coef(cor_mat)
cor_mat$p
plot(cor_mat)
cor_2 <- corx(iris[,-5], describe = c(median, IQR = iqr, kurt = kurtosis),
               note = "Using shortcuts to select describe functions", triangle = "lower")
cor_2

digits

digits

Description

Consistent rounding for strings

Usage

digits(x, n = 2)

Arguments

- x number to round
- n number of digits
Description

A flexible correlation function

Usage

get_cor(data, x, y, method, partial)

Arguments

data data
x variable 1
y variable 2
method correlation method
partial control for anything?

Description

Creates matrices of partial correlations including r, n, and p

Usage

partial_matrix(data, x, y, method, partial)

Arguments

data the data object
x rownames
y colnames
method the method
partial variables to partial out
par_matrix

Description

This function is used to construct final matrices.

Usage

par_matrix(results, x, y)

Arguments

results          results dataset
x                one set of variables
y                another set of variables

plot.corx

S3 class corx

Description

S3 class corx

Usage

## S3 method for class 'corx'
plot(x, ...)

Arguments

x                a corx object
...              other arguments to ggcorrplot::ggcorrplot
Description

print.corx

Usage

## S3 method for class 'corx'
print(x, ...)

Arguments

x          object
...        extra arguments

to_clipboard

to_clipboard

Description

Sends a formatted corx table to the clipboard so that it can be pasted into excel.

Usage

to_clipboard(x, ...)

Arguments

x          a corx object, matrix, or data.frame
...        additional arguments passed to ’clipr::write_clip’
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