

Package ‘ezr’

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Title Easy Use of R via Shiny App for Basic Analyses of Experimental Data

Version 0.1.5

Description Runs a Shiny App in the local machine for basic statistical and graphical analyses. The point-and-click interface of Shiny App enables obtaining the same analysis outputs (e.g., plots and tables) more quickly, as compared with typing the required code in R, especially for users without much experience or expertise with coding. Examples of possible analyses include tabulating descriptive statistics for a variable, creating histograms by experimental groups, and creating a scatter plot and calculating the correlation between two variables.

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URL <https://github.com/jinkim3/ezr>

BugReports <https://github.com/jinkim3/ezr/issues>

Imports data.table, DT, ggplot2, ggridges, moments, shiny, shinydashboard, stats, weights

Encoding UTF-8

LazyData true

RoxygenNote 7.1.1

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desc_stats	<i>Descriptive statistics</i>
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Description

Returns descriptive statistics for a numeric vector.

Usage

```
desc_stats(vector = NULL, notify_na_count = NULL)
```

Arguments

vector	a numeric vector
notify_na_count	if TRUE, notify how many observations were removed due to missing values. By default, NA count will be printed only if there are any NA values.

Value

a named numeric vector

Examples

```
desc_stats(1:100)
desc_stats(c(1:100, NA))
```

histogram_by_group	<i>Histogram by group</i>
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Description

Creates histograms by group to compare distributions

Usage

```

histogram_by_group(
  data = NULL,
  iv_name = NULL,
  dv_name = NULL,
  order_of_groups_top_to_bot = NULL,
  number_of_bins = 40,
  space_between_histograms = 0.15
)

```

Arguments

data a data object (a data frame or a data.table)
iv_name name of the independent variable
dv_name name of the dependent variable
order_of_groups_top_to_bot
 a character vector indicating the desired presentation order of levels in the independent variable (from the top to bottom). Omitting a group in this argument will remove the group in the set of histograms.
number_of_bins number of bins for the histograms (default = 40)
space_between_histograms
 space between histograms (minimum = 0, maximum = 1, default = 0.15)

Value

a ggplot object

Examples

```

histogram_by_group(data = mtcars, iv_name = "cyl", dv_name = "mpg")
histogram_by_group(data = mtcars, iv_name = "cyl", dv_name = "mpg",
  order_of_groups_top_to_bot = c("8", "4"), number_of_bins = 10,
  space_between_histograms = 0.5)

```

pretty_round_p_value *Pretty round p-value*

Description

Pretty round p-value

Usage

```

pretty_round_p_value(
  p_value_vector = NULL,
  round_digits_after_decimal = 3,
  include_p_equals = FALSE
)

```

Arguments

`p_value_vector` one number or a numeric vector
`round_digits_after_decimal`
 round to nth digit after decimal
`include_p_equals`
 if TRUE, output will be a string of mathematical expression including "p", e.g.,
 "p < .01"

Examples

```

pretty_round_p_value(p_value_vector = 0.049,
  round_digits_after_decimal = 2, include_p_equals = FALSE)
pretty_round_p_value(c(0.0015, 0.0014), include_p_equals = TRUE)
  
```

 scatterplot

Scatterplot

Description

Creates a scatter plot and calculates a correlation between two variables

Usage

```

scatterplot(
  data = NULL,
  x_var_name = NULL,
  y_var_name = NULL,
  point_label_var_name = NULL,
  weight_var_name = NULL,
  alpha = 1,
  annotate_stats = FALSE,
  line_of_fit_type = "lm",
  ci_for_line_of_fit = FALSE,
  x_axis_label = NULL,
  y_axis_label = NULL,
  point_labels_size_range = c(3, 12),
  jitter_x_percent = 0,
  jitter_y_percent = 0
)
  
```

Arguments

`data` a data object (a data frame or a data.table)
`x_var_name` name of the variable that will go on the x axis
`y_var_name` name of the variable that will go on the y axis

point_label_var_name	name of the variable that will be used to label individual observations
weight_var_name	name of the variable by which to weight the individual observations for calculating correlation and plotting the line of fit
alpha	opacity of the dots (0 = completely transparent, 1 = completely opaque)
annotate_stats	if TRUE, the correlation and p-value will be annotated at the top of the plot
line_of_fit_type	if line_of_fit_type = "lm", a regression line will be fit; if line_of_fit_type = "loess", a local regression line will be fit; if line_of_fit_type = "none", no line will be fit
ci_for_line_of_fit	if ci_for_line_of_fit = TRUE, confidence interval for the line of fit will be shaded
x_axis_label	alternative label for the x axis
y_axis_label	alternative label for the y axis
point_labels_size_range	minimum and maximum size for dots on the plot when they are weighted
jitter_x_percent	horizontally jitter dots by a percentage of the range of x values
jitter_y_percent	vertically jitter dots by a percentage of the range of y values

Value

a ggplot object

Examples

```
scatterplot(data = mtcars, x_var_name = "wt", y_var_name = "mpg")
scatterplot(data = mtcars, x_var_name = "wt", y_var_name = "mpg",
point_label_var_name = "hp", weight_var_name = "drat",
annotate_stats = TRUE)
scatterplot(data = mtcars, x_var_name = "wt", y_var_name = "mpg",
point_label_var_name = "hp", weight_var_name = "cyl",
annotate_stats = TRUE)
```

se_of_mean

Standard error of the mean

Description

Standard error of the mean

Usage

```
se_of_mean(vector, na.rm = TRUE, notify_na_count = NULL)
```

Arguments

`vector` a numeric vector

`na.rm` if TRUE, NA values will be removed before calculation

`notify_na_count` if TRUE, notify how many observations were removed due to missing values. By default, NA count will be printed only if there are any NA values.

Examples

```
se_of_mean(c(1:10, NA))
```

start_ezr	<i>Start ezr</i>
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Description

Starts the ezr program on the local machine

Usage

```
start_ezr(
  data_for_ezr = NULL,
  sigfig = 3,
  select_list_max = 1e+05,
  ezr_saved_analysis_file_name = "ezr_saved_analysis.csv",
  ezr_run_analysis_file_name = "ezr_run_analysis.csv"
)
```

Arguments

`data_for_ezr` a data object (a data frame or a data.table)

`sigfig` number of significant digits to round to

`select_list_max` maximum number of variable names to display for dropdown menus

`ezr_saved_analysis_file_name` name of the .csv file on which saved analysis will be recorded (default = "ezr_saved_analysis.csv")

`ezr_run_analysis_file_name` name of the .csv file on which all conducted analyses will be recorded (default = "ezr_run_analysis.csv")

Value

There will be no output from this function. Rather, the ezr program will open on a new tab or window of the local machine's web browser

Examples

```
if (interactive()) {start_ezr(data = mtcars)}
```

tabulate_vector	<i>Tabulate vector</i>
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Description

Shows frequency and proportion of unique values in a table format

Usage

```
tabulate_vector(  
  vector = NULL,  
  na.rm = TRUE,  
  sort_by_decreasing_count = NULL,  
  sort_by_increasing_count = NULL,  
  sort_by_decreasing_value = NULL,  
  sort_by_increasing_value = NULL,  
  total_included = TRUE,  
  sigfigs = NULL,  
  round_digits_after_decimal = NULL,  
  output_type = "dt"  
)
```

Arguments

vector	a character or numeric vector
na.rm	if TRUE, NA values will be removed before calculating frequencies and proportions.
sort_by_decreasing_count	if TRUE, the output table will be sorted in the order of decreasing frequency.
sort_by_increasing_count	if TRUE, the output table will be sorted in the order of increasing frequency.
sort_by_decreasing_value	if TRUE, the output table will be sorted in the order of decreasing value.
sort_by_increasing_value	if TRUE, the output table will be sorted in the order of increasing value.
total_included	if TRUE, the output table will include a row for total counts.
sigfigs	number of significant digits to round to

`round_digits_after_decimal`
round to nth digit after decimal (alternative to `sigfigs`)

`output_type` if `output_type = "df"`, return a `data.frame`. By default, `output_type = "dt"`, which will return a `data.table`.

Value

a `data.table` or `data.frame`

Examples

```
tabulate_vector(c("a", "b", "b", "c", "c", "c", NA))
tabulate_vector(c("a", "b", "b", "c", "c", "c", NA),
  sort_by_increasing_count = TRUE)
tabulate_vector(c("a", "b", "b", "c", "c", "c", NA),
  sort_by_decreasing_value = TRUE)
tabulate_vector(c("a", "b", "b", "c", "c", "c", NA),
  sort_by_increasing_value = TRUE)
tabulate_vector(c("a", "b", "b", "c", "c", "c", NA),
  sigfigs = 4)
tabulate_vector(c("a", "b", "b", "c", "c", "c", NA),
  round_digits_after_decimal = 1)
tabulate_vector(c("a", "b", "b", "c", "c", "c", NA),
  output_type = "df")
```


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