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

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Repository CRAN

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Contents

`desc_stats` *Descriptive statistics*

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` *Histogram by group*

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 *Start ezr*

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` *Tabulate vector*

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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