

Package ‘DemographicTable’

September 17, 2024

Type Package

Title Creating Demographic Table

Version 0.1.9

Date 2024-09-17

Description Functions for creating demographic table with simple summary statistics, with optional comparison(s) over one or more groups. Numeric variables are summarized in means, standard deviations, medians, inter-quartile-ranges (IQR), skewness, Shapiro-Wilk normality test and ranges, and compared using two-sample t-test, Wilcoxon test, ANOVA and/or Kruskal-Wallis test. Logical and factor variables are summarized in counts and percentages and compared using chi-squared test and/or Fisher's exact test.

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Encoding UTF-8

Imports flextable, e1071, xtable

Language en-US

Depends R (>= 4.4.0)

Suggests officer, MASS

RoxygenNote 7.3.2

NeedsCompilation no

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Repository CRAN

Date/Publication 2024-09-17 14:10:08 UTC

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DemographicTable-package
Create Demographic Table

Description

Functions for creating demographic table with simple summary statistics, with optional comparison(s) over one or more groups. Numeric variables are summarized in means, standard deviations, medians, inter-quartile-ranges (IQR), skewness, Shapiro-Wilk normality test and ranges, and compared using two-sample *t*-test, Wilcoxon test, ANOVA and/or Kruskal-Wallis test. Logical and factor variables are summarized in counts and percentages and compared using chi-squared test and/or Fisher's exact test.

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as_flextable.DemographicTable
Convert [DemographicTable](#) to [flextable](#)

Description

Convert a [DemographicTable](#) to [flextable](#) object.

Usage

```
## S3 method for class 'DemographicTable'
as_flextable(x, ...)
```

Arguments

x a [DemographicTable](#) object
 ... potential additional parameters, not currently in use

Value

Function [as_flextable.DemographicTable](#) returns a [flextable](#) object.

Note

End user may use [set_caption](#) to add a caption to the output demographic table.

DemographicTable	<i>Create Demographic Table</i>
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Description

Create a demographic table with simple summary statistics, with optional comparison(s) over one or more groups.

Usage

```
DemographicTable(data, ...)

## S3 method for class 'data.frame'
DemographicTable(
  data,
  data.name = substitute(data),
  groups = NULL,
  keep_missing_group = TRUE,
  exclude = NULL,
  exclude_pattern,
  include,
  include_pattern,
  paired = FALSE,
  robust = TRUE,
  overall = TRUE,
  compare = TRUE,
  pairwise = 3L,
  ...
)
```

Arguments

data	a data.frame
...	additional parameters, currently not in use
data.name	character scalar, or the argument call of data. A user-friendly name of the input data.
groups	character scalar or vector , the name(s) of sub-group(s) for which the summary statistics are to be provided. Default NULL indicating no sub-groups.
keep_missing_group	logical scalar. If TRUE (default), the subjects with missing group are put into a new group ('.missing'). if FALSE, these subjects are removed from group-wise summary statistics.

exclude	character vector , the name(s) of variable(s) to be excluded. Default NULL indicating no variable are to be excluded.
exclude_pattern	(optional) character scalar as regex (regular expression), the pattern of the names of the variable(s) to be excluded.
include	character vector , the name(s) of variable(s) to be included. Default names(data) indicating all variables are to be included.
include_pattern	(optional) character scalar as regex (regular expression), the pattern of the names of the variable(s) to be included.
paired	logical scalar, whether to perform paired test (default FALSE)
robust	logical scalar. If TRUE (default), use non-parametric methods for non-normally distributed numeric variables.
overall	logical scalar. If TRUE (default), a column of overall summary statistics will be provided.
compare	logical scalar. If TRUE (default), comparisons between group(s) will be made.
pairwise	integer scalar, minimum number of groups where pairwise comparisons need to be performed. Default 3L.

Details

A demographic table with simple summary statistics, with optional comparison(s) over one or more groups, is created.

numeric variables are summarized in means, standard deviations, medians, inter-quartile-ranges (IQR), skewness, *p*-value of Shapiro-Wilk normality test and ranges. If group is specified, they are compared using two-sample **t.test**, **wilcox.test** (Wilcoxon / Mann-Whitney), one-way **ao**v (ANOVA) and/or **kruskal.test** (Kruskal-Wallis).

logical and **factor** variables are summarized in counts and percentages. If group is specified, they are compared using **prop.test** (chi-squared) and/or **fisher.test** (Fisher's exact).

Value

Function **DemographicTable** returns an object of S3 class 'DemographicTable', which inherits from **matrix**.

Examples

```
DemographicTable(esoph)
DemographicTable(ToothGrowth, groups = 'supp', include = 'len')
DemographicTable(ToothGrowth, groups = 'supp', include = 'len', paired = TRUE)
DemographicTable(ToothGrowth, groups = 'supp', include = 'len', compare = FALSE)
DemographicTable(warpbreaks, groups = c('wool', 'tension'))
DemographicTable(mtcars, groups = c('vs', 'am'), include = c('mpg', 'cyl', 'disp'))

# with missing value
DemographicTable(airquality, groups = 'Month', exclude = 'Day')
DemographicTable(MASS::survey, groups = 'Smoke', keep_missing_group = FALSE)
```

```

DemographicTable(MASS::survey, groups = 'Smoke', keep_missing_group = FALSE, useNA = 'always')

# write to Word file
library(flextable)
library(officer)
x = read_docx() |> body_add_flextable(value = as_flextable(DemographicTable(esoph)))
(out = file.path(tempdir(), 'demotable.docx'))
print(x, target = out)
# system(paste('open', out)) # works on Mac & Windows, but requires Microsoft Word
file.remove(out)

```

pval_shapiro

p-value from modified Shapiro-Wilk Normality Test

Description

Obtain p -value from [shapiro.test](#), taking into consideration of several exceptions.

Usage

```
pval_shapiro(x, CLT = FALSE, ...)
```

Arguments

x	double vector
CLT	logical scalar, whether to allow the use of Central Limit Theorem, default FALSE
...	additional parameters, currently not in use

Details

Function [pval_shapiro](#) provides a pseudo p -value for several exceptions of [shapiro.test](#), serving as a criteria of whether robust statistics/tests need to be used

$\text{length}(x) < 3L$ returns $p = 0$, indicating that robust methods are needed.

$\text{length}(x) > 5e3L$ returns $p = 1$, indicating that no robust method is needed. For such large sample size, robust methods could be too slow.

CLT & $\text{length}(x) > 30L$ returns $p = 1$, indicating that no robust method is needed because of the use of Central Limit Theorem.

all x values are identical (or all.equal, to be implemented in future release) returns $p = 0$, indicating that robust methods are needed.

Otherwise use the p -value from [shapiro.test](#).

Value

Function [pval_shapiro](#) returns a double scalar.

Examples

```
pval_shapiro(rnorm(5))
sapply(with(airquality, split(Ozone, f = Month)), FUN = pval_shapiro)
```

rmd_.DemographicTable *Create R Markdown Script for [DemographicTable](#)*

Description

Method dispatch to [DemographicTable](#) for S3 generic rmd_ (in a different master package).

Usage

```
rmd_.DemographicTable(x, xnm, type, ...)
```

Arguments

x	a DemographicTable
xnm	language or character scalar, call of x
type	..
...	additional parameters, currently not in use

Value

Function [rmd_.DemographicTable](#) returns a [character vector](#).

Sprintf.DemographicTable

Short Paragraph to Describe a [DemographicTable](#)

Description

To create a short paragraph to describe a [DemographicTable](#)

Usage

```
Sprintf.DemographicTable(model, ...)
```

Arguments

model	a DemographicTable
...	additional parameters, currently not in use

Value

Function `Sprintf.DemographicTable` returns a [noquote character](#) scalar.

Examples

```
Sprintf.DemographicTable(DemographicTable(esoph))
Sprintf.DemographicTable(DemographicTable(ToothGrowth, groups = 'supp', include = 'len'))
```

summaryText	<i>Summary Text</i>
-------------	---------------------

Description

Provide the summary text of an R object

Usage

```
summaryText(x, fmt, ...)

## Default S3 method:
summaryText(x, fmt = "%.2f", ...)

## S3 method for class 'factor'
summaryText(x, fmt = "%.1f", useNA = c("no", "always"), ...)

## S3 method for class 'ordered'
summaryText(x, fmt = "%.1f", useNA = c("no", "always"), ...)

## S3 method for class 'character'
summaryText(x, ...)

## S3 method for class 'logical'
summaryText(x, fmt = "%.1f", ...)
```

Arguments

x	an R object
fmt	character scalar, format string, see sprintf
...	additional parameters, currently not in use
useNA	character scalar, 'no' (default) or 'always', see table

Value

Function `summaryText` returns a [character](#) scalar.

Examples

```

x = rpois(n = 20L, lambda = 2)
x[sample.int(length(x), 3L)] = NA_integer_
summaryText(x)

# factor
x = state.region
x[2L] = NA_integer_
summaryText(x)

# binary
summaryText(c(TRUE, FALSE, TRUE, NA))
summaryText(c(TRUE, FALSE, TRUE))
summaryText(c(FALSE, FALSE, NA))
summaryText(c(FALSE, FALSE, FALSE))
summaryText(c(NA, NA, NA))

```

```
xtable.DemographicTable
```

Write [DemographicTable](#) to LaTeX

Description

Write [DemographicTable](#) to LaTeX.

Usage

```
## S3 method for class 'DemographicTable'
xtable(x, ...)
```

Arguments

```

x          a DemographicTable object
...       additional parameters of xtable

```

Value

Function [xtable.DemographicTable](#) returns an [xtable](#) object.

Examples

```

(tb = DemographicTable(ToothGrowth, groups = 'supp'))
library(xtable)
print(xtable(tb), sanitize.text.function = identity,
      sanitize.colnames.function = NULL, include.rownames = FALSE)

```


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