Package ‘DemographicTable’

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Type Package
Title Creating Demographic Table
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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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Create Demographic Table

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.

Convert DemographicTable to flextable

Convert a DemographicTable to flextable object.

Usage

```r
## S3 method for class 'DemographicTable'
as_flextable(x, font.size = 9, caption, ...)
```

Arguments

- `x`: a DemographicTable
- `font.size`: integer scalar, the font size (default 8)
- `caption`: (optional) character scalar, the table caption. If missing (default), no caption is included
- `...`: potential additional parameters, not currently in use

Value

as_flextable.DemographicTable returns a flextable object.

See Also

as_flextable fontsize set_caption
class1List

Description
The first class of each columns in a recursive object

Usage
class1List(x)

Arguments
x a data.frame or list

Value
class1List returns a list of the first class of each element of the input.

Examples
class1List(esoph)
class1List(lm(Ozone ~ Wind + Temp, data = airquality))

DemographicTable
Create Demographic Table

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

Usage
DemographicTable(
  data,
  data.name = substitute(data),
  groups = NULL,
  keep_missing_group = TRUE,
  exclude = NULL,
  exclude_pattern,
  include,
  include_pattern,
  overall = TRUE,
  compare = TRUE,
  ...
)

...
**Arguments**

- **data**: a `data.frame`
- **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 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**: character scalar as regular expression, the pattern of the names of the variable(s) to be included.
- **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.
- **...**: potential parameters

**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, Shapiro-Wilk normality test and ranges. If group is specified, they are compared using two-sample t-test, Wilcoxon / Mann-Whitney test, one-way ANOVA and/or Kruskal-Wallis test.

Logical and factor variables are summarized in counts and percentages. If group is specified, they are compared using chi-squared test and/or Fisher exact test.

**Value**

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

**Examples**

```r
DemographicTable(esoph)
DemographicTable(ToothGrowth, groups = 'supp')
DemographicTable(ToothGrowth, groups = 'supp', compare = FALSE)
```
pval_shapiro

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')
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-Wilk normality 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)

Details

pval_shapiro provides a pseudo p-value for the several exceptions of shapiro.test function, serving as a criteria of whether robust statistics/tests need to be used

- length(x) < 3L return 0, robust methods needed
- length(x) > 5e3L return 1, no robust method needed (robust methods could be too slow)
- CLT & length(x) > 30L return 1, no robust method needed because of the use of Central Limit Theorem
- all x values identical return 0, robust methods needed.
- Otherwise use the p-value from shapiro.test
Value

pval_shapiro returns a double scalar.

Examples

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

Description

Provide the summary text of an R object

Usage

summaryText(x, fmt, ...)

Arguments

x an R object
fmt see sprintf
... potential parameters

Value

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, TRUE))
summaryText(c(FALSE, FALSE, FALSE))
summaryText(c(NA, NA, NA))
Write `DemographicTable` to LaTeX.

### Description
Write `DemographicTable` to LaTeX.

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

### Arguments
- `x`: a `DemographicTable`
- `...`: potential parameters of `xtable`

### Value
`xtable.DemographicTable` returns an `xtable` object.

### See Also
- `xtable`

### Examples
```r
(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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