Package 'utile.tables'

January 24, 2023

Title Build Tables for Publication

Version 0.3.0

Description Functions for building customized ready-to-export tables for publication.

License LGPL (>= 2)

URL https://efinite.github.io/utile.tables/

BugReports https://github.com/efinite/utile.tables/issues

Encoding UTF-8

Depends R (>= 3.4.0)

Imports dplyr, purrr (>= 1.0.0), rlang, tidyselect, utile.tools (>= 0.3.0)

Suggests survival

RoxygenNote 7.2.3

NeedsCompilation no

Author Eric Finnesgard [aut, cre], Jennifer Grauberger [aut]

Maintainer Eric Finnesgard <efinite@outlook.com>

Repository CRAN

Date/Publication 2023-01-24 10:40:02 UTC

R topics documented:

build_model *Build models*

Description

Models specified terms in model data against an existing model and returns a clean, human readable table of summarizing the effects and statistics for the newly generated model. This function is meant to simplify fitting a large number of variables against a set of time-to-event data.

Usage

```
build_model(.object, ...)
```

Arguments

.object	An object of a supported class. See S3 methods below.
...	Arguments passed to the appropriate S3 method.

Value

An object of class `tbl_df` (tibble) summarizing the provided object.

See Also

build_model.coxph

build_model.coxph *Build Cox PH models*

Description

Models specified terms in model data against an existing model and returns a clean, human readable table of summarizing the effects and statistics for the newly generated model. This functions greatly simplifies fitting a large number of variables against a set of time-to-event data.

Usage

```
## S3 method for class 'coxph'
build_model(
  .object,
  ...,
  .mv = FALSE,
  .test = c("LRT", "Wald"),
  .col.test = FALSE,
  .level = 0.95,
  .stat.pct.sign = TRUE,
```

```
  .digits = 1,
  .p.digits = 4
)
```

Arguments

.object	An object of class coxph.
...	One or more unquoted expressions separated by commas representing columns in the model data.frame. May be specified using tidyselect helpers.
.mv	A logical. Fit all terms into a single multivariable model. If left FALSE, all terms are fit in their own univariate models.
.test	A character. The name of a stats::drop1 test to use with the model.
.col.test	A logical. Append a columns for the test and accompanying statistic used to derive the p-value.
.level	A double. The confidence level required.
.stat.pct.sign	A logical. Paste a percent symbol after all reported frequencies.
.digits	An integer. The number of digits to round numbers to.
.p.digits	An integer. The number of p-value digits to report. Note that the p-value still rounded to the number of digits specified in .digits.

Value

An object of class data.frame summarizing the provided object. If the tibble package has been installed, a tibble will be returned.

See Also

build_model

Examples

```
library(survival)
library(dplyr)

data_lung <- lung |>
  mutate_at(vars(inst, status, sex), as.factor) |>
  mutate(status = case_when(status == 1 ~ 0, status == 2 ~ 1))

fit <- coxph(Surv(time, status) ~ 1, data = data_lung)

# Create a univariate model for each variable
fit |> build_model(sex, age)
```

build_row *Build summary rows*

Description

Summarize data into a data.frame with row(s). Includes optional stratification and null hypothesis testing using a factor or logical variable.

Usage

```
build_row(x, ...)

## S3 method for class 'data.frame'
build_row(
  x,
  y = NA_real_,
  label = NULL,
  label.stat = TRUE,
  stat.pct.sign = FALSE,
  col.overall = TRUE,
  col.missing = FALSE,
  col.test = FALSE,
  digits = 1,
  ...
)

## S3 method for class 'numeric'
build_row(
  x,
  y = NA_real_,
  label = NULL,
  label.stat = TRUE,
  stat = c("mean", "median"),
  stat.pct.sign = FALSE,
  col.overall = TRUE,
  col.missing = FALSE,
  test = c("anova", "kruskal", "wilcoxon"),
  col.test = FALSE,
  digits = 1,
  p.digits = 4,
  ...
)

## S3 method for class 'logical'
build_row(
  x,
  y = NA_real_,
```

```
  label = NULL,
  label.stat = TRUE,
  inverse = FALSE,
  stat.pct.sign = FALSE,
  col.overall = TRUE,
  col.missing = FALSE,
  test = c("chisq", "fisher"),
  test.simulate.p = FALSE,
  col.test = FALSE,
  digits = 1,
  p.digits = 4,
  ...
)

## S3 method for class 'factor'
build_row(
  x,
  y = NA_real_,
  label = NULL,
  label.stat = TRUE,
  stat.pct.sign = FALSE,
  col.overall = TRUE,
  col.missing = FALSE,
  test = c("chisq", "fisher"),
  test.simulate.p = FALSE,
  col.test = FALSE,
  digits = 1,
  p.digits = 4,
  ...
)
```

Arguments

x	A data.frame, numeric, factor, or logical. Data to summarize.
...	Arguments passed to the appropriate S3 method.
y	A factor or logical. Data to optionally stratify x by.
label	A character. A label for the summarized data.
label.stat	A logical. Append the summary statistic used to the label.
stat.pct.sign	A logical. Paste a percentage symbol with each frequency. frequency.
col.overall	A logical. Append a column with the statistic for all data. If y is not specified, this parameter is ignored.
col.missing	A logical. Append a column with counts of missing data.
col.test	A logical. Append a column with the name of the statistical test used.
digits	An integer. Number of digits to round to.
stat	A character. Name of the summary statistic to use. Supported options include the mean ('mean') and median ('median') for continuous data.

test	A character. Name of statistical test to compare groups. Supported options: [continuous data] ANOVA linear model ('anova'), Kruskal-Wallis ('kruskal'), and Wilcoxon rank sum ('wilcoxon') tests; [nominal data] Pearson's Chi-squared Test ('chisq') and Fisher's Exact Test ('fisher').
p.digits	An integer. Number of p-value digits to report.
inverse	A logical. For logical data, report frequencies of the FALSE values instead.
test.simulate.p	A logical. Whether to use Monte Carlo simulation of the p-value when testing nominal data.

Value

An object of class tbl_df (tibble) summarizing the provided data.

Examples

```
strata <- as.factor(datasets::mtcars$cyl)

# Create a "count" row from a data.frame for a factor
build_row(x = datasets::mtcars, y = strata)

# Create a row summarizing a numeric by a factor
build_row(label = 'MPG', x = as.numeric(datasets::mtcars$mpg), y = strata)

# Create a row summarizing a logical by a factor
build_row(label = 'VS', x = as.logical(datasets::mtcars$vs), y = strata)

# Create a row summarizing a factor by a factor
build_row(label = 'Carb', x = as.factor(datasets::mtcars$carb), y = strata)
```

---

build_table *Build summary tables*

Description

Takes a data or model object and summarizes it into a ready to export, human-readable summary table.

Usage

```
build_table(.object, ...)
```

Arguments

.object	An object of a supported class. See S3 methods below.
...	Arguments passed to the appropriate S3 method.

Value

An object of class tbl_df (tibble) summarizing the provided object.

See Also

build_table.data.frame, build_table.coxph, build_table.lm

`build_table.coxph` *Build summary tables from coxph model objects*

Description

Takes a Cox PH model object and summarizes it into a ready to export, human-readable summary table.

Usage

```
## S3 method for class 'coxph'
build_table(
  .object,
  ...,
  .test = c("LRT", "Wald"),
  .col.test = FALSE,
  .level = 0.95,
  .stat.pct.sign = TRUE,
  .digits = 1,
  .p.digits = 4
)
```

Arguments

`.object`	An object of class coxph.
`...`	One or more unquoted expressions separated by commas representing columns in the data.frame. May be specified using tidyselect helpers. If left empty, all terms are summarized.
`.test`	A character. The name of the stats::drop1 test to use with the model. Supported tests include Wald's Test ('Wald') and Likelihood Ratio Test ('LRT').
`.col.test`	A logical. Append a columns for the test and accompanying statistic used to derive the p-value.
`.level`	A double. The confidence level required.
`.stat.pct.sign`	A logical. Paste a percent symbol after all reported frequencies.
`.digits`	An integer. The number of digits to round numbers to.
`.p.digits`	An integer. The number of p-value digits to report. Note that the p-value still rounded to the number of digits specified in `.digits`.

Value

An object of class `tbl_df` (tibble) summarizing the provided object.

See Also

build_table

Examples

```
library(survival)
library(dplyr)

data_lung <- lung |>
  mutate_at(vars(inst, status, sex), as.factor) |>
  mutate(status = case_when(status == 1 ~ 0, status == 2 ~ 1))

fit <- coxph(Surv(time, status) ~ sex + meal.cal, data = data_lung)

fit |> build_table(Sex = sex, Calories = meal.cal, .test = 'LRT')
```

`build_table.data.frame`

Build summary tables from data.frame objects

Description

Takes a data.frame object and summarizes the columns into a ready to export, human-readable summary table. Capable of stratifying data and performing appropriate hypothesis testing.

Usage

```
## S3 method for class 'data.frame'
build_table(
  .object,
  ...,
  .by,
  .inverse = FALSE,
  .label.stat = TRUE,
  .stat = c("mean", "median"),
  .stat.pct.sign = FALSE,
  .col.overall = TRUE,
  .col.missing = FALSE,
  .test.continuous = c("anova", "kruskal", "wilcoxon"),
  .test.nominal = c("chisq", "fisher"),
  .test.simulate.p = FALSE,
  .col.test = FALSE,
  .digits = 1,
  .p.digits = 4
)
```

Arguments

.object	A data.frame.
...	One or more unquoted expressions separated by commas representing columns in the data.frame. May be specified using tidyselect helpers. If left empty, all columns are summarized.
.by	An unquoted expression. The data column to stratify the summary by.
.inverse	A logical. For logical data, report the frequency of FALSE values instead of the TRUE.
.label.stat	A logical. Append the type of summary statistic to the column label.
.stat	A character. Name of the summary statistic to use for numeric data. Supported options include the mean ('mean') and median ('median').
.stat.pct.sign	A logical. Paste a percent symbol after all reported frequencies.
.col.overall	A logical. Append a column with the statistic for all data. If .by is not specified, this parameter is ignored.
.col.missing	A logical. Append a column listing the frequencies of missing data for each row.
.test.continuous	A character. A character. Name of statistical test to compare groups. Supported options include ANOVA linear model ('anova'), Kruskal-Wallis ('kruskal'), and Wilcoxon rank sum ('wilcoxon') tests.
.test.nominal	A character. Name of statistical test to compare groups. Supported options include Pearson's Chi-squared Test ('chisq') and Fisher's Exact Test ('fisher').
.test.simulate.p	A logical. Whether to use Monte Carlo simulation of the p-value when testing nominal data.
.col.test	A logical. Append a column containing the test each p-value was derived from.
.digits	An integer. The number of digits to round numbers to.
.p.digits	An integer. The number of p-value digits to report.

Value

An object of class tbl_df (tibble) summarizing the provided object.

See Also

build_table

Examples

```
# Sample data
df <- data.frame(
  strata = factor(sample(letters[2:3], 1000, replace = TRUE)),
  numeric = sample(1:100, 1000, replace = TRUE),
  numeric2 = sample(1:100, 1000, replace = TRUE),
  factor = factor(sample(1:5, 1000, replace = TRUE)),
  logical = sample(c(TRUE,FALSE), 1000, replace = TRUE)
```

```
)

# Summarize all columns
build_table(df, .by = strata)

# Summarize & rename selected columns
build_table(df, numeric2, factor, .by = strata)
```

`build_table.lm` *Build summary tables from lm model objects*

Description

Takes a linear regression model object and summarizes it into a ready to export, human-readable summary table.

Usage

```
## S3 method for class 'lm'
build_table(
  .object,
  ...,
  .test = c("F", "Chisq"),
  .col.test = FALSE,
  .level = 0.95,
  .stat.pct.sign = TRUE,
  .digits = 1,
  .p.digits = 4
)
```

Arguments

`.object`	An object of class `lm`.
`...`	One or more unquoted expressions separated by commas representing columns in the data.frame. May be specified using `tidyselect` `helpers`. If left empty, all terms are summarized.
`.test`	A character. The name of the `stats::drop1` test to use with the model. Supported options include the F-Test ('F') and Chi-squared Test ('Chisq').
`.col.test`	A logical. Append a columns for the test and accompanying statistic used to derive the p-value.
`.level`	A double. The confidence level required.
`.stat.pct.sign`	A logical. Paste a percent symbol after all reported frequencies.
`.digits`	An integer. The number of digits to round numbers to.
`.p.digits`	An integer. The number of p-value digits to report. Note that the p-value still rounded to the number of digits specified in `.digits`.

Value

An object of class `tbl_df` (tibble) summarizing the provided object.

See Also

`build_table`

Examples

```
library(dplyr)

data_mtcars <- datasets::mtcars |>
  mutate_at(vars('vs', 'am'), as.logical) |>
  mutate_at(vars('gear', 'carb', 'cyl'), as.factor)

fit <- lm(mpg ~ vs + drat + cyl, data = data_mtcars)

fit |> build_table()
```

Index