Package ‘equatiomatic’

August 27, 2020

Title Transform Models into 'LaTeX' Equations

Version 0.1.0

Description The goal of 'equatiomatic' is to reduce the pain associated with writing 'LaTeX' formulas from fitted models. The primary function of the package, extract_eq(), takes a fitted model object as its input and returns the corresponding 'LaTeX' code for the model.

License MIT + file LICENSE

Depends R (>= 3.3.0)

Imports broom (>= 0.7.0), stats

Suggests texPreview, testthat (>= 2.1.0), knitr, MASS, ordinal, markdown, covr

URL https://github.com/datalorax/equatiomatic

BugReports https://github.com/datalorax/equatiomatic/issues

Encoding UTF-8

LazyData true

RoxygenNote 7.1.1

VignetteBuilder knitr

NeedsCompilation no

Author Daniel Anderson [aut, cre] (<https://orcid.org/0000-0003-4699-4680>), Andrew Heiss [aut] (<https://orcid.org/0000-0002-3948-3914>), Joshua Rosenberg [ctb] (<https://orcid.org/0000-0003-2170-0447>), Jonathan Sidi [ctb] (<https://orcid.org/0000-0002-4222-1819>)

Maintainer Daniel Anderson <daniela@uoregon.edu>

Repository CRAN

Date/Publication 2020-08-27 14:20:06 UTC

R topics documented:

extract_eq ......................................................... 2
penguins ........................................................... 4
print.equation .................................................... 5
extract_eq  

 extract_eq  'LaTeX' code for R models

Description

Extract the variable names from a model to produce a 'LaTeX' equation, which is output to the screen. Supports any model supported by broom::tidy.

Usage

```r
extract_eq(
  model,
  intercept = "alpha",
  greek = "beta",
  raw_tex = FALSE,
  ital_vars = FALSE,
  show_distribution = FALSE,
  wrap = FALSE,
  terms_per_line = 4,
  operator_location = "end",
  align_env = "aligned",
  use_coefs = FALSE,
  coef_digits = 2,
  fix_signs = TRUE
)
```

Arguments

- `model`: A fitted model
- `intercept`: How should the intercept be displayed? Default is "alpha", but can also accept "beta", in which case the it will be displayed as beta zero.
- `greek`: What notation should be used for coefficients? Currently only accepts "beta" (with plans for future development). Can be used in combination with raw_tex to use any notation, e.g., "\hat{\beta}".
- `raw_tex`: Logical. Is the greek code being passed to denote coefficients raw tex code?
- `ital_vars`: Logical, defaults to FALSE. Should the variable names not be wrapped in the \operatorname{} command?
- `show_distribution`: Logical. When fitting a logistic or probit regression, should the binomial distribution be displayed? Defaults to FALSE.
- `wrap`: Logical, defaults to FALSE. Should the terms on the right-hand side of the equation be split into multiple lines? This is helpful with models with many terms.
- `terms_per_line`: Integer, defaults to 4. The number of right-hand side terms to include per line. Used only when wrap is TRUE.
operator_location
Character, one of “end” (the default) or “start”. When terms are split across multiple lines, they are split at mathematical operators like +. If set to “end”, each line will end with a trailing operator (+ or -). If set to “start”, each line will begin with an operator.

align_env
TeX environment to wrap around equation. Must be one of aligned, aligned*, align, or align*. Defaults to aligned.

use_coefs
Logical, defaults to FALSE. Should the actual model estimates be included in the equation instead of math symbols?

coeff_digits
Integer, defaults to 2. The number of decimal places to round to when displaying model estimates.

fix_signs
Logical, defaults to FALSE. If disabled, coefficient estimates that are negative are preceded with a “+” (e.g. 5(x) + -3(z)). If enabled, the "+ -" is replaced with a "-" (e.g. 5(x) -3(z)).

Value
A character of class “equation”.

Examples

# Simple model
mod1 <- lm(mpg ~ cyl + disp, mtcars)
extract_eq(mod1)

# Include all variables
mod2 <- lm(mpg ~ ., mtcars)
extract_eq(mod2)

# Works for categorical variables too, putting levels as subscripts
mod3 <- lm(body_mass_g ~ bill_length_mm + species, penguins)
extract_eq(mod3)

set.seed(8675309)
d <- data.frame(cat1 = rep(letters[1:3], 100),
cat2 = rep(LETTERS[1:3], each = 100),
cont1 = rnorm(300, 100, 1),
cont2 = rnorm(300, 50, 5),
out = rnorm(300, 10, 0.5))
mod4 <- lm(out ~ ., d)
extract_eq(mod4)

# Don't italicize terms
extract_eq(mod1, ital_vars = FALSE)

# Wrap equations in an "aligned" environment
extract_eq(mod2, wrap = TRUE)

# Wider equation wrapping
extract_eq(mod2, wrap = TRUE, terms_per_line = 4)
# Include model estimates instead of Greek letters
extract_eq(mod2, wrap = TRUE, terms_per_line = 2, use_coefs = TRUE)

# Don’t fix doubled-up “+ -” signs
extract_eq(mod2, wrap = TRUE, terms_per_line = 4, use_coefs = TRUE, fix_signs = FALSE)

# Use other model types, like glm
set.seed(8675309)
d <- data.frame(out = sample(0:1, 100, replace = TRUE),
  cat1 = rep(letters[1:3], 100),
  cat2 = rep(LETTERS[1:3], each = 100),
  cont1 = rnorm(300, 100, 1),
  cont2 = rnorm(300, 50, 5))
mod5 <- glm(out ~ ., data = d, family = binomial(link = "logit"))
extract_eq(mod5, wrap = TRUE)

description

Data originally from penguins. Includes measurements for penguin species, island in Palmer Archipelago, size (flipper length, body mass, bill dimensions), and sex. This is a subset of penguins_raw.

Usage

penguins

Format

A tibble with 344 rows and 8 variables:

species a factor denoting penguin species (Adélie, Chinstrap and Gentoo)
island a factor denoting island in Palmer Archipelago, Antarctica (Biscoe, Dream or Torgersen)

bill_length_mm a number denoting bill length (millimeters)

bill_depth_mm a number denoting bill depth (millimeters)

flipper_length_mm an integer denoting flipper length (millimeters)

body_mass_g an integer denoting body mass (grams)

sex a factor denoting penguin sex (female, male)

year an integer denoting the study year (2007, 2008, or 2009)
**Source**


---

**print.equation**

*Print 'LaTeX' equations*

**Description**

Print 'LaTeX' equations built with `extract_eq`.

**Usage**

```r
## S3 method for class 'equation'
print(x, ...)
```

**Arguments**

- `x`: 'LaTeX' equation built with `extract_eq`
- `...`: not used
Index

* datasets
  penguins, 4

broom::tidy, 2

extract_eq, 2, 5

penguins, 4, 4
penguins_raw, 4
print.equation, 5