Package ‘broomExtra’

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Type Package

Title Enhancements for ‘broom’ and ‘easystats’ Package Families

Version 4.0.3

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Description Provides helper functions that assist in data analysis workflows involving regression analyses. The goal is to combine the functionality offered by different set of packages (‘broom’, ‘broom.mixed’, ‘parameters’, and ‘performance’) through a common syntax to return tidy dataframes containing model parameters and performance measure summaries. The ‘grouped_’ variants of the generics provides a convenient way to execute functions across a combination of grouping variable(s) in a dataframe.

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URL https://indrajeetpatil.github.io/broomExtra/,
https://github.com/IndrajeetPatil/broomExtra

BugReports https://github.com/IndrajeetPatil/broomExtra/issues

Depends R (>= 3.6.0)

Imports broom,
    broom.mixed,
    dplyr,
    ipmisc,
    parameters,
    performance,
    rlang

Suggests generics,
    ggplot2,
    lavaan,
    lme4,
    MASS,
    mixor,
    orcutt,
    rmarkdown,
    spelling,
    testthat

Encoding UTF-8

Language en-US


## augment

Retrieve augmented dataframe if it exists.

### Description

Check if a `augment` method exists for a given object, either in `broom` or in `broom.mixed`. If it does, return the model summary dataframe, if not, return a `NULL`.

### Usage

```r
augment(x, ...)
```

### Arguments

- **x**: Model object or other R object with information to append to observations.
- **...**: Addition arguments to `augment` method.

### Value

A `tibble::tibble()` with information about data points.

### Methods

No methods found in currently loaded packages.

### See Also

`grouped_augment`
easystats_to_tidy_names

Examples

```r
set.seed(123)
library(lme4)

# mixed-effects models (\texttt{\textquotesingle}broom.\textquotesingle{}\textquotesingle{} will be used)
lmm.mod <- lmer(Reaction ~ Days + (Days | Subject), sleepstudy)
broomExtra::augment(lmm.mod)

# linear model (\texttt{\textquotesingle}broom\textquotesingle{} will be used)
lm.mod <- lm(Reaction ~ Days, sleepstudy)
broomExtra::augment(lm.mod)
```

easystats_to_tidy_names

\textit{Convert easystats package outputs to tidymodels conventions.}

Description

Both \texttt{broom} package from tidymodels universe and \texttt{parameters} package from easystats universe can provide model summaries for a large number of model objects. This is a convenience function that converts naming conventions adopted in easystats to the ones adopted in the broom package.

Usage

```r
easystats_to_tidy_names(x)
```

Arguments

\code{x} A statistical model object

Examples

```r
# example model object
mod <- stats::lm(formula = wt ~ am * cyl, data = mtcars)

# \textquoteleft{}tidy\textquoteright{}-fied output
easystats_to_tidy_names(parameters::model_parameters(mod))
```

glance

\textit{Retrieve model summary dataframe if it exists.}

Description

Check if a \texttt{glance} method exits for a given object, either in broom or in broom.mixed. If it does, return the model summary dataframe, if not, return \texttt{NULL}. In this case, you can try the \texttt{broomExtra::glance_performance} function.

Usage

```r
glance(x, ...)
```
glance_performance

Arguments

x model or other R object to convert to single-row data frame

... other arguments passed to methods

Methods

No methods found in currently loaded packages.

See Also

grouped_glance, glance_performance

Examples

set.seed(123)
library(lme4)

# mixed-effects models (\texttt{broom.mixed} will be used)
lmm.mod <- lmer(Reaction ~ Days + (Days | Subject), sleepstudy)
broomExtra::glance(lmm.mod)

# linear model (\texttt{broom} will be used)
lm.mod <- lm(Reaction ~ Days, sleepstudy)
broomExtra::glance(lm.mod)

---

### Description

Computes indices of model performance for regression models.

### Usage

```r
glance_performance(x, ...)
```

### Arguments

x model or other R object to convert to single-row data frame

... other arguments passed to methods

### Details

The function will attempt to get these details either using \texttt{broom::glance} or \texttt{performance::model_performance}. If both function provide model performance measure summaries, the function will try to combine them into a single dataframe.

### Value

A data frame (with one row) and one column per "index".
Examples

```r
set.seed(123)
mod <- lm(mpg ~ wt + cyl, data = mtcars)
broomExtra::glance_performance(mod)
```
# linear mixed effects model
broomExtra::grouped_augment(
  data = dplyr::sample_frac(tbl = ggplot2::diamonds, size = 0.5),
  grouping.vars = "cut",
  ..f = lme4::lmer,
  formula = price ~ carat + (carat | color) - 1,
  control = lme4::lmerControl(optimizer = "bobyqa")
)

```r
# grouped_glance
Model summary output from grouped analysis of any function that has
data argument in its function call.
```

**Description**

Model summary output from grouped analysis of any function that has `data` argument in its function call.

**Usage**

```r
grouped_glance(data, grouping.vars, ..f, ...)
```

**Arguments**

- `data`: Dataframe (or tibble) from which variables are to be taken.
- `grouping.vars`: Grouping variables.
- `..f`: A function, or function name as a string.
- `...`: `<dynamic>` Arguments for `.fn`.

**Methods**

No methods found in currently loaded packages.

**See Also**

`glance`

**Examples**

```r
set.seed(123)
# to speed up computation, let's use only 50% of the data

# linear model
broomExtra::grouped_glance(
  data = dplyr::sample_frac(tbl = ggplot2::diamonds, size = 0.5),
  grouping.vars = c(cut, color),
  formula = price ~ carat - 1,
  ..f = stats::lm,
  na.action = na.omit
)

# linear mixed effects model
broomExtra::grouped_glance(
```
**grouped_tidy**

Tidy output from grouped analysis of any function that has data argument in its function call.

**Description**

tidy output from grouped analysis of any function that has data argument in its function call.

**Usage**

grouped_tidy(data, grouping.vars, ..f, ..., tidy.args = list())

**Arguments**

- **data** 
  Dataframe (or tibble) from which variables are to be taken.
- **grouping.vars** 
  Grouping variables.
- **..f** 
  A function, or function name as a string.
- **...** 
  <dynamic> Arguments for .fn.
- **tidy.args** 
  A list of arguments to be used in the relevant S3 method.

**Value**

A tibble::tibble() with information about model components.

**Methods**

No methods found in currently loaded packages.

**See Also**

tidy

**Examples**

```r
set.seed(123)
# to speed up computation, let's use only 50% of the data

# linear model
grouped_tidy(broomExtra::grouped_tidy(
  data = dplyr::sample_frac(tbl = ggplot2::diamonds, size = 0.5),
  grouping.vars = c(cut, color),
  formula = price ~ carat - 1,
  ..f = stats::lm,
  na.action = na.omit,
  tidy.args = list(quick = TRUE)
))
```
tidy}
)
# linear mixed effects model
broomExtra::grouped_tidy(
  data = dplyr::sample_frac(tbl = ggplot2::diamonds, size = 0.5),
  grouping.vars = "cut",
  ..f = lme4::lmer,
  formula = price ~ carat + (carat | color) - 1,
  control = lme4::lmerControl(optimizer = "bobyqa"),
  tidy.args = list(conf.int = TRUE, conf.level = 0.99)
)

---
tidy

Retrieve tidy dataframe if it exists.

Description
Checks if a tidy method exits for a given object, either in broom or in broom.mixed. If it does, it turn an object into a tidy tibble, if not, return a NULL. In this case, you can try the broomExtra::tidy_parameters function.

Usage
tidy(x, ...)

Arguments
- **x**
  An object to be converted into a tidy tibble::tibble().
- **...**
  Additional arguments to tidying method.

Value
A tibble::tibble() with information about model components.

Methods
No methods found in currently loaded packages.

See Also
grouped_tidy, tidy_parameters

Examples
set.seed(123)
library(lme4)

# mixed-effects models ('broom.mixed' will be used)
lmm.mod <- lmer(Reaction ~ Days + (Days | Subject), sleepstudy)
broomExtra::tidy(x = lmm.mod, effects = "fixed", exponentiate = TRUE)

# linear model ('broom' will be used)
lm.mod <- lm(Reaction ~ Days, sleepstudy)
tidy_parameters

broomExtra::tidy(x = lm.mod, conf.int = TRUE)

# unsupported object (the function will return `NULL` in such cases)
broomExtra::tidy(list(1, c("x", "y")))

---

tidy_parameters  
* Tidy dataframes of model parameters using broom and easystats.

Description

Computes parameters for regression models.

Usage

```r
tidy_parameters(x, conf.int = TRUE, ...)
```

Arguments

- `x`  
  An object to be converted into a tidy `tibble::tibble()`.

- `conf.int`  
  Indicating whether or not to include a confidence interval in the tidied output.

- `...`  
  Additional arguments that will be passed to `parameters::model_parameters` and `broom::tidy`.

Details

The function will attempt to get these details first using `parameters::model_parameters` and then using `broom::tidy`.

Value

A data frame of indices related to the model’s parameters.

Examples

```r
set.seed(123)
mod <- lm(mpg ~ wt + cyl, data = mtcars)
broomExtra::tidy_parameters(mod)
```
Index

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