Package ‘broomExtra’

April 11, 2020

Type Package

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

Version 3.0.0

Maintainer Indrajeet Patil <patilindrajeet.science@gmail.com>

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.

License GPL-3 | file LICENSE

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,
knitr,
lavaan,
lme4,
MASS,
mixor,
orcutt,
rmarkdown,
spelling,
testthat,
tidyR

1
VignetteBuilder knitr
Encoding UTF-8
Language en-US
LazyData true
Roxygen list(markdown = TRUE)
RoxygenNote 7.1.0.9000

R topics documented:

<table>
<thead>
<tr>
<th>Function</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>augment</td>
<td>2</td>
</tr>
<tr>
<td>easystats_to_tidy_names</td>
<td>3</td>
</tr>
<tr>
<td>glance</td>
<td>4</td>
</tr>
<tr>
<td>glance_performance</td>
<td>5</td>
</tr>
<tr>
<td>grouped_augment</td>
<td>5</td>
</tr>
<tr>
<td>grouped_glance</td>
<td>7</td>
</tr>
<tr>
<td>grouped_tidy</td>
<td>8</td>
</tr>
<tr>
<td>tidy</td>
<td>9</td>
</tr>
<tr>
<td>tidy_parameters</td>
<td>10</td>
</tr>
</tbody>
</table>

Index 11

---

**augment**

Retrieve augmented dataframe if it exists.

**Description**

Check if an `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.

**Note**

For available methods, see [https://indrajeetpatil.github.io/broomExtra/articles/available_methods.html](https://indrajeetpatil.github.io/broomExtra/articles/available_methods.html)
**easystats_to_tidy_names**

**Author(s)**

Indrajeet Patil

**See Also**

`grouped_augment`

**Examples**

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

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

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

---

**easystats_to_tidy_names**

*Convert easystats package outputs to tidymodels conventions.*

**Description**

Both broom package from tidymodels universe and 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**

- `x` A statistical model object

**Examples**

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

# 'tidy'-fied output
easystats_to_tidy_names(parameters::model_parameters(mod))
```
glance

Retrieve model summary dataframe if it exists.

Description
Check if a glance 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. In this case, you can try the broomExtra::glance_performance function.

Usage
`glance(x, ...)`

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.

Note
For available methods, see- https://indrajeetpatil.github.io/broomExtra/articles/available_methods.html

Author(s)
Indrajeet Patil

See Also
grouped_glance, glance_performance

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

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

# linear model (`broom` will be used)
lm.mod <- lm(Reaction ~ Days, sleepstudy)
broomExtra::glance(lm.mod)
```
**glance_performance**

Model performance summary dataframes using broom and easystats.

---

**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 `broom::glance` or `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)
```

---

**grouped_augment**

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

---

**Description**

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

**Usage**

```r
grouped_augment(data, grouping.vars, ..f, ..., augment.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.
- **...**: Arguments for `.fn`.
- **augment.args**: A list of arguments to be used in the relevant S3 method.

Value

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

Methods

No methods found in currently loaded packages.

Note

For available methods, see- [https://indrajeetpatil.github.io/broomExtra/articles/available_methods.html](https://indrajeetpatil.github.io/broomExtra/articles/available_methods.html)

Author(s)

Indrajeet Patil

See Also

- `augment`

Examples

```r
c0.set.seed(123)
# to speed up computation, let's use only 50% of the data

# linear model
broomExtra::grouped_augment(
  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,
  augment.args = list(se_fit = TRUE)
)

# linear mixed effects model
broomExtra::grouped_augment(
  data = dplyr::sample_frac(tbl = ggplot2::diamonds, size = 0.5),
  grouping.vars = "cut",
  .f = lme4::lm,
  formula = price ~ carat + (carat | color) - 1,
  control = lme4::LmerControl(optimizer = "bobyqa")
)
```
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

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.

Note

For available methods, see- https://indrajeetpatil.github.io/broomExtra/articles/available_methods.html

Author(s)

Indrajeet Patil

See Also

glance

Examples

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(
  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")
)

---

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.

Note

For available methods, see- https://indrajeetpatil.github.io/broomExtra/articles/available_methods.html

Author(s)

Indrajeet Patil

See Also

tidy
Examples

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

# linear model
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)
)

# 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 case of data frames, a tibble data frame is returned. In this case, you can try the broomExtra::tidy_parameters function.

**Usage**

```r
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.

**Note**

For available methods, see- https://indrajeetpatil.github.io/broomExtra/articles/available_methods.html
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 to tidying method.

Details

The function will attempt to get these details either using `broom::tidy` or `parameters::model_parameters`.

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

augment, 2, 6

dynamic, 6–8

easystats_to_tidy_names, 3

glance, 4, 7

glance_performance, 4, 5

grouped_augment, 3, 5

grouped_glance, 4, 7

grouped_tidy, 8, 10

tibble::tibble(), 2, 6, 8–10

tidy, 8, 9

tidy_parameters, 10, 10