Package: repmod (via r-universe)

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Type Package

Title Create Report Table from Different Objects

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Imports boot, flextable, lme4, lmerTest, methods, officer, xtable

Description Tools for generating descriptives and report tables for different models, data.frames and tables and exporting them to different formats.

License GPL (>=2)

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Contents

`AUC` *ROC area under curve*

Description

Estimates AUC from predicted and observed values

Usage

```
AUC(pred, obs)
```

Arguments

`pred`	Numeric vector of predicted values
`obs`	Numeric vector of observed values or factor with two levels

Value

Returns the AUC

Examples

```
glm1 <- glm(case ~ spontaneous + age, data=infert, family="binomial")
pred1 <- fitted(glm1)
AUC(pred1, infert$case)
```

`boot_model` *Bootstrap optimism correction for models*

Description

Returns optimism correction for absolute fit values

Usage

```
boot_model(
  formula,
  data,
  B = 200,
  fit_function = "lm",
 metric = if (length(unique(data[, as.character(formula)[2]])) == 2) "AUC" else "RMSE",
  predict.control = list(NULL),
  ...
)
```

Arguments

`formula`	An object of class "formula" describing the model to be validated
`data`	A data frame containing the variables specified in formula argument
`B`	Number of bootstrap samples
`fit_function`	Name of the model fitting function
`metric`	Performance metric to estimate: RMSE, MSE, MAE or AUC
`predict.control`	Named list of arguments to pass to the predict function of the model
`...`	Further arguments passed to the model fitting function

Value

Optimism correction values for the selected performance metric

Examples

```
boot_model(Petal.Length ~ Sepal.Width + Species, data=iris)
```

`coefplot` *Plot of the coefficients of a model*

Description

Creates a plot of the coefficients of a model.

Usage

```
coefplot(
  coefs,
  lwr.int = coefs,
  upper.int = coefs,
  offset = 0,
  coefnames = names(coefs),
  abline.pos = 0,
  sorted = FALSE,
  reverse = FALSE,
  pch = 16,
  xlim = c(min(lwr.int, na.rm = TRUE), max(upper.int, na.rm = TRUE)),
  ylim = c(1, length(coefs)),
  color = "black",
  ...
)
```

Arguments

`coefs`	A vector with each coefficient
`lwr.int`	A vector with the lower end of the CI
`upper.int`	A vector with the upper end of the CI
`offset`	Y-axis offset for the coefficients
`coefnames`	Name for each variable
`abline.pos`	Position for the vertical reference line
`sorted`	Should the coefficients be sorted from highest to lowest?
`reverse`	Should the order be reversed?
`pch`	Type of point
`xlim`	Limits of the X-axis
`ylim`	Limits of the Y-axis
`color`	Color for the points
`...`	Further arguments passed to axis()

Value

A plot of the coefficients with their CI

Examples

```
lm1 <- lm(Petal.Length ~ Sepal.Width + Species, data=iris)
a<-report(lm1)
oldpar <- par()
par(mar=c(4, 10, 3, 2))
#Coefplot calling plot.reportmodel
plot(a)
par(mar=oldpar$mar)  #Restore old margin values
#Manual coefplot
coefplot(coefs=c(1, 2, 3), lwr.int=c(0, 1, 2), upper.int=c(5, 6, 7), coefnames=c("A", "B", "C"))
```

---

cv_model *K-fold cross-validation for models*

Description

Returns cross-validated absolute fit values

Usage

```
cv_model(
  formula,
  data,
  k = 5,
  fit_function = "lm",
 metric = if (length(unique(data[, as.character(formula)[2]])) == 2) "AUC" else "RMSE",
  predict.control = list(NULL),
  ...
)
```

Arguments

formula	An object of class "formula" describing the model to be validated
data	A data frame containing the variables specified in formula argument
k	Number of folds
fit_function	Name of the model fitting function
metric	Performance metric to estimate: RMSE, MSE, MAE or AUC
predict.control	Named list of arguments to pass to the predict function of the model
...	Further arguments passed to the model fitting function

Value

Cross-validated values for the selected performance metric

Examples

```
cv_model(Petal.Length ~ Sepal.Width + Species, data=iris)
```

MAE *Mean absolute error*

Description

Estimates mean absolute error from predicted and observed values

Usage

```
MAE(pred, obs)
```

Arguments

pred	Numeric vector of predicted values
obs	Numeric vector of observed values

Value

Returns the MAE

Examples

```
lm1 <- lm(Petal.Length ~ Sepal.Width + Species, data=iris)
pred1 <- fitted(lm1)
MAE(pred1, iris$Petal.Length)
```

make_csv_table *Export a table to excel*

Description

Exports a table to Excel.

Usage

```
make_csv_table(x, file, info)
```

Arguments

x	A data.frame object
file	Name of the file
info	Footer for the table

Value

Creates a .csv file with the table

make_latex_table *Export a table to latex*

Description

Exports a table to latex.

Usage

```
make_latex_table(x, file)
```

Arguments

x	A data.frame object
file	Name of the file

Value

Creates a .txt file with latex code for the table

make_table *Make a table from report*

Description

Auxiliary function to create tables.

Usage

```
make_table(x, file, type, info = NULL, ...)
```

Arguments

x	A data.frame object
file	Name of the file
type	Type of file
info	Footer for the table
...	Additional parameters passed to make_word_table

Value

Creates a file with the table

make_word_table *Export a table to word*

Description

Exports a table to Word.

Usage

```
make_word_table(x, file, info = NULL, use.rownames = TRUE)
```

Arguments

x	A data.frame object
file	Name of the file
info	Footer for the table
use.rownames	Should row names be added to the output?

Value

Creates a word file with the table

matrixPaste *Auxiliary matrix paste function*

Description

Internal function for report.table

Usage

```
matrixPaste(..., sep = rep(" ", length(list(...)) - 1))
```

Arguments

...	Matrices to paste
sep	Separator for the paste function

Value

Returns a matrix with the different matrices used as input pasted together

MSE *Mean squared error*

Description

Estimates mean squared error from predicted and observed values

Usage

```
MSE(pred, obs)
```

Arguments

pred	Numeric vector of predicted values
obs	Numeric vector of observed values

Value

Returns the MSE

Examples

```
lm1 <- lm(Petal.Length ~ Sepal.Width + Species, data=iris)
pred1 <- fitted(lm1)
MSE(pred1, iris$Petal.Length)
```

plot.reportmodel *Coefplot for reportmodel objects*

Description

Creates a coefplot from the reportmodel object.

Usage

```
## S3 method for class 'reportmodel'
plot(x, ...)
```

Arguments

x	A reportmodel object
...	Further arguments passed to coefplot

Value

Returns a plot of each coefficient in the model with its 95

Examples

```
lm1 <- lm(Petal.Length ~ Sepal.Width + Species, data=iris)
a<-report(lm1)
oldpar <- par()
par(mar=c(4, 10, 3, 2))
plot(a)   #Coefplot calling plot.reportmodel
par(mar=oldpar$mar)
```

---

report *Generic function for creating reporting tables*

Description

Generic function for creating reporting tables.

Usage

```
report(x, ...)
```

Arguments

x	An compatibleobject that can be summarized
...	further arguments passed to make_table

Value

A data frame with the report table

Examples

```
report(iris)  #Report of descriptive statistics
lm1 <- lm(Petal.Length ~ Sepal.Width + Species, data=iris)
report(lm1)   #Report of model
```

---

report.betareg *Report from beta regression model*

Description

Creates a report table from a beta regression model.

Usage

```
## S3 method for class 'betareg'
report(
  x,
  file = NULL,
  type = "word",
  digits = 3,
  digitspvals = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

x	A betareg model object
file	Name of the file to export the table
type	Format of the file
digits	Number of decimals
digitspvals	Number of decimals for p-values
info	If TRUE, include call in the exported table
print	Should the report table be printed on screen?
exclude	Vector with rownames to remove from output
...	Further arguments passed to make_table

Value

A data frame with the report table

---

report.brmsfit *Report models from brms package*

Description

Creates a report table from model fitted by brms.

Usage

```
## S3 method for class 'brmsfit'
report(
  x,
  file = NULL,
  type = "word",
```

```
  digits = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

x	A brms model object
file	Name of the file to export the table
type	Format of the file
digits	Number of decimals
info	If TRUE, include call in the exported table
print	Should the report table be printed on screen?
exclude	Vector with rownames to remove from output
...	Further arguments passed to make_table

Value

A data frame with the report table

---

report.clm *Report from ordinal model*

Description

Creates a report table from an ordinal model.

Usage

```
## S3 method for class 'clm'
report(
  x,
  file = NULL,
  type = "word",
  digits = 3,
  digitspvals = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

x	An ordinal model object
file	Name of the file to export the table
type	Format of the file
digits	Number of decimals
digitspvals	Number of decimals for p-values
info	If TRUE, include call in the exported table
print	Should the report table be printed on screen?
exclude	Vector with rownames to remove from output
...	Further arguments passed to make_table

Value

A data frame with the report table

---

report.clmm *Report from ordinal mixed model*

Description

Creates a report table from an ordinal mixed model.

Usage

```
## S3 method for class 'clmm'
report(
  x,
  file = NULL,
  type = "word",
  digits = 3,
  digitspvals = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

x	An ordinal model object
file	Name of the file to export the table
type	Format of the file
digits	Number of decimals

digitspvals	Number of decimals for p-values
info	If TRUE, include call in the exported table
print	Should the report table be printed on screen?
exclude	Vector with rownames to remove from output
...	Further arguments passed to make_table

Value

A data frame with the report table

`report.coxph` *Report from cox regression model*

Description

Creates a report table from a cox model.

Usage

```
## S3 method for class 'coxph'
report(
  x,
  file = NULL,
  type = "word",
  digits = 3,
  digitspvals = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

x	A cox model object
file	Name of the file to export the table
type	Format of the file
digits	Number of decimals
digitspvals	Number of decimals for p-values
info	If TRUE, include call in the exported table
print	Should the report table be printed on screen?
exclude	Vector with rownames to remove from output
...	Further arguments passed to make_table

Value

A data frame with the report table

`report.data.frame` *Report tables of summary data*

Description

Creates a report table ready for publication.

Usage

```
## S3 method for class 'data.frame'
report(
  x,
  by = NULL,
  file = NULL,
  type = "word",
  digits = 2,
  digitscat = digits,
  print = TRUE,
  ...
)
```

Arguments

`x`	A data.frame object
`by`	Grouping variable for the report
`file`	Name of the file to export the table
`type`	Format of the file
`digits`	Number of decimal places
`digitscat`	Number of decimal places for categorical variables (if different to digits)
`print`	Should the report table be printed on screen?
`...`	further arguments passed to make_table()

Value

Returns a summary table of the data in publication-friendly format

Examples

```
report(iris)
(reporTable<-report(iris, by="Species"))
class(reporTable)
```

report.default *Default function for report*

Description

This is a default function for calling summary(x) on non-implemented classes.

Usage

```
## Default S3 method:
report(x, ...)
```

Arguments

x	Any object without specific report function
...	further arguments passed to summary

Value

A summary of the object

report.factor *Report from categorical variable*

Description

Creates a report table.

Usage

```
## S3 method for class 'factor'
report(x, ...)
```

Arguments

x	A categorical variable
...	Further arguments passed to make_table

Value

A data frame with the report table

`report.glm` *Report from generalized linear model*

Description

Creates a report table from a generalized linear model.

Usage

```
## S3 method for class 'glm'
report(
  x,
  file = NULL,
  type = "word",
  digits = 3,
  digitspvals = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

`x`	A generalized linear model object
`file`	Name of the file to export the table
`type`	Format of the file
`digits`	Number of decimals
`digitspvals`	Number of decimals for p-values
`info`	If TRUE, include call in the exported table
`print`	Should the report table be printed on screen?
`exclude`	Vector with rownames to remove from output
`...`	Further arguments passed to make_table

Value

A data frame with the report table

`report.glmerMod` *Report from generalized linear mixed model*

Description

Creates a report table from a generalized linear mixed model.

Usage

```
## S3 method for class 'glmerMod'
report(
  x,
  file = NULL,
  type = "word",
  digits = 3,
  digitspvals = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

`x`	A generalized linear mixed model object
`file`	Name of the file to export the table
`type`	Format of the file
`digits`	Number of decimals
`digitspvals`	Number of decimals for p-values
`info`	If TRUE, include call in the exported table
`print`	Should the report table be printed on screen?
`exclude`	Vector with rownames to remove from output
`...`	Further arguments passed to make_table

Value

A data frame with the report table

`report.glmmadmb` *Report from generalized linear mixed model from ADMB*

Description

Creates a report table from a glmmadmb model.

Usage

```
## S3 method for class 'glmmadmb'
report(
  x,
  file = NULL,
  type = "word",
  digits = 3,
  digitspvals = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

`x`	A generalized linear mixed model object (glmmabmb)
`file`	Name of the file to export the table
`type`	Format of the file
`digits`	Number of decimals
`digitspvals`	Number of decimals for p-values
`info`	If TRUE, include call in the exported table
`print`	Should the report table be printed on screen?
`exclude`	Vector with rownames to remove from output
`...`	Further arguments passed to make_table

Value

A data frame with the report table

`report.glmnet` *Report models from glmnet package*

Description

Creates a report table from models fitted by glmnet.

Usage

```
## S3 method for class 'glmnet'
report(
  x,
  s,
  gamma = 1,
  drop.zero = TRUE,
  file = NULL,
  type = "word",
  digits = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

`x`	A glmnet model object
`s`	Value of lambda for estimating the coefficients
`gamma`	Value of gamma for estimating the coefficients (only used in relaxed fits)
`drop.zero`	Should zero coefficients be dropped?
`file`	Name of the file to export the table
`type`	Format of the file
`digits`	Number of decimals
`info`	If TRUE, include call in the exported table
`print`	Should the report table be printed on screen?
`exclude`	Vector with rownames to remove from output
`...`	Further arguments passed to make_table

Value

A data frame with the report table

`report.gls` *Report from generalized least squares model*

Description

Creates a report table from a generalized least squares model.

Usage

```
## S3 method for class 'gls'
report(
  x,
  file = NULL,
  type = "word",
  digits = 3,
  digitspvals = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

`x`	A gls object
`file`	Name of the file to export the table
`type`	Format of the file
`digits`	Number of decimals
`digitspvals`	Number of decimals for p-values
`info`	If TRUE, include call in the exported table
`print`	Should the report table be printed on screen?
`exclude`	Vector with rownames to remove from output
`...`	Further arguments passed to make_table

Value

A data frame with the report table

`report.lm` *Report from linear model*

Description

Creates a report table from a linear model.

Usage

```
## S3 method for class 'lm'
report(
  x,
  file = NULL,
  type = "word",
  digits = 3,
  digitspvals = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

`x`	A linear model object
`file`	Name of the file to export the table
`type`	Format of the file
`digits`	Number of decimals
`digitspvals`	Number of decimals for p-values
`info`	If TRUE, include call in the exported table
`print`	Should the report table be printed on screen?
`exclude`	Vector with rownames to remove from output
`...`	Further arguments passed to make_table

Value

A data frame with the report table

`report.lmerMod` *Report from linear mixed model*

Description

Creates a report table from a linear mixed model.

Usage

```
## S3 method for class 'lmerMod'
report(
  x,
  file = NULL,
  type = "word",
  digits = 3,
  digitspvals = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

`x`	A linear mixed model object
`file`	Name of the file to export the table
`type`	Format of the file
`digits`	Number of decimals
`digitspvals`	Number of decimals for p-values
`info`	If TRUE, include call in the exported table
`print`	Should the report table be printed on screen?
`exclude`	Vector with rownames to remove from output
`...`	Further arguments passed to make_table

Value

A data frame with the report table

`report.lqmm` *Report from quantile mixed model*

Description

Creates a report table from a quantile mixed model.

Usage

```
## S3 method for class 'lqmm'
report(
  x,
  file = NULL,
  type = "word",
  digits = 3,
  digitspvals = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

`x`	A quantile model object
`file`	Name of the file to export the table
`type`	Format of the file
`digits`	Number of decimals
`digitspvals`	Number of decimals for p-values
`info`	If TRUE, include call in the exported table
`print`	Should the report table be printed on screen?
`exclude`	Vector with rownames to remove from output
`...`	Further arguments passed to make_table

Value

A data frame with the report table

`report.merModLmerTest` *Report from linear mixed model with pvalues*

Description

Creates a report table from a linear mixed model.

Usage

```
## S3 method for class 'merModLmerTest'
report(
  x,
  file = NULL,
  type = "word",
  digits = 3,
  digitspvals = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

`x`	A linear mixed model object
`file`	Name of the file to export the table
`type`	Format of the file
`digits`	Number of decimals
`digitspvals`	Number of decimals for p-values
`info`	If TRUE, include call in the exported table
`print`	Should the report table be printed on screen?
`exclude`	Vector with rownames to remove from output
`...`	Further arguments passed to make_table

Value

A data frame with the report table

report.numeric *Report from numeric variable*

Description

Creates a report table.

Usage

```
## S3 method for class 'numeric'
report(x, ...)
```

Arguments

x	A numeric variable
...	Further arguments passed to make_table

Value

A data frame with the report table

report.rlm *Report from robust linear model (rlm)*

Description

Creates a report table from a robust linear model.

Usage

```
## S3 method for class 'rlm'
report(
  x,
  file = NULL,
  type = "word",
  digits = 3,
  digitspvals = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

x	A rlm object
file	Name of the file to export the table
type	Format of the file
digits	Number of decimals
digitspvals	Number of decimals for p-values
info	If TRUE, include call in the exported table
print	Should the report table be printed on screen?
exclude	Vector with rownames to remove from output
...	Further arguments passed to make_table

Value

A data frame with the report table

---

report.rq *Report from quantile regression model*

Description

Creates a report table from a quantile regression model.

Usage

```
## S3 method for class 'rq'
report(
  x,
  file = NULL,
  type = "word",
  digits = 3,
  digitspvals = 3,
  info = TRUE,
  print = TRUE,
  exclude = NULL,
  ...
)
```

Arguments

x	A quantreg model object
file	Name of the file to export the table
type	Format of the file
digits	Number of decimals

digitspvals	Number of decimals for p-values
info	If TRUE, include call in the exported table
print	Should the report table be printed on screen?
exclude	Vector with rownames to remove from output
...	Further arguments passed to make_table

Value

A data frame with the report table

RMSE *Root mean squared error*

Description

Estimates root mean squared error from predicted and observed values

Usage

```
RMSE(pred, obs)
```

Arguments

pred	Numeric vector of predicted values
obs	Numeric vector of observed values

Value

Returns the RMSE

Examples

```
lm1 <- lm(Petal.Length ~ Sepal.Width + Species, data=iris)
pred1 <- fitted(lm1)
RMSE(pred1, iris$Petal.Length)
```

rob.ci — *Function to compute bootstrap confidence intervals for robust linear regression models*

Description

Estimates confidence intervals for rlm models.

Usage

```
rob.ci(x, level = 0.95, maxit = 200, R = 2000)
```

Arguments

x	A rlm object
level	Confidence level for the interval
maxit	Maximum number of iterations per fit
R	Number of boostrap samples

Value

A matrix with bootstrap confidence intervals for each variable in the model

rob.pvals — *Function to compute p-values for robust linear regression models*

Description

Estimates p-values for rlm models.

Usage

```
rob.pvals(x)
```

Arguments

x	A rlm object

Value

A vector of p-values

set_noms *Set header names for word tables*

Description

Internal function for make_word_table.

Usage

```
set_noms(x, args)
```

Arguments

x	A flextable object
args	A names list with the header names

Value

A flextable object with assigned header names

VarCorr *Generic VarCorr function*

Description

Extract Variance-Covariance Matrix.

Usage

```
VarCorr(x, sigma = 1, ...)
```

Arguments

x	A model object
sigma	Optional value used as a multiplier for the standard deviations
...	Further arguments passed to VarrCorr methods

Value

A Variance-Covariance Matrix

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