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Companion to Essential of Political Analysis

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LazyData TRUE

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AdjR2	<i>Calculates adjusted R-Squared statistic</i>
-------	--

Description

Calculates adjusted R-Squared Statistic based on user-defined input. Also see svyglm.fit function.

Usage

AdjR2(tdf, null.dev, resid.dev, k)

Arguments

tdf	The total degrees of freedom
null.dev	The null deviance or total sum of squares
resid.dev	The residual deviance or error sum of squares
k	The number of parameters used (to reduce deviance)

Value

Returns Adjusted R-Squared Statistic

Examples

```
AdjR2(200, 1500, 1100, 5)
AdjR2(tdf=200, null.dev=1500, resid.dev=1100, k=5)
```

available.imported.functions

Imported Functions Made Available to Users

Description

The [compmeans](#) function is imported from descr package. See [compmeans](#) documentation for details.

The [crosstab](#) function is imported from the descr package. See [crosstab](#) documentation for details.

The [csv.get](#) function is imported from the Hmisc package. See [csv.get](#) documentation for details.

The [cut2](#) function is imported from the Hmisc package. See [cut2](#) documentation for details.

The [ddply](#) function is imported from the plyr package. See [ddply](#) documentation for details.

The [describe](#) function is imported from the Hmisc package. See [describe](#) documentation for details.

The [freq](#) function is imported from the descr package. See [freq](#) documentation for details.

The [plotmeans](#) function is imported from the gplots package. See [plotmeans](#) documentation for details.

The [scatterplot](#) function is imported from the car package. See [scatterplot](#) documentation for details.

The [spss.get](#) function is imported from the Hmisc package. See [spss.get](#) documentation for details.

The [stata.get](#) function is imported from the Hmisc package. See [stata.get](#) documentation for details.

The [svyboxplot](#) function is imported from the survey package. See [svyboxplot](#) documentation for details.

The [svyby](#) function is imported from the survey package. See [svyby](#) documentation for details.

The [svychisq](#) function is imported from the survey package. See [svychisq](#) documentation for details.

The [svydesign](#) function is imported from the survey package. See [svydesign](#) documentation for details.

The [svyglm](#) function is imported from the survey package. See [svyglm](#) documentation for details.

The [svymean](#) function is imported from the survey package. See [svymean](#) documentation for details.

The [svyplot](#) function is imported from the survey package. See [svyplot](#) documentation for details.

The [svytable](#) function is imported from the survey package. See [svytable](#) documentation for details.

The [wtd.boxplot](#) function is imported from the ENmisc package. See [wtd.boxplot](#) documentation for details.

The [wtd.chi.sq](#) function is imported from the weights package. See [wtd.chi.sq](#) documentation for details.

The [wtd.cor](#) function is imported from the weights package. See [wtd.cor](#) documentation for details.

The [wtd.hist](#) function is imported from the weights package. See [wtd.hist](#) documentation for details.

The [wtd.mean](#) function is imported from the Hmisc package. See [wtd.mean](#) documentation for details.

The [wtd.quantile](#) function is imported from the Hmisc package. See [wtd.quantile](#) documentation for details.

The [wtd.t.test](#) function is imported from the weights package. See [wtd.t.test](#) documentation for details.

The [wtd.var](#) function is imported from the Hmisc package. See [wtd.var](#) documentation for details.

Usage

`compmeans(...)`

`crosstab(...)`

`csv.get(...)`

`cut2(...)`

`ddply(...)`

`describe(...)`

`freq(...)`

`plotmeans(...)`

`scatterplot(...)`

```
spss.get(...)  
stata.get(...)  
svyboxplot(...)  
svyby(...)  
svychisq(...)  
svydesign(...)  
svyglm(...)  
svymean(...)  
svyplot(...)  
svytable(...)  
wtd.boxplot(...)  
wtd.chi.sq(...)  
wtd.cor(...)  
wtd.hist(...)  
wtd.mean(...)  
wtd.quantile(...)  
wtd.t.test(...)  
wtd.var(...)
```

Arguments

... See source package help file for details on function usage.

CI95

Calculates a 95 Percent Confidence Interval

Description

Prints the lower and upper boundaries of a 95 Percent confidence interval. Also see the CI95 function.

Usage

```
CI95(m, se)
```

Arguments

m A single number equal to the mean value of a statistic.
se single number equal to the standard error of the statistic.

Value

No return.

Examples

```
CI99(10, 1)  
CI99(m=8, se=2)
```

CI99

Calculates a 99 Percent Confidence Interval

Description

Prints the lower and upper boundaries of a 99 Percent confidence interval. Also see the CI95 function.

Usage

```
CI99(m, se)
```

Arguments

m A single number equal to the mean value of a statistic.
se single number equal to the standard error of the statistic.

Value

No return.

Examples

```
CI99(10, 1)  
CI99(m=8, se=2)
```

Colors	<i>Displays R Colors</i>
--------	--------------------------

Description

Produces plot of colors available in R. Numeric labels same for whole row.

Usage

```
Colors()
```

Value

No value returned

Examples

```
Colors()
```

colPercents	<i>Column Percentages</i>
-------------	---------------------------

Description

Column percentages, based on function by John Fox

Usage

```
colPercents(tab, digits = 1)
```

Arguments

tab	A table of values
digits	Number of decimal places to display

Value

Table of column-percentaged values

compADPQ	<i>Calculates model fit statistic</i>
----------	---------------------------------------

Description

This function is called by the tablesomersDC function

Usage

```
compADPQ(x)
```

Arguments

x	A matrix or data frame
---	------------------------

Value

Returns a list

CramersV	<i>Calculates Cramer's V</i>
----------	------------------------------

Description

Calculates Cramer's V, a measure of association to gauge the strength of the relationship between two nominal-level variables. A score of 0 indicates no relationship; a score of 1 indicates a perfect relationship.

Usage

```
CramersV(chi, r, c, n)
```

Arguments

chi	A number equal to the Chi-Squared statistic
r	A number equal to the number of rows
c	A number equal to the number of columns
n	A number equal to the sample size

Value

The Cramer's V statistic, a number

Examples

```
CramersV(84.18, 2, 2, 1315)  
CramersV(chi=84.18, r=2, c=2, n=1315)
```

fit.svyglm	<i>Calculates model fit statistic for a svyglm weighted regression model</i>
------------	--

Description

model fit statistic for a svyglm weighted regression model

Usage

```
fit.svyglm(svyglm)
```

Arguments

svyglm An object of type svyglm. This object is the output of the svyglm functon.

Value

Returns classic model fit statistics, including R squared and Adjusted R Squared Statistic

freqC	<i>Generates table and figure describing distribution of variable values.</i>
-------	---

Description

Generates table and figure describing distribution of variable values. Based on freq() function in descr package.

Usage

```
freqC(x, w)
```

Arguments

x a vector of variable values

w weights (optional)

Value

No value returned

`gss`*GSS dataset for R Companion to Essentials of Political Analysis*

Description

The General Social Survey polls individuals about their attitudes and beliefs. This dataset is used to demonstrate application of R to political analysis. See book Appendix for variable names and descriptions.

Usage`gss`**Format**

A data frame with 1974 rows and 221 variables.

Source

Sources vary. See book Appendix for further information.

`gssD`*GSS design dataset for R Companion to Essentials of Political Analysis*

Description

The General Social Survey polls individuals about their attitudes and beliefs. This design dataset is used to demonstrate application of certain R functions to political analysis. See book Appendix for variable names and descriptions.

Usage`gssD`**Format**

A survey.design object. The variables element has 1974 observations of 221 variables.

Source

Sources vary. See book Appendix for further information.

imeansC	<i>Controlled Mean Comparison Table</i>
---------	---

Description

Produces a controlled mean comparison table

Usage

```
imeansC(function1 = NULL, function2 = NULL, data)
```

Arguments

function1	A function
function2	A function
data	Dataset

Value

No value returned

inverse.logit	<i>Calculates predicted probability for a given logged odds value</i>
---------------	---

Description

This function calculates predicted probability for a given logged odds value

Usage

```
inverse.logit(logged_odds)
```

Arguments

logged_odds	a numeric value, or vector of numeric values
-------------	--

Value

Returns predicted probability corresponding the the logged odds value

iplotC	<i>Interaction plot</i>
--------	-------------------------

Description

Interaction plot based on brkdn.plot function in plotrix package

Usage

```
iplotC(function1 = NULL, function2 = NULL, data, function3 = NULL, ...)
```

Arguments

function1	A function in the form ~depvar
function2	A function. Here indepvar is typed before controlvar: ~indepvar + controlvar
data	Design dataset (e.g. nesD, gssD, statesD, or worldD)
function3	A function. Here indepvar is typed after controlvar: ~controlvar + indepvar
...	Further arguments to be passed to brkdn plot

Value

No value returned

lineType	<i>Displays line types for R plots</i>
----------	--

Description

Displays line types for r plots

Usage

```
lineType()
```

Value

No value returned

logregR2	<i>Logistic regression model statistics</i>
----------	---

Description

Logistic regression model statistics

Usage

```
logregR2(model, digits = 3)
```

Arguments

model	An estimated logistic regression model
digits	Number of digits to be displayed after decimal points

Value

Returns list of statistics about model

nes	<i>NES dataset for R Companion to Essentials of Political Analysis</i>
-----	--

Description

The American National Election Survey polls individuals about their political beliefs and behavior. This dataset is used to demonstrate application of R to political analysis. See book Appendix for variable names and descriptions.

Usage

```
nes
```

Format

A data frame with 5916 rows and 399 variables.

Source

Sources vary. See book Appendix for further information.

nesD	<i>NES design dataset for R Companion to Essentials of Political Analysis</i>
------	---

Description

The American National Election Survey polls individuals about their political beliefs and behavior. This design dataset is used to demonstrate application of certain R functions to political analysis. See book Appendix for variable names and descriptions.

Usage

```
nesD
```

Format

A survey.design object. The variables element has 5916 observations of 399 variables.

Source

Sources vary. See book Appendix for further information.

orci	<i>Translate logistic regression coefficients into odds ratios</i>
------	--

Description

Generates odds-ratios based on logistic regression model coefficients

Usage

```
orci(model, digits = 3)
```

Arguments

model	An estimated logistic regression model
digits	Number of digits after decimal to display

Value

Returns odds ratios and confidence intervals in columns

pchisqC

Comparing Logistic Regression Models with Chi-Squared Test

Description

Comparing Logistic Regression Models with Chi-Squared Test

Usage

```
pchisqC(reduced, full, digits = 3)
```

Arguments

reduced	The reduced logistic regression model as an object. This is model with fewer independent variables.
full	The full logistic regression model as an object. This is model with more independent variables.
digits	The number of digits to display after decimal point, default is 3.

Value

The p-value of null hypothesis that full model no better than reduced model.

plotChar

Displays plotting characters available in R

Description

Displays plotting characters available in R

Usage

```
plotChar()
```

Value

No return

plotmeansC	<i>Plots mean comparison</i>
------------	------------------------------

Description

Plots mean comparison

Usage

```
plotmeansC(data, formula2 = NULL, formula3 = NULL, formula4, w = NULL,  
  ...)
```

Arguments

data	A dataset
formula2	A formula
formula3	A formula
formula4	A formula
w	Weights, optional
...	Additional arguments passed to plotmeans function

Value

No return

printC	<i>Prints html-ready table to local working directory</i>
--------	---

Description

Prints html-ready table to local working directory

Usage

```
printC(objx)
```

Arguments

objx	A table or data frame
------	-----------------------

Value

No return

`prop.testC` *Difference of Proportions Test*

Description

Difference of proportions test with optional weights

Usage

```
prop.testC(y, x, w = NULL)
```

Arguments

<code>y</code>	Dependent variable
<code>x</code>	Independent variable
<code>w</code>	Weights, optional

Value

No return

`quickConsolePrint` *Prints string to console quickly*

Description

Prints string to console quickly, but still scrolls for visual effect

Usage

```
quickConsolePrint(linetoprint)
```

Arguments

<code>linetoprint</code>	Text to be printed to console
--------------------------	-------------------------------

Value

No value returned

SetTextContrastColor *Sets contrasting color for text*

Description

Sets contrasting color for text

Usage

```
SetTextContrastColor(color)
```

Arguments

color A color

Value

Returns either "black" or "white"

slowConsolePrint *Prints string to console slowly*

Description

Prints string to console slowly to make text more readable to the user

Usage

```
slowConsolePrint(linetoprint)
```

Arguments

linetoprint Text to be printed to console

Value

No value returned

somersD	<i>Calculates Somer's D</i>
---------	-----------------------------

Description

This function makes use of the svtable function from the survey package

Usage

```
somersD(formula, data)
```

Arguments

formula	A formula
data	Dataset to be sorted

Value

No return

sortC	<i>Returns case-level information in order</i>
-------	--

Description

Returns case-level information in order

Usage

```
sortC(data, id, by, descending = TRUE)
```

Arguments

data	Dataset to be sorted
id	A variable in the dataset (data) that identifies individual cases, typically the name of states, countries, etc.
by	Variable the dataset should be sorted by
descending	Should the cases be sorted in descending order? By default, set to TRUE

Value

A data frame

states	<i>States dataset for R Companion to Essentials of Political Analysis</i>
--------	---

Description

A dataset with variables about the 50 states. This dataset is used to demonstrate application of R to political analysis. See book Appendix for variable names and descriptions.

Usage

states

Format

A data frame with 50 rows and 135 variables.

Source

Sources vary. See book Appendix for further information.

statesD	<i>States design dataset for R Companion to Essentials of Political Analysis</i>
---------	--

Description

This is a design dataset with variables about the 50 states. This design dataset is used to demonstrate application of certain R functions to political analysis. See book Appendix for variable names and descriptions.

Usage

statesD

Format

A survey.design object. The variables element has 50 observations of 135 variables.

Source

Sources vary. See book Appendix for further information.

svybyC	<i>Computes summary statistics</i>
--------	------------------------------------

Description

Computes summary statistics

Usage

```
svybyC(formula1 = NULL, formula2 = NULL, data, ...)
```

Arguments

formula1	A formula
formula2	A formula
data	Dataset
...	Further arguments to be passed

Value

A svyby-type object

svychisqC	<i>Chi-Squared Test with Weighted Data</i>
-----------	--

Description

This function conducts a weighted chi-squared test

Usage

```
svychisqC(formula, design)
```

Arguments

formula	Formula expressing the relationship between variables
design	Weighted design dataset

Value

No return

tablesomersDC *Produces summary statistics*

Description

This function is called by somersD function

Usage

```
tablesomersDC(x, dep = 2)
```

Arguments

x	A svytable
dep	which dimension stands for the dependent variable (1 = ROWS, 2 = COLS), default is 2.

Value

No return

welcome *Function to Introduce Users to R Companion Environment*

Description

Welcomes users to Companion Package to Political Analysis and provides basic information about using Companion functions and datasets

Usage

```
welcome()
```

Value

No value returned

`world`*World dataset for R Companion to Essentials of Political Analysis*

Description

A dataset with variables about countries in the world. This dataset is used to demonstrate application of R to political analysis. See book Appendix for variable names and descriptions.

Usage`world`**Format**

A data frame with 167 rows and 103 variables.

Source

Sources vary. See book Appendix for further information.

`worldD`*World design dataset for R Companion to Essentials of Political Analysis*

Description

This is a design dataset with variables about countries in the world. This dataset is used to demonstrate application of R to political analysis. See book Appendix for variable names and descriptions.

Usage`worldD`**Format**

A survey.design object. The variables element has 167 observations of 103 variables.

Source

Sources vary. See book Appendix for further information.

wtd.median	<i>Find Median of Variable</i>
------------	--------------------------------

Description

Takes in variable and finds median, works with sampling weights

Usage

```
wtd.median(x, weights = NULL)
```

Arguments

x	A variable
weights	Sampling weights of variable (optional)

Details

Makes use of the wtd.quantile function, part of the Hmisc package

Value

Returns the median value of the variable

wtd.mode	<i>Find Mode of Variable</i>
----------	------------------------------

Description

Takes in variable and finds mode, works with sampling weights

Usage

```
wtd.mode(x, weights = NULL)
```

Arguments

x	A variable
weights	Sampling weights of variable (optional)

Details

Makes use of the freq function, part of the descr package

Value

Returns the modal value of the variable

wtd.sd	<i>Find Standard Deviation of Variable</i>
--------	--

Description

Takes in variable and calculates standard deviation, works with sampling weights

Usage

```
wtd.sd(x, weights = NULL)
```

Arguments

x	A variable (must be numeric)
weights	Sampling weights of variable (optional)

Details

Makes use of the freq function, part of the descr package

Value

Returns the standard deviation of the variable

wtd.ttestC	<i>Weighted T-Test</i>
------------	------------------------

Description

This function conducts a weighted t-test

Usage

```
wtd.ttestC(f1, f2, data)
```

Arguments

f1	A variable
f2	Another variable
data	Dataset

Value

No return

xtabC	<i>Cross tabulation with optional weights</i>
-------	---

Description

Cross tabulation with optional weights

Usage

```
xtabC(function1, data)
```

Arguments

function1	A function
data	Dataset

Value

No return

xtp	<i>Cross tabulation</i>
-----	-------------------------

Description

Makes use of the crosstab function in the descr package.

Usage

```
xtp(data, y, x, w = NULL, ylab = NULL, xlab = NULL, main = NULL,
     dnn = NULL)
```

Arguments

data	Dataset to be sorted
y	Dependent variable
x	Independent variable
w	Weights (optional)
ylab	Y-axis label (optional)
xlab	X-axis label (optional)
main	Main label for plot (optional)
dnn	Optional, the names to be given to the dimensions in the result (the dimnames names)

Value

A data frame

`xtp.chi2`*Cross tabulation with chi-squared statistic*

Description

This function makes use of the `crosstab` function from the `descr` package

Usage

```
xtp.chi2(data, y, x, w = NULL)
```

Arguments

<code>data</code>	Dataset to be sorted
<code>y</code>	Dependent variable
<code>x</code>	Independent variable
<code>w</code>	Weights (optional)

Value

Returns a data frame

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