## Package ‘RCPA3’

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boxplotC

Generates box plots to compare interval-level dependent variable’s distribution across categories of independent variable.

Description

Generates box plots for visual comparison of interval-level dependent variable’s distribution across categories of independent variable. Includes option for weighting observations, modifying colors, variable widths. Box plot can be used to compare values of interval-level dependent variable by categories of an independent variable (a factor).

Usage

boxplotC(dv, iv, w, data, main, xlab, ylab, box.col, varwidth = TRUE, ivlabs, printC = FALSE, ...)

Arguments

dv Dependent variable, should be in dataset$var form unless dataset specified in optional data argument.

iv Independent variable, should be in dataset$var form unless dataset specified in optional data argument.

w (Optional) Sampling weights of variable, must be numeric; should be in dataset$weightvar form unless dataset specified in optional data argument.

data (Optional) Name of dataset that contains dv, iv (and w) variables (optional).

main (Optional) Supply custom main label for plot; default uses names of dv and iv.
### boxplotC

- **xlab** *(Optional) Supply custom x-axis label for plot; default uses name of iv.*
- **ylab** *(Optional) Supply y-axis label for plot; default uses name of dv.*
- **box.col** *(Optional) The name of color to use for box colors. Default is "gray80".*
- **varwidth** *(Optional) Do you want the widths of boxes to be proportional to number of observations in each group? Default is TRUE; set varwidth=FALSE for equal-width boxes.*
- **ivlabs** *(Optional) A vector of labels for the iv values that are box labels.*
- **printC** *(Optional) Do you want to print box plot to .html file in working directory? (Default: FALSE)*
- ... Additional arguments passed to plotting functions, `boxplot` or `bxp`.

### Value

No return, creates a plot.

### Textbook References


### Online Resources

- **R Tutorials & Resources for Graphing Relationships and Describing Patterns**, compiled by Barry C. Edwards
- **Sage Edge Resources for Political Analysis Series**, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.
- **Political Science Data Web Site**, find datasets for your own research and resources to help with political analysis.

### Examples

```r
library(RCPA3)

# basic usage with variables as vectors
boxplotC(dv=nes$ft.rep, iv=nes$partyid3)

# with w and data arguments
boxplotC(dv=ft.rep, iv=partyid3, w=wt, data=nes)
```
Description

Reports the confidence interval of a sample mean in table and plot. Default is 95% CI but use can raise or lower confidence level.

Usage

CImean(x, w, data, digits = 3, level = 95, pop.sd, printC = FALSE, plot = TRUE, main, xlab, xlim, ...)

Arguments

x A numeric variable, should be in dataset$var form unless dataset specified in optional data argument.

w (Optional) Sampling weights of variable (optional), must be numeric; should be in dataset$weightvar form unless dataset specified in optional data argument.

data (Optional) Name of dataset that contains x (and w) variable (optional).

digits (Optional) Number of decimal places reported in result (defaults to 3).

level (Optional) A single number equal to the desired confidence level (i.e. 95, 99, 90, etc.). Default value is 95 percent confidence level.

pop.sd (Optional) A single number equal to the known population standard deviation of x. This value is rarely know, but if it is, critical values for confidence interval are based on standard normal distribution.

printC (Optional) Do you want results printed to .html file in your working directory? Default is FALSE. Set to TRUE to print results.

plot (Optional) Do you want a plot of the confidence interval? Default is TRUE.

main (Optional) Change the main title of plot. Default title generated from level, x, and w.

xlab (Optional) Label for x-axis of confidence interval plot.

xlim (Optional) Modify x-axis limits of confidence interval plot.

... (Optional) additional arguments passed to plot function.

Value

Returns the confidence interval as a vector of numeric values (the lower and upper bounds).
Textbook References


Online Resources

• R Tutorials & Resources for Foundations of Inference, Compiled by Barry C. Edwards

• Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.

• Political Science Data Web Site: Find datasets for your own research and resources to help with the analysis.

Examples

```r
library(RCPA3)
CImean(nes$age)

# using optional w, level, and data arguments
CImean(x=nes$age, w=nes$wt, level=90)
CImean(x=age, data=nes, level=95)
```

---

### CIprop

*Confidence intervals of a dataset variable's sample proportions in table and figure*

Description

Reports the confidence interval of sample proportions in table and plot. Default is 95% CI but use can raise or lower confidence level.

Usage

```r
CIprop(x, w, data, digits = 3, level = 95, printC = FALSE, plot = TRUE, main, xlab, xlim, ...)```
Arguments

\(x\)  
A nominal or ordinal variable (factor), should be in dataset$var form unless dataset specified in optional data argument.

\(w\)  
(Optional) Sampling weights of variable, must be numeric; should be in dataset$weightvar form unless dataset specified in optional data argument.

data  
(Optional) Name of dataset that contains \(x\) (and \(w\)) variable.

digits  
(Optional) Number of decimal places reported in result (defaults to 3).

level  
(Optional) A single number equal to the desired confidence level (i.e. 95, 99, 90, etc.). Default value is 95 percent confidence level.

printC  
(Optional) Do you want results printed to .html file in your working directory? Default is FALSE. Set to TRUE to print results.

plot  
(Optional) Do you want a plot of the confidence interval? Default is TRUE.

main  
(Optional) Change the main title of plot. Default title generated from level, \(x\), and \(w\).

xlab  
(Optional) Label for x-axis of confidence interval plot.

xlim  
(Optional) Modify x-axis limits of confidence interval plot.

...  
(Optional) Additional arguments passed to \plot function.

Value

Returns a data frame that gives the lower bound, point estimate, and upper bounds of each value of \(x\) variable.

Textbook References


Online Resources

- [R Tutorials & Resources for Foundations of Inference](#), Compiled by Barry C. Edwards

- [Sage Edge Resources for Political Analysis Series](#), for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.

- [Political Science Data Web Site](#): Find datasets for your own research and resources to help with the analysis.

Examples

```r
library(RCPA3)

CIprop(nes$lifex.knowimmig)
```
# using optional w and data arguments
CIprop(x=nes$lifex.knowimmig, w=nes$wt)
CIprop(x=lifex.knowimmig, w=wt, data=nes)

compmeansC

Mean comparison analysis function, makes controlled comparisons, generates plots, performs ANOVA

Description

Mean comparison analysis, options for weighted observations and control variable. Also supports several plotting options for basic mean comparisons and controlled mean comparisons. Can conduct single and two-factor analysis of variance (ANOVA) to test differences among multiple means.

Usage

compmeansC(dv, iv, w, z, data, digits = 2, compact = FALSE, ivlabs, zlabs,
anova = FALSE, printC = FALSE, plot = TRUE, main, xlab, ylab, ylim,
plot.ci = FALSE, z.palette, legend.title)

Arguments

dv Dependent variable, should be in dataset$var form unless dataset specified in optional data argument.
iv Independent variable, should be in dataset$var form unless dataset specified in optional data argument.
w (Optional) Sampling weights of variable (optional), must be numeric; should be in dataset$weightvar form unless dataset specified in optional data argument.
z (Optional) Control variable, must be numeric; should be in dataset$weightvar form unless dataset specified in optional data argument.
data (Optional) Name of dataset that contains dv, iv (and w) variables (optional).
digits (Optional) The number of decimal places reported in result (defaults to 2).
compact (Optional) Do you want compact version of controlled mean comparison table with N and Std. Dev. values omitted? Default is FALSE. Compact display only available for controlled comparisons.
ivlabs (Optional) A vector of names for the independent variable’s values (to abbreviate the mean comparison table’s row labels and iv labels on plots)
zlabs (Optional) A vector of names for the control variable’s values (to abbreviate a controlled mean comparison table’s column labels and z variable’s labels on plots)
anova (Optional) Do you want to conduct analysis of variance (ANOVA)? Default is FALSE.
printC (Optional) Do you want results printed to .html file in your working directory? Default is FALSE. Set to TRUE to print results.

plot (Optional) Do you want a plot of the means? Default is TRUE (makes a bar plot). Additional options:
- "line" to make a line plot
- "bar", TRUE, or T for bar plot (default plot)
- "points" to show means as points without connecting lines,
- FALSE or F to suppress plot.

main (Optional) Main label for plot, if missing, default main title generated.

xlab (Optional) x-axis label for plot, if missing, default label generated using iv name.

ylab (Optional) y-axis label for plot, if missing, default label generated using dv name.

ylim (Optional) Range of y-axis values on plot.

plot.ci (Optional) Do you want vertical 95 percent confidence intervals added to line plot of means? Default is FALSE. Only works when plot="line" or plot="points"

z.palette (Optional) For bar and line charts with control variables (z), the name of HCL color palette to use. Default is "LightGrays". See grDevices::hcl.pals for palette names and more information. Also see https://developer.r-project.org/Blog/public/2019/04/01/hcl-based-color-palettes-in-grdevices/ to view color palettes.

legend.title (Optional) Customize title of legend on plot used for controlling comparisons.

Value

Returns a mean comparison table as a matrix of values.

Textbook References


Online Resources

- R Tutorials & Resources for Making Comparisons, Graphing Relationships and Describing Patterns, Making Controlled Comparisons, and Chi-Square Test and Analysis of Variance, compiled by Barry C. Edwards
- Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.
- Political Science Data Web Site: Find datasets for your own research and resources to help with the analysis.
correlateC

Examples

```
library(RCPA3)

# basic usage: dv and iv, variables are vectors
compmeansC(dv=nes$ft.rep, iv=nes$partyid7)
compmeansC(dv=nes$ft.rep, iv=nes$partyid7, w=nes$wt, plot=TRUE)

# basic usage: data argument used
compmeansC(dv=infant.mortality, iv=region, data=world, plot=FALSE)

# with weights and z variable
compmeansC(dv=nes$ft.rep, iv=nes$partyid7, w=nes$wt, z=nes$gender, plot="line")
compmeansC(dv=nes$ft.gay, iv=nes$gender, z=nes$partyid3, compact=TRUE, plot=TRUE)
```

correlateC  

Correlation analysis for two or more numeric variables, with options for scatterplots, weighted observations, and inferential statistics.

Description

Given two or more numeric variables, correlateC reports correlation coefficients, along with inferential statistics (if requested), works with sampling weights. If more than two x variables are supplied, the function calculates correlation coefficients using pairwise complete observations (as opposed to limiting analysis to observations complete on all variables). The `wtd.cor` function is imported from the weights package. See `wtd.cor` documentation for details.

Usage

```
correlateC(x, w, data, digits = 3, stats = FALSE, printC = FALSE, plot = FALSE, jitter = FALSE, ...)
```

Arguments

- `x`  
  A list of variables for correlation analysis, variables must be numeric. Should be entered as list(dataset$var1, dataset$var2, dataset$var3 ... ) form unless dataset specified in optional data argument.

- `w`  
  (Optional) Sampling weights variable, must be numeric; should be in dataset$weightvar form unless dataset specified in optional data argument.

- `data`  
  (Optional) Name of dataset that contains x (and w) variable (optional).

- `digits`  
  (Optional) Number of decimal places reported in result (defaults to 3).

- `stats`  
  (Optional) Do you want the inferential statistics (standard errors, t-statistics, and p-values)? Default is FALSE. Set to TRUE for inferential statistics.

- `printC`  
  (Optional) Do you want results printed to .html file in your working directory? Default is FALSE. Set to TRUE to print results.
correlateC

plot  (Optional) Do you want scatterplot(s)? Default is FALSE.

jitter  (Optional) Do you want scatterplot pointed jittered? By default, points jittered when there are more than 500 observations, but you can set this arguments to TRUE/FALSE to override the default.

...  (Optional) Additional arguments passed to weights::wtd.cor function.

Details

Makes use of the wtd.cor function, part of the weights package.

Value

Returns the coefficients of correlation among x variables; if stats=TRUE, inferential statistics returned in tables as well.

Textbook References


Online Resources

• R Tutorials & Resources for Correlation and Bivariate Regression, compiled by Barry C. Edwards.

• Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.

• Political Science Data Web Site: Find datasets for your own research and resources to help with the analysis.

Examples

library(RCPA3)

correlateC(x=list(abortlaws, women.stateleg), data=states, plot=FALSE)

# with weighted observations and inferential statistics
correlateC(x=list(nes$ft.rep, nes$ft.trump.pre, nes$ft.dem, nes$ft.biden.pre),
          w=nes$wt, stats=TRUE)
Cross-tabulation analysis, option for weighting observations, makes controlled comparisons, generates plots, performs Chi-Square test, measures strength of association

**Description**

This is a workhorse function for analyzing the relationship between two variables measured at the nominal or ordinal-level (factors). Basic output is a cross-tabulation with column percentages and counts. Options include weighting observations, adding control variable for controlled cross-tabulation, several plotting options, conducting Chi-Square test of independence, and measuring strength of association.

**Usage**

crosstabC(dv, iv, w, z, data, digits = 2, compact = FALSE, dvlabs, ivlabs, zlabs, chisq = FALSE, Lambda = FALSE, somers = FALSE, cramers = FALSE, printC = FALSE, plot = TRUE, plot.response, main, xlab, ylab, z.palette, legend.title)

**Arguments**

dv Dependent variable, should be in dataset$var form unless dataset specified in optional data argument. Should be a nominal or ordinal-level variable.

iv Independent variable, should be in dataset$var form unless dataset specified in optional data argument. Should be a nominal or ordinal-level variable.

w (Optional) Sampling weights of variable, must be numeric; should be in dataset$weightvar form unless dataset specified in optional data argument.

z (Optional) Control variable, must be numeric; should be in dataset$weightvar form unless dataset specified in optional data argument.

data (Optional) Name of dataset that contains dv, iv (and w) variables.

digits (Optional) Number of decimal places reported in result (defaults to 2).

compact (Optional) Do you want compact display of cross-tabulation with row subtotals omitted? Default is FALSE.

dvlabs (Optional) A vector of names for the dependent variable’s values (to abbreviate the cross-tabulation’s row labels and dv labels on plots)

ivlabs (Optional) A vector of names for the independent variable’s values (to abbreviate the cross-tabulation’s column labels and iv labels on plots)

zlabs (Optional) A vector of names for the control variable’s values (to abbreviate the controlled cross-tabulation’s column labels and z variable labels on plots)

chisq (Optional) Do you want to conduct Chi-Square Test? If z argument specific, Chi-Square Test conducted on dv-iv relationship for each value of z.

lambda (Optional) Do you want Lambda reported? If z argument specified, Lambda reported for dv-iv relationship for each value of z.
somers  (Optional) Do you want Somers’ d reported? If z argument specific, Somers’ D reported for dv-iv relationship for each value of z.
cramers (Optional) Do you want Cramer’s V reported? If z argument specific, Cramer’s V reported for dv-iv relationship for each value of z.
printC  (Optional) Do you want to print cross-tabulation and plot (if plot is used) to .html file in working directory? (default: FALSE)
plot   (Optional) Do you want a plot of the cross-tabulation? Default is TRUE (and makes a bar plot). Other plot options:
• "line" for a line plot,
• "mosaic" for a mosaic plot,
• "bar", TRUE, or T for a bar plot (default plot)
• FALSE or F to suppress plot.
plot.response (Optional) Set plot.response="all" to plot all DV values (for uncontrolled comparisons only).
main     (Optional) Main label for plot
xlab    (Optional) x-axis label for plot
ylab    (Optional) y-axis label for plot
z.palette (Optional) For bar and line plots with control variables (z).
legend.title (Optional) Title for legend shown if plot used with z argument.

Value

Returns a cross-tabulation

Textbook References


Online Resources

• Tutorials & Resources for Making Comparisons, Graphing Relationships and Describing Patterns, Making Controlled Comparisons, and Chi-Square Test and Analysis of Variance, compiled by Barry C. Edwards
• Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.
• Political Science Data Web Site: Find datasets for your own research and resources to help with the analysis.
**debate**

**Examples**

```r
library(RCPA3)

crosstabC(dv=nes$death.penalty, iv=nes$partyid3)

# with optional w, data, chisq, somers arguments
crosstabC(dv=death.penalty, iv=partyid3, w=wt, data=nes, chisq=TRUE, somers=TRUE)

# example with optional w, data, z, and plot="line" arguments
crosstabC(dv=death.penalty, iv=partyid3, w=wt, data=nes, z=gender, plot="line")
```

**debate**

*Debate Experiment dataset for R Companion to Political Analysis, Third Edition*

**Description**

A dataset with variables about students who participated in an experiment. This dataset is used to demonstrate application of R to political analysis. See book Appendix for variable names and descriptions.

**Usage**

debate

**Format**

A data frame with 171 rows and 14 variables.

- **obs** Unique identification number for each subject
- **assignment** Name of condition subject was assigned to
- **tv** Did subject watch debate on TV? 1 = yes, 0 = no
- **debinfo** Number correct answers on five question quiz about the debate.
- **catholic** Is subject Catholic? 1 = yes, 0 = no
- **issues** Which candidate do you agree with on policy issues?
- **integrity** Which candidate has more integrity?
- **leadership** Which candidate is more effective leader?
- **empathy** Which candidate has more empathy?
- **sophdum** Is respondent a sophomore? 1 = yes, 0 = no.
- **won** Which candidate won the debate? 1 = Kennedy ... 4 = Tie ... 7 = Nixon
- **pid** Self-reported partisan identification on standard 1-7 scale
- **ideology** Self-reported political ideology on standard 1-7 scale
- **gender** Subject’s gender, 0 = male, 1 = female.
**describeC**  
*Generates table of descriptive statistics for one or more variables in a dataset*

**Source**  
Jamie Druckman. See Appendix of printed textbook for further information.

**Description**  
Prints a table of descriptive statistics for variable(s) specified with x argument. Works with variables measures at any level but output varies with level of measurement (e.g. you won’t get standard deviation for a nominal variable). Option for weighting observations.

**Usage**  
```
describeC(x, w, data, digits = 3, printC = FALSE)
```

**Arguments**

- **x**  
  A variable or list of variables, should be in dataset$var form unless dataset specified in optional data argument.

- **w**  
  (Optional) Sampling weights of variable, must be numeric; should be in dataset$weightvar form unless dataset specified in optional data argument.

- **data**  
  (Optional) Name of dataset that contains x (and w) variable.

- **digits**  
  (Optional) Number of decimal places reported in result (defaults to 3).

- **printC**  
  (Optional) Do you want to print table of descriptive statistics to .html file in working directory? (default: FALSE)

**Value**  
Table of descriptive statistics

**Textbook References**


**Online Resources**

- Tutorials & Resources for Descriptive Statistics, Compiled by Barry C. Edwards
- Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.
- Political Science Data Web Site: Find datasets for your own research and resources to help with the analysis.
**freqC**

*Reports the frequency distribution of dataset variable with table and bar chart*

**Description**

Generates frequency distribution table and bar chart to describe distribution of variable values. Based on `freq` function in descr package.

**Usage**

```r
freqC(x, w, data, digits = 2, rowlabs, printC = FALSE, plot = TRUE, main,
     xlab, ylab, bar.col, ...)
```

**Arguments**

- `x` The variable to be analyzed. If dataset not specified with data argument, should be a vector in form `dataset$var`.
- `w` (Optional) Sample weights (must be numeric if used). If dataset not specified with data argument, should be in form `dataset$weightvar`.
- `data` (Optional) Name of dataset that contains `x` (and `w`) variable.
- `digits` (Optional) Number of digits to display after decimal point (default=2).
- `rowlabs` (Optional) Vector specifying custom text for labeling table rows and chart bars. The `rowlabs` vector must correspond to `x` variable’s levels (if the variable has five levels, `rowlabs` must be length 5). Useful when default value labels are too long.
- `printC` (Optional) Do you want to print frequency distribution table and bar chart (if plot is used) to .html file in working directory? (default: FALSE)
- `plot` (Optional) Do you want a bar chart? (default set to TRUE)
- `main` (Optional) Main title of bar chart.
Optional) The x-axis label of bar chart.

- **ylab**
   - (Optional) The y-axis label of bar chart.

- **bar.col**
  - (Optional) The name of color to use for bars. Default is "gray80".

- **...**
  - (Optional) Additional arguments passed to `descr::freq` function.

### Value

A frequency distribution table.

### Textbook References


### Online Resources

- R Tutorials & Resources for Descriptive Statistics, compiled by Barry C. Edwards
- Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.
- Political Science Data Web Site: Find datasets for your own research and resources to help with the analysis.

### Examples

```r
library(RCPA3)

# unordered factors
defC(x=region, data=world)

# ordered factors
defC(x=threat.from.china, data=nes)
```

### Description

If you don’t complete file argument, you will be prompted to select file. Supports dataset file format like Stata, SPSS, Rdata, and csv files. It previews imported data and asks you to confirm before returning a data frame. You must assign the returned data frame to an object to work with it. If `getC` doesn’t support a file type, it may suggest other functions and packages for importing that type of file.
**getC**

**Usage**

```
getC(file, confirm = TRUE, ...)
```

**Arguments**

- `file` (Optional) Path to file you want to get and load in your R session; if you do not specify file you will be prompted to select one.
- `confirm` (Optional) Do you want to confirm getting file before function results returned? (default: TRUE)
- `...` (Optional) Additional arguments passed to loading function

**Value**

Dataset specified in file argument as a data frame. You must assign this returned data frame to an object to work with it.

**Textbook References**


**Online Resources**

- R Tutorials & Resources for Doing Your Own Political Analysis, Compiled by Barry C. Edwards
- Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.
- Political Science Data Web Site: Find datasets for your own research and resources to help with the analysis.

**Examples**

```
library(RCPA3)

# basic call will prompt user to choose file
## Not run:
getC()

## End(Not run)
```
histC

Creates histogram to show distribution of interval (numeric) variable's values

Description

Generates frequency distribution table of binned values and a histogram to describe distribution of variable values.

Usage

histC(x, w, data, breaks, digits = 2, printC = FALSE, plot = TRUE, main, xlab, ylab, bar.col, ...)

Arguments

x
The variable to be analyzed. If dataset not specified with data argument, should be a vector in form dataset$var.

w
(Optional) Sample weights (must be numeric if used). If dataset not specified with data argument, should be in form dataset$weighvar

data
(Optional) Name of dataset that contains x (and w) variable.

breaks
(Optional) Specify how to break the x variable into bins. Options include the number of breaks, a vector specifying the breakpoints, or the name of an algorithm that generates breakpoints. Default value is "Sturges" (other algorithms are "Scott" and "FD", see details in weights::wtd.hist documentation).

digits
(Optional) Number of digits to display after decimal points (default is 2).

printC
(Optional) Do you want the histogram and binned frequencies table printed to working directory? (default: FALSE)

plot
(Optional) Do you want the histogram graphic? (default: TRUE)

main
(Optional) Customize main title for histogram.

xlab
(Optional) Custom label for x-axis of histogram.

ylab
(Optional) Custom label for y-axis of histogram.

bar.col
(Optional) Color for histogram bars; default is "gray80".

...
(Optional) Additional arguments passed to weights::wtd.hist function.

Value

A frequency distribution table of binned x variable values.

Textbook References

Online Resources

- R Tutorials & Resources for Descriptive Statistics, Compiled by Barry C. Edwards
- Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.
- Political Science Data Web Site: Find datasets for your own research and resources to help with the analysis.

Examples

```r
library(RCPA3)

histC(x=states$covid.cases.per1000)
```

---

logregC

Logistic regression analysis with options for weighted observations, odds ratio reports, model fit statistics, and plots of residuals

Description

Logistic regression analysis function with many useful features. Its standard output included a table of coefficients, table of deviance residuals, and summary of additional model information. Options include weighting observations, additional reports on odds ratios, ANOVA, multiple measures of model fit, proportional reduction in error, and diagnostic plots of residuals.

Usage

```r
logregC(formula, w, data, digits = 3, orci = FALSE, fit.stats = FALSE, anova = FALSE, pre = FALSE, printC = FALSE, res.plots = FALSE, ...)
```

Arguments

- `formula`: should be in `dataset$dv ~ dataset$iv1 + dataset$iv2` unless dataset specified in optional data argument.
- `w`: (Optional) Sampling weights of variable, must be numeric; should be in `dataset$weightvar` form unless dataset specified in optional data argument.
- `data`: (Optional) Name of dataset that contains `dv`, `iv` (and `w`) variables.
- `digits`: (Optional) Number of decimal places reported in result (defaults to 2).
- `orci`: (Optional) Do you want table reporting odds ratios for coefficients with confidence intervals? (default: FALSE)
- `fit.stats`: (Optional) Do you want a table of assorted model fit statistics? (default: FALSE)
- `anova`: (Optional) Do you want ANOVA table reported? (default: FALSE)
- `pre`: (Optional) Do you want table reporting proportion reduction in error achieved by model? This is a Lambda-style measure of model fit. (default: FALSE)
printC  (Optional) Do you want results printed to .html file in your working directory? Default is FALSE. Set to TRUE to print results.

res.plots  (Optional) Do you want a set of diagnostic plots of model residuals? (default: FALSE)

...  (Optional) Additional arguments passed to glm function (unweighted models)
or svyglm function (weighted models).

Value

Returns a glm (unweighted models) or svyglm (weighted models) object.

Textbook References


Online Resources

• R Tutorials & Resources for Logistic Regression, compiled by Barry C. Edwards

• Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.

• Political Science Data Web Site: Find datasets for your own research and resources to help with the analysis.

Examples

library(RCPA3)

# basic usage with variable vectors
logregC(states$battleground2020 ~ states$vep16.turnout)

# with post-estimation analysis
logregC(states$battleground2020 ~ states$vep16.turnout, orci=TRUE, fit.stats=TRUE, anova=TRUE, pre=TRUE, res.plots=TRUE)

nes

NES dataset for R Companion to Political Analysis, Third Edition

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 8280 rows and 429 variables.

- **abortion.imp**: PRE: Importance of abortion issue to R
- **abortion.legal**: PRE: STD Abortion: self-placement
- **abortion.scotus**: PRE: SUMMARY: Abortion rights Supreme Court
- **active.duty.mil**: PRE: Armed forces active duty
- **address.yrs**: PRE: Years R lived at address
- **age**: PRE: SUMMARY: Respondent age
- **agree.facts**: PRE: How important that people agree on basic facts
- **allow.refugees**: POST: SUMMARY: Favor/oppose allowing refugees to come to US
- **american.id.import**: POST: How important is being American to R’s identity
- **angry.about.things**: PRE: How angry R feels about how things are going in the country
- **approve.aca**: POST: SUMMARY: Approve/disapprove Affordable Care Act
- **approve.cong**: PRE: SUMMARY: Approval of Congress handling its job
- **approve.gov.covid**: PRE: SUMMARY: Approve or disapprove R’s governor handling COVID-19
- **approve.local.covid**: PRE: SUMMARY: Approve or disapprove local government handling COVID-19
- **approve.pres.covid**: PRE: SUMMARY: Approve or disapprove President handling COVID-19
- **approve.pres.econ**: PRE: SUMMARY: Approve or disapprove President handling economy
- **approve.pres.hc**: PRE: SUMMARY: Approve or disapprove President handling health care
- **approve.pres.imm**: PRE: SUMMARY: Approve or dissaprove President handling immigration
- **approve.pres.ir**: PRE: SUMMARY: Approve or disapprove President handling foreign relations
- **approve.pres.job**: PRE: SUMMARY: Approve or disapprove President handling job
- **ban.assault.rif**: POST: SUMMARY: Favor/oppose banning 'assault-style' rifles
- **been.arrested**: POST: Has R ever been arrested
- **bible.god.man**: PRE: Is Bible word of God or men
- **biden.cares**: PRE: Democratic Presidential candidate trait: really cares
- **biden.honest**: PRE: Democratic Presidential candidate trait: honest
- **biden.knowledge**: PRE: Democratic Presidential candidate trait: knowledgeable
- **biden.libcon7**: PRE: 7pt scale liberal-conservative: Democratic Presidential candidate
- **biden.strlead**: PRE: Democratic Presidential candidate trait: strong leadership
- **birthright.citizens**: PRE: SUMMARY: Favor or oppose ending birthright citizenship
- **blacks.gotless**: POST: Agree/disagree: blacks have gotten less than they deserve
- **blacks.pastdiff**: POST: Agree/disagree: past slavery & discrimination make it difficult for blacks
blacks.tryharder POST: Agree/disagree: if blacks tried harder they’d be as well off as whites
blacks.workforit POST: Agree/disagree: blacks should work their way up without special favors
border.wall PRE: SUMMARY: Favor or oppose building a wall on border with Mexico
born.in.usa PRE: Rs: born US, Puerto Rico, or some other country
buy.back.rifles POST: Favor/oppose government buy back of ‘assault-style’ rifles
campaign.news.carlson PRE: Mention: TV PROG - Tucker Carlson Tonight (Fox)
campaign.news.colbert PRE: Mention: TV PROG - The Late Show with Stephen Colbert
campaign.news.hannity PRE: Mention: TV PROG - Hannity (Fox)
campaign.news.maddow PRE: Mention: TV PROG - The Rachel Maddow Show (MSNBC)
campaign.news.none PRE: Media sources R used to follow presidential campaign: none
campaign.news.papers PRE: Media sources R used to follow presidential campaign: newspapers
campaign.news.radio PRE: Media sources R used to follow presidential campaign: radio news
campaign.news.tv PRE: Media sources R used to follow presidential campaign: tv programs
campaign.news.web PRE: Media sources R used to follow presidential campaign: internet sites
campaign.spendlim POST: Limits on campaign spending
campaigns.interest PRE: How interested in following campaigns
cant.get.ahead POST: Because of rich and powerful it’s difficult for the rest to get ahead
care.who.wins PRE: How much R cares who wins Presidential Election [revised]
case.id 2020 Case ID
censor.self PRE: How often self censor
changed.names PRE: R name ever changed
child.behave POST: Which child trait more important: considerate or well-behaved
child.manners POST: Which child trait more important: curiosity or good manners
child.obey POST: Which child trait more important: obedience or self-reliance
child.respect POST: Which child trait more important: independence or respect
citizenship.path POST: SUMMARY: Favor/oppose providing path to citizenship
civ12.argue POST: Has R in past 12 months: gotten into a political argument
civ12.comment POST: Has R in past 12 months: posted comment online about political issue
civ12.community POST: Has R in past 12 months: worked w/others to deal w/issue facing community

civ12.cong POST: Has R in past 12 months: contacted member of US Senate or House of Rep
civ12.fedoff POST: Has R in past 12 months: contacted non-elected official in federal govt
civ12.fedpol POST: Has R in past 12 months: contacted federal elected official
civ12.giveorg POST: Has R in past 12 months: given money to other organization
civ12.giverelig POST: Has R in past 12 months: given money to religious organization
civ12.march POST: Has R in past 12 months: joined a protest march, rally, or demonstration
civ12.meeting POST: Has R in past 12 months: attend mtg about issue facing community/schools
cles

**civ12.petition** POST: Has R in past 12 months: sign internet or paper petition

**civ12.stateoff** POST: Has R in past 12 months: contacted non-elected official in state/local gov

**civ12.statepol** POST: Has R in past 12 months: contacted elected official on state/local level

**civ12.vol** POST: Has R in past 12 months: done any volunteer work

**climate.ch.weather** POST: How much is climate change affecting severe weather/temperatures in US

**climate.import** POST: How important is issue of climate change to R

**community.yrs** PRE: How long lived in this community YRS

**consumer.politics** POST: How often bought or boycotted product/service for social/political reasons

**contacted.gotv** POST: Anyone talk to R about registering or getting out to vote

**covid.election** PRE: Options for election if COVID-19 continues

**covid.fed** PRE: SUMMARY: Federal government response to COVID-19

**covid.made.lab** POST: Was the coronavirus (COVID-19) was developed intentionally in a lab or not

**covid.reopening** PRE: SUMMARY: Re-opening too quickly or too slowly

**covid.restrictions** PRE: Limits placed on public activity due to COVID-19 too strict or not

**covid.science.help** POST: How important should science be for decisions about COVID-19

**death.penalty** PRE: SUMMARY: R favor/oppose death penalty

**def.spend.7pt** PRE: 7pt scale defense spending: self-placement

**deficit.reduce** POST: Importance of reducing deficit

**dem.libcon7** PRE: 7pt scale liberal-conservative: Democratic party

**deport.children** PRE: SUMMARY: Should children brought illegally be sent back or allowed to stay

**deport.unauth** POST: SUMMARY: Favor/oppose returning unauthorize immigrants to native country

**discrim.vs.asians** POST: Discrimination in the US against Asians

**discrim.vs.blacks** POST: Discrimination in the US against blacks

**discrim.vs.christians** POST: Discrimination in the US against Christians

**discrim.vs.glb** POST: Discrimination in the US against Gays and Lesbians

**discrim.vs.hispanics** POST: Discrimination in the US against Hispanics

**discrim.vs.men** POST: Discrimination in the US against men

**discrim.vs.muslims** POST: Discrimination in the US against Muslims

**discrim.vs.trans** POST: Discrimination in the US against transgender people

**discrim.vs.whites** POST: Discrimination in the US against whites

**discrim.vs.women** POST: Discrimination in the US against women

**diversity.good.usa** POST: SUMMARY: Increasing diversity made US better/worse place to live

**divided.govt** PRE: Party Control or split government
**donations.change.votes** POST: Congress change votes because of donation to campaign

**econ.current** PRE: Current economy good or bad

**econ.lastyear** PRE: SUMMARY: National economy better or worse in last year

**econ.mobility.now** POST: SUMMARY: Economic mobility

**econ.nextyear** PRE: SUMMARY: Economy better or worse in next 12 months

**econ.worry** PRE: How worried about national economy

**educ.5cat** PRE: SUMMARY: Respondent 5 Category level of education

**education** PRE: Highest level of Education

**elect.asians** POST: How important that more Asians get elected to political office

**elect.blacks** POST: How important that more blacks get elected to political office

**elect.hispanics** POST: How important that more Hispanics get elected to political office

**elect.lgbt** POST: How important that more LGBT people get elected to political office

**elect.women** POST: How important that more women get elected to political office

**elections.govt.attn** PRE: Elections make government pay attention

**envir.or.biz** PRE: 7pt scale environment-business tradeoff: self-placement

**equal.opp** POST: Society should make sure everyone has equal opportunity

**facebook.polpost** POST: How often post political content on Facebook

**facebook.use** POST: How often use Facebook

**faced.gender.discrim** POST: How much discrimination has R faced because of gender

**faced.race.discrim** POST: How much discrimination has R faced personally because of race/ethnicity

**fed.bw.better** POST: SUMMARY: Federal government treats blacks or whites better

**fedspend.aidpoor** PRE: SUMMARY: Federal Budget Spending: aid to the poor

**fedspend.border** PRE: SUMMARY: Federal Budget Spending: Tightening border security

**fedspend.crime** PRE: SUMMARY: Federal Budget Spending: dealing with crime

**fedspend.environ** PRE: SUMMARY: Federal Budget Spending: protecting the environment

**fedspend.highways** PRE: SUMMARY: Federal Budget Spending: building and repairing highways

**fedspend.schools** PRE: SUMMARY: Federal Budget Spending: public schools

**fedspend.socsec** PRE: SUMMARY: Federal Budget Spending: Social Security

**fedspend.welfare** PRE: SUMMARY: Federal Budget Spending: welfare programs

**feminist** POST: Does R consider themself a feminist or anti-feminist

**feminist.import** POST: How important is being a feminist

**finance.lastyear** PRE: R how much better or worse off financially than 1 year ago

**finance.nextyear** PRE: R how much better or worse off financially next year

**financial.worried** PRE: How worried is R about current financial situation

**ft.asian.am** POST: Feeling thermometer: Asian-Americans

**ft.asians** POST: Feeling thermometer: Asians
ft.biden.post POST: Feeling thermometer: Democratic Presidential candidate: Joe Biden
ft.biden.pre PRE: Feeling Thermometer: Joe Biden, Democratic Presidential candidate
ft.bigbiz POST: Feeling thermometer: big business
ft.blacks POST: Feeling thermometer: blacks
ft.blm POST: Feeling thermometer: Black Lives Matter
ft.capitalists POST: Feeling thermometer: capitalists
ft.cdc POST: Feeling thermometer: Center for Disease Control (CDC)
ft.christian.fund POST: Feeling thermometer: Christian fundamentalists
ft.christians POST: Feeling thermometer: Christians
ft.congress POST: Feeling thermometer: congress
ft.conservatives POST: Feeling thermometer: conservatives
ft.dem PRE: Feeling Thermometer: Democratic Party
ft.fauci POST: Feeling thermometer: Dr. Anthony Fauci
ft.fbi POST: Feeling thermometer: Federal Bureau of Investigation (FBI)
ft.feminists POST: Feeling thermometer: feminists
ft.gays.lesbians POST: Feeling thermometer: gay men and lesbians
ft.harris.post POST: Feeling thermometer: Democratic Vice Presidential candidate: Kamala Harris
ft.harris.pre PRE: Feeling Thermometer: Kamala Harris, Democratic Vice-Presidential candidate
ft.hispanics POST: Feeling thermometer: Hispanics
ft.ice POST: Feeling thermometer: Immigration and Customs Enforcement (ICE) agency
ft.illegal.imm POST: Feeling thermometer: illegal immigrants
ft.jews POST: Feeling thermometer: Jews
ft.journalists POST: Feeling thermometer: journalists
ft.liberals POST: Feeling thermometer: liberals
ft.metoo POST: Feeling thermometer: #MeToo movement
ft.muslims POST: Feeling thermometer: Muslims
ft.nato POST: Feeling thermometer: North Atlantic Treaty Organization (NATO)
ft.nra POST: Feeling thermometer: National Rifle Association (NRA)
ft.obama PRE: Feeling Thermometer: Barack Obama
ft.pence.post POST: Feeling thermometer: Republican Vice Presidential candidate: Mike Pence
ft.pence.pre PRE: Feeling Thermometer: Mike Pence, Republican Vice-Presidential candidate
ft.police POST: Feeling thermometer: police
ft.pp POST: Feeling thermometer: Planned Parenthood
ft.rep PRE: Feeling Thermometer: Republican Party
ft.rural POST: Feeling thermometer: rural Americans
ft.scientists POST: Feeling thermometer: scientists
feeling thermometer: U.S. Supreme Court
feeling thermometer: socialists
feeling thermometer: transgender people
feeling thermometer: Republican Presidential candidate: Donald Trump
feeling thermometer: Donald Trump, Republican Presidential candidate
feeling thermometer: United Nations (UN)
feeling thermometer: labor unions
feeling thermometer: whites
feeling thermometer: World Health Organization (WHO)
Should gay and lesbian couples be allowed to adopt
SUMMARY: Favor/oppose laws protect gays lesbians against job discrimination
R position on gay marriage
Services to same sex couples
What is your (R) sex? [revised]
7pt scale gov assistance to blacks scale: self-placement
Favor/oppose government trying to reduce income inequality
Government action about rising temperatures (STRENGTH)
Government action about rising temperatures
How many in government are corrupt
7pt scale guaranteed job-income scale: self-placement
7pt scale gov-private medical insurance scale: self-placement
Increase/decrease government spending to help pay for health care
Government run by a few big interests or for benefit of all
7pt scale spending & services: self-placement
How concerned government might undermine media
Does government waste much tax money
Would it be good for society to have more or less government regulation
How many grandparents born outside the US
Where R grew up
SUMMARY: Favor/oppose background checks for gun purchases
Should federal government make it more difficult or easier to buy a gun
How important is issue of gun access to R
How many Guns owned
How happy R feels about how things are going in the country
How difficult was it for R to vote
Has R experienced harassment at work
harrassed.work.oft  POST: How often has R experienced harrassment at work
has.daughter  POST: Does R have any sons or daughters - one or more daughters
has.nokids  POST: Does R have any sons or daughters - no sons and no daughters
has.son  POST: Does R have any sons or daughters - one or more sons
have.health.ins  PRE: Does R have health insurance
hc.pay.bills  PRE: How likely R able to pay all health care costs in next 12 months
health  PRE: Health of R
health.lose.ins  PRE: R concerned about losing health insurance
health.pay.costs  PRE: R concerned about paying for health care
help.with.science  POST: How much do people need help from experts to understand science
hh.covid.symp  PRE: Anyone in household COVID-19 based on symptoms
hh.covid.test  PRE: Anyone in household tested pos for COVID-19
hh.family.mem  PRE: R living with how many family members
hh.income  PRE-POST: SUMMARY: Total (family) income
hh.income.pre  PRE: SUMMARY: Total (family) income
hh.landline  PRE: Is there a working HH landline phone
hh.num.child  PRE: How many children in HH age 0-17
hh.partner.status  PRE: Domestic partnership status
hh.union.mem  PRE: Anyone in HH belong to labor union
housing.payments  PRE: How likely R able to make all housing payments in next 12 months
hydrox.treat.covid  POST: Evidence that hydroxychloroquine is effective treatment for COVID-19
imp.govt.checks  PRE: How important branches of government keep one another from too much power
imp.media.crit  PRE: How important that news organizations free to criticize
imp.off.conseq  PRE: How important elected officials face serious consequences for misconduct
imports.limit  POST: SUMMARY: Favor/oppose new limits on imports
income.gap.change  PRE: SUMMARY: How much larger is income gap today
income.gap.today  PRE: Income gap today more or less than 20 years ago
ineq.worryless  POST: We'd be better off if worried less about equality
intl.force  PRE: Force to solve international problems
invest.stocks  PRE: Money invested in Stock Market
laws.contrib.indiv  POST: Congress pass laws that benefit contributor individuals
laws.contrib.org  POST: Congress pass laws that benefit contributor organization
leader.compromise  PRE: Prefer government official who compromises or sticks to principles
libcon3  PRE: 3pt scale liberal-conservative self-placement
libcon7  PRE: 7pt scale liberal-conservative self-placement
life.sat  PRE: How satisfied is R with life
life.ex.buyusa  POST: Life experience: does R choose products because they are made in America
life.ex.flyflag  POST: Life experience: has R displayed American flag on house in past year
life.ex.foodstamps  POST: Life experience: has R ever received food stamps or other public assistance
life.ex.huntfish  POST: Life experience: has R gone hunting or fishing in past year
life.ex.knowimmig  POST: Life experience: does R know someone moved to U.S. from another country
life.ex.oweloans  POST: Life experience: does R currently owe money on student loans
life.ex.reitreacct  POST: Life experience: does R have a pension or retirement account
life.ex.ridebus  POST: Life experience: has R used public transportation in past year
life.ex.sharkbite  POST: Life experience: has R ever been bitten by a shark
lgbtq.friendfam  POST: R has family/neighbors/coworkers/friends who are gay, lesbian or bisexual
marital  PRE: Marital status
medical.putoff  PRE: Put off checkup and vaccines
metoo.toofar  POST: SUMMARY: Attention to sexual harassment as gone too far/not far enough
middle.class.ext  POST: Is R lower middle class, middle class, upper middle class? [EGSS]
min.wage.change  POST: Should the minimum wage be raised, kept the same, or lowered
morals.adjust  POST: The world is changing & we should adjust view of moral behavior
morechance.okay  POST: Not a big problem if some have more chance in life
moreless.govt  POST: SUMMARY: Less or more government
opioid.addiction  POST: SUMMARY Should federal govt do more/less about opioid drug addiction
oth.race.concern  POST: How often does R have concerned feelings for other racial/ethnic groups
oth.race.feel  POST: How often R imagines how they would feel before criticizing other groups
oth.race.persp  POST: How often does R try to understand perspective of other racial/ethnic group
oth.race.protect  POST: How often R feels protective of someone due to race or ethnicity
paid.parent.leave  PRE: SUMMARY: Require employers to offer paid leave to parents of new children
parents.born.usa  PRE: Native status of parents
party.register  PRE-POST: SUMMARY: Party of registration
partyid3  PRE: Party ID, 3 categories
partyid7  PRE: SUMMARY: Party ID
partyid.importance  PRE: Party identity importance
people.fed.lies  POST: Much of what people hear in schools and media are lies by those in power
people.too.sens  PRE: Need to be more sensitive talking or people too easily offended
person.get.ahead POST: How much opportunity in America for average person to get ahead
pol.asian.infl POST: How much influence do Asians have in US politics
pol.black.infl POST: How much influence do blacks have in US politics
pol.dontcare POST: [STD] Public officials don’t care what people think
pol.for.insiders POST: Our political system only works for insiders with money and power
pol.hispanic.infl POST: How much influence do Hispanics have in US politics
pol.hurt.fam POST: How much have political differences hurt relationships w/family
pol.nosay POST: [STD] Have no say about what goverment does
pol.oligarchy POST: Business and politics controlled by few powerful people
pol.toocomplex POST: [REV] Politics/government too complicated to understand
pol.understand POST: [REV] How well does R understand important political issues
pol.white.infl POST: How much influence do whites have in US politics
polact.givecand POST: R contribute money to individual candidate running for public office
polact.giveoth POST: R contribute to any other group that supported or opposed candidates
polact.giveparty POST: R contribute money to political party during this election year
polact.meetings POST: R go to any political meetings, rallies, speeches, dinners
polact.onlinemeet POST: R attend online political meetings, rallies, speeches, fundraisers
polact.othwork POST: R do any (other) work for party or candidate
polact.postsign POST: R wear campaign button or post sign or bumper sticker
polact.talkpol POST: R ever discuss politics with family or friends
polact.talkvote POST: R talk to anyone about voting for or against a party or candidate
police.bw.better POST: SUMMARY: Police treat blacks or whites better
police.stop.lastyr POST: During past 12 months, R or any family members stopped by police
police.useforce POST: How often do police officers use more force than necessary
political.violence PRE: SUMMARY: Political violence compared to 4 yrs ago
politics.attention PRE: How often does R pay attention to politics and elections
polquiz.fedspend POST: On which program does Federal government spend the least
polquiz.german POST: Office recall: German Chancellor - Angela Merkel [coded/scheme 1]
polquiz.housemaj PRE: Party with most members in House before election
polquiz.russian POST: Office recall: Russian President - Vladimir Putin [coded/scheme 1]
polquiz.scotus POST: Office recall: SCOTUS Chief Justice - John Roberts [coded/scheme 1]
polquiz.sen.term PRE: How many years in full term for US Senator
polquiz.senatemaj PRE: Party with most members in Senate before election
polquiz.speaker POST: Office recall: Speaker of the House - Nancy Pelosi [coded/scheme 1]
polquiz.vp POST: Office recall: Vice-President - Mike Pence [coded]
postmat.1a POST: Post materialism most important 1A
postmat.1b POST: Post materialism next most important 1B
postmat.2a  POST: Post materialism most important 2A
postmat.2b  POST: Post materialism next most important 2B
pref.hiring.blacks  POST: SUMMARY: Favor/oppose preferential hiring/promotion of blacks
pres.ask.foreign  PRE: Appropriate/inappropriate Pres ask foreign countries to investigate rivals
pres.nochecks  PRE: SUMMARY: Helpful/harmful if Pres didn’t have to worry about congress/courts
presvote2020  PRE-POST: SUMMARY: 2020 Presidential vote
primary.voter  PRE: Did R vote in a Presidential primary or caucus
protestors.conduct  PRE: SUMMARY: Protestors actions been mostly violent or peaceful
race.ethnicity  PRE: SUMMARY: R self-identified race/ethnicity
reddit.polpost  POST: How often post political content on Reddit
reddit.use  POST: How often use Reddit
reg.greenhouse  POST: SUMMARY: Favor/oppose increased regulation on greenhouse emissions
region  SAMPLE: Census region
relig.ever.attend  PRE: Ever attend church or religious services
relig.how.often  PRE: Attend religious services how often
religion  PRE: What is present religion of R
religion.group  PRE: SUMMARY: Major group religion summary
religion.imp  PRE: Is religion important part of R life [revised]
religious.id  PRE: Religious identification
rep.libcon7  PRE: 7pt scale liberal-conservative: Republican party
restrict.journalists  PRE: Favor or oppose restricting journalist access
rural.getmore  POST: SUMMARY: People in rural areas get more/less from government
rural.influence  POST: SUMMARY: People in rural areas have too much/too little influence
rural.respect  POST: SUMMARY: People in rural areas get too much/too little respect
rural.urban  POST: Does R currently live in a rural or urban area
rural.urban.id  POST: How important is urban or rural to R’s identity
russia.int.election  PRE: Likelihood of Russian interference in upcoming election
russia.interfere  POST: Did Russia try to interfere in 2016 presidential election or not
separate.children  POST: SUMMARY: Favor/oppose separating children of detained immigrants
sexual.orient  PRE: Sexual orientation of R [revised]
smoke.cig.life  POST: R smoked 100 cigarettes in life
smoke.cig.now  POST: R currently smoking
social.class  POST: How would R describe social class [EGSS]
speak.english  PRE: How important to speak English in US
split.ticket  PRE: Split-ticket voting
state  SAMPLE: Sample location FIPS state
stateabbr  SAMPLE: Sample location state postal abbreviation
survey.serious  PRE: How often took survey seriously

talkpol.week  POST: How many days in past week discussed politics with family or friends

tax.rich  POST: Favor or oppose tax on millionaires

terrorism.worry  POST: DHS: How worried about terrorist attack in near future

threat.from.china  POST: How much is China a threat to the United States

threat.from.germany  POST: How much is Germany a threat to the United States

threat.from.iran  POST: How much is Iran a threat to the United States

threat.from.japan  POST: How much is Japan a threat to the United States

threat.from.mexico  POST: How much is Mexico a threat to the United States

threat.from.russia  POST: How much is Russia a threat to the United States

trad.fam.values  POST: Fewer problems if there was more emphasis on traditional family values

trade.agreements  POST: SUMMARY: Favor/oppose free trade agreements

trade.good.ir  POST: SUMMARY: Increasing trade good/bad for international relationships

trade.jobs.abroad  POST: SUMMARY: International trade increased/decreased jobs abroad

trade.jobs.usa  POST: SUMMARY: International trade increased/decreased jobs in US

trans.friendfam  POST: R has family/neighbors/coworkers/friends who are transgender

trans.military  POST: SUMMARY: Favor/oppose transgender people serve in military

trans.policy  PRE: SUMMARY: Transgender policy

treat.people.fair  POST: If people were treated more fairly we would have fewer problems

trump.acquittal  PRE: SUMMARY: Favor or oppose Senate acquittal decision

trump.cares  PRE: Republican Presidential Candidate trait: really cares

trump.corruption  PRE: SUMMARY: Corruption increased or decreased since Trump

trump.deport.more  POST: Did Trump administration deport more immigrants or did Obama

trump.honest  PRE: Republican Presidential Candidate trait: honest

trump.impeachment  PRE: SUMMARY: Favor or oppose House impeachment decision

trump.knowledge  PRE: Republican Presidential Candidate trait: knowledgeable

trump.libcon7  PRE: 7pt scale liberal-conservative: Republican Presidential candidate

trump.strlead  PRE: Republican Presidential Candidate trait: strong leadership

trump.ukraine  PRE: Did Trump ask Ukraine to investigate rivals

trust.dc  PRE: How often trust government in Washington to do what is right [revised]

trust.election.off  PRE: Trust election officials

trust.experts  POST: SUMMARY: Trust ordinary people/experts for public policy

trust.media  PRE: How much trust in news media

trust.people  PRE: How often can people be trusted

turnout2020  PRE-POST: SUMMARY: Voter turnout in 2020

twitter.polpost  POST: How often post political content on Twitter

twitter.use  POST: How often use Twitter
unemploy.lastyear  PRE: SUMMARY: Unemployment better or worse in last year
unemploy.nextyear  PRE: More or less unemployment in next year
unemploy.rate.now  POST: What is the current unemployment rate
univ.basic.income  POST: SUMMARY: Favor/oppose federal program giving citizens $12K/year
urban.unrest  PRE: Best way to deal with urban unrest
usa.better  POST: SUMMARY: US better or worse than most other countries
usa.on.track  PRE: Are things in the country on right track
usa.stay.home  PRE: SUMMARY: Country would be better off if we just stayed home
usa.stronger  PRE: During last year, US position in world weaker or stronger
vaccine.schools  POST: SUMMARY: Favor/oppose requiring vaccines in schools
vaccines.autism  POST: Does most scientific evidence show vaccines cause autism or not
vaccines.risk  POST: SUMMARY: Health benefits of vaccinations outweigh risks
violence.justified  PRE: Justified to use violence
vote.pres.str  POST: Preference strong for Presidential candidate for whom R vote
vote.when.decide  POST: How long before election R made decision Presidential vote [coded]
votes.accurate  PRE: Votes counted accurately
votes.faircount  POST: How often are votes counted fairly
voting.duty.choice  PRE: SUMMARY: Voting as duty or choice
voting.felons  PRE: SUMMARY: Favor/oppose allowing felons to vote
voting.id  PRE: SUMMARY: Favor/oppose requiring ID when voting
voting.mail  PRE: SUMMARY: Favor/oppose vote by mail
voting.rts.denied  PRE: How often people denied right to vote
whenvote2020  POST: How long was wait time at polling place
whites.revdiscrim  POST: How likely whites unable to find jobs because employers hiring minorities
wom.complain.prob  POST: Do women complaining about discrimination cause more problems
wom.control.men  PRE: Women seek to gain power by getting control over men
wom.equal.spfav  POST: Do women demanding equality seek special favors
wom.interp.sexist  PRE: Women interpret innocent remarks as sexist
women.stay.home  POST: SUMMARY: Better/worse if man works and woman takes care of home
work.employer  PRE: Describe R’s employment
work.hoursweek  PRE: How many hours R worked per week
work.lastweek  PRE: R worked for pay last week
work.mom.bond  POST: SUMMARY: Easier/harder for working mother to bond with child
work.status  PRE: SUMMARY: R occupation status 1 digit
world.like.usa  POST: Better if rest of world more like America
world.temp.rising  POST: Have world temperatures have risen on average or last 100 years or not
wt  Full sample pre-election weight
wt.post  Full sample post-election weight
printC

Source

2020 American National Election Survey. See Appendix of printed textbook for further information

Description

Prints table or summary of results to a .html file in local working directory. Converting Console format tables to .html tables helps users quickly create publication- and presentation-ready tables. The .html file's name is displayed as Console message. Current date added to Table.Output.html file name to keep output organized. You can print output directly from Companion functions using printC=TRUE argument (where available).

Usage

printC(objx, file)

Arguments

objx A table or data frame. The table must be html-ready, not all Console output is organized in tables. If objx is not a html-ready table, printC will write it as preformatted text to the .html file in the working directory.

file (Optional) The path/file name for .html output. If not specified, function will output to .html file in your working directory.

Value

No return to R. The formatted objx is outputted to a .html file in working directory.

Textbook Reference


Examples

library(RCPA3)

eexample.table <- freqC(x=world$vdem.4cat, plot=FALSE)
# running printC will generate a .html file in your working directory

printC(example.table, file=tempfile(fileext = ".html"))
regC

Linear regression analysis (OLS regression), with options for weighted observations, diagnostic tests, and plots of residuals

Description

Linear regression analysis function with many useful features. Standard output of results includes table of coefficients, table of residuals, and additional model information. Options for weighting observations, analysis of variance (ANOVA), performing post-estimation diagnostic tests, including testing normality of residuals and constant variance, and generating diagnostic plots of residuals.

Usage

regC(formula, w, data, digits = 3, anova = FALSE, norm.test = FALSE, ncv.test = FALSE, linear.test = FALSE, reset.test = FALSE, outlier.test = FALSE, vif = FALSE, printC = FALSE, res.plots = FALSE, ...)

Arguments

formula should be in dataset$dv ~ dataset$iv1 + dataset$iv2 unless dataset specified in optional data argument. If weights are specified using w argument, the formula cannot contain functions or logical statements (all variables in the function must be named in the dataset).

w (Optional) Sampling weights of variable, must be numeric; should be in dataset$weightvar form unless dataset specified in optional data argument.

data (Optional) Name of dataset that contains dv, iv (and w) variables.
digits (Optional) Number of decimal places reported in result (defaults to 2).
anova (Optional) Do you want ANOVA table reporting F-test for all predictors? (default: FALSE)
norm.test (Optional) Test assumption that regression residuals follow normal distribution (default: FALSE)
cnv.test (Optional) Test assumption that regression residuals have constant variance (default: FALSE)
linear.test (Optional) Report results of linearity test? (default: FALSE)
reset.test (Optional) Report results of model specification test? (default: FALSE)
outlier.test (Optional) Test whether outlier observations have outsized leverage on results (default: FALSE)
vif (Optional) Report variance inflation factors to assess multicollinearity? (default: FALSE)

printC (Optional) Do you want to print tables of results (and residuals plots if res.plots=TRUE) to .html file in working directory? (default: FALSE)

res.plots (Optional)

... (Optional) Additional arguments passed to lm function (unweighted models) or svyglm function (weighted models).
sampdistC

**Value**

Returns a lm or svyglm object.

**Textbook References**


**Online Resources**

- R Tutorials & Resources for Correlation and Bivariate Regression, Multiple Regression, and Analyzing Regression Residuals, compiled by Barry C. Edwards.
- Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.
- Political Science Data Web Site: Find datasets for your own research and resources to help with the analysis.

**Examples**

```r
library(RCPA3)

# basic usage
regC(states$vep20.turnout ~ states$hs.or.more)

# with w and data arguments
regC(nes$ft.unions ~ nes$ft.dem, w=nes$wt)

# multiple IV with some post-estimation tests
regC(peace.index ~ vdem.edi.score + hdi, data=world, norm.test=TRUE, ncv.test=TRUE)
```

---

**Description**

Visualize expected sampling distributions for sample statistics. You can plot the probability and cumulative density functions for statistics based on either the normal distribution or a t-distribution. The `sampdistC` function also generates the confidence interval (default 95%) for a sample statistic which is useful for obtaining the CI of a summary statistic (when you're not estimating it from the dataset yourself).
Usage

sampdistC(stat, se, t.df, plot.cdf = FALSE, ci = 95, digits = 3, printC = FALSE)

Arguments

stat  A numeric statistic, the point estimate of a parameter based on a sample of observations, like a sample mean or a sample proportion.
se    The standard error of the statistic, must be a positive number.
t.df  (Optional) If critical values for sampling distribution should be based on t-distribution (generally true when statistic is a mean), set t.df to the number of degrees of freedom (typically n-1).
plot.cdf  (Optional) Do you want to plot the cumulative density function? Default = FALSE (for probability density function).
ci    (Optional) Specify desired confidence level for confidence interval as a percentage. Set ci=FALSE to suppress CI table (default: 95)
digits  (Optional) Number of digits after decimal to display in CI table (default: 3)
printC  (Optional) Do you want to sampling distribution plot to .html file in working directory? (default: FALSE)

Value

None (makes a plot)

Textbook References


Online Resources

• R Tutorials & Resources for Foundations of Inference, Compiled by Barry C. Edwards
• Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.
• Political Science Data Web Site: Find datasets for your own research and resources to help with the analysis.

Examples

library(RCPA3)

# based on normal distributions
sortC

```r
sampdistC(stat=10, se=1)
sampdistC(stat=10, se=1, plot.cdf=TRUE)

# based on t-distribution with 15 degrees of freedom
sampdistC(stat=8, se=2, t.df=15)
sampdistC(stat=8, se=2, t.df=15, plot.cdf=TRUE)
```

---

### sortC

*Sorts dataset observations by user-defined criteria to return case-level information*

---

**Description**

Returns case-level information in order specified by user. You can sort by additional criteria to break ties. Useful for learning about units of analysis and selecting cases for qualitative research designs.

**Usage**

```r
sortC(id, by, data, thenby, descending = TRUE, limit, confirm = TRUE, printC = FALSE)
```

**Arguments**

- **id**: A variable in the dataset (data) that identifies individual cases, typically the name of states, countries, etc.
- **by**: Variable the cases should be sorted by.
- **data**: (Optional) Dataset to be sorted.
- **thenby**: (Optional) Criteria for sorting cases after sorting with the "by" variable. Useful if many cases tied on first criteria.
- **descending**: (Optional) Should the cases be sorted in descending order? By default, set to TRUE. When sorting ordered factors, check that the levels higher numerically correspond to the sort order you have in mind.
- **limit**: (Optional) The number of rows to report. If there are many observations to be sorted, you may want to limit output to 5, 10, etc. rows.
- **confirm**: (Optional) If function is going to return long table of results (more than 20 rows), you'll be asked for confirmation (use `confirm=F` to bypass).
- **printC**: (Optional) Do you want to print table of sorted observations to to .html file in working directory? (default: FALSE)

**Value**

A data frame of sorted observations.
Textbook References


Online Resources

- *R Tutorials & Resources for Descriptive Statistics*, compiled by Barry C. Edwards
- *Sage Edge Resources for Political Analysis Series*, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.
- *Political Science Data Web Site*: Find datasets for your own research and resources to help with the analysis.

Examples

```r
library(RCPA3)

# basic usage
sortC(id=state, by=abortlaws, data=states)

# options to limit results and sort in ascending order
sortC(id=country, by=gini.index, descending=FALSE, limit=10, data=world)

# sort by and then by
sortC(id=country, by=vdem.4cat, thenby=gini.index, descending=c(FALSE, FALSE),
      data=world, confirm=FALSE)
sortC(id=country, by=vdem.4cat, thenby=gini.index, descending=c(FALSE, TRUE),
      data=world, confirm=FALSE)
```

---

**states**

*States dataset for R Companion to Political Analysis, Third Edition*

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

```r
states
```
Format

A data frame with 50 rows and 149 variables.

- **abortion.rate**: Number of abortions per 1000 women 15-44, 2008
- **abortlaws**: Number of restrictions on abortion
- **abortlaws.3cat**: Restrictiveness of state abortion laws, 3 ordinal categories
- **adv.or.more**: Percentage of 25+ population with graduate or professional degree
- **alcohol**: Alcohol consumption (gal/capita) 2007
- **attend.pct**: Percentage freq attend relig serv (Pew)
- **ba.or.more**: Percentage of 25+ population with bachelor’s degree or more
- **battleground2020**: Battleground in 2020 election?
- **biden2020**: Two-party vote share for Biden in 2020 election
- **biden2020.ev**: Electoral College votes for Biden in 2020 election
- **biz.tax.rank**: State business tax climate ranking
- **biz.tax.score**: State business tax climate rating
- **black.percent**: Percentage of population black or African American
- **black.stateleg**: Percent of state legislators who are African American
- **brady.rank**: Brady Campaign ranking
- **brady.score**: Brady Campaign score
- **broadband**: Percentage of households with broadband Internet subscription
- **carfatal**: Motor vehicle fatalities (per 100,000 pop)
- **carfatal07**: Motor vehicle fatalities per 100,000 pop (2007)
- **cig.tax**: Cigarette tax per pack
- **cig.tax.3cat**: Cigarette tax per pack, 3 ordinal categories
- **cigarettes**: Packs bimonthly per adult pop
- **citizen.ideology**: Citizen ideology index
- **clinton2016**: Vote share for Clinton in 2016 election
- **cong.dem**: Percentage of state’s 2020 congressional delegation that is Democratic
- **cook.index**: Higher scores more Dem
- **cook.index3**: 3 quantiles of cook_index
- **corrections.incarc.rate**: Population incarcerated per 100,000 state residents
- **corrections.total.rate**: Population under correctional supervision per 100,000 state residents
- **covid.cases**: COVID cases (as of June 2021)
- **covid.cases.per1000**: COVID cases per 1,000 persons (as of June 2021)
- **covid.deaths**: COVID deaths (as of June 2021)
- **covid.deaths.per1000**: COVID deaths per 1,000 persons (as of June 2021)
- **covid.response.max**: Maximum of COVID response stringency index
- **covid.response.mean**: Mean of COVID response stringency index
covid.vaccinated  Percentage of population fully vaccinated against COVID (as of June 2021)
crime.rate.burglary  Burglary rate, per 100,000 population
crime.rate.murder  Murder and non-negligent manslaughter rate, per 100,000 population
crime.rate.property  Property crime rates, per 100,000 population
crime.rate.violent  Violent crime rate, per 100,000 population
deathpen.executions  Executions since 1976
deathpen.exonerations  Death penalty exonerations since 1973
deathpen.status  Does state retain death penalty?
defexpen  Federal defense expenditures per capita
dem.stateleg  Percent of state legislators who are Democrats
density  Population per square mile
division  Census division
drug.death.rate  Drug overdose death rate per 100,000 adults
earmarks.pcap  Earmarks per capita (in dollars)
foreign.born  Percentage of population born outside the United States
gay.policy  Billman’s policy scale
gay.policy2  RECODE of gay_policy (Billman’s policy scale)
gay.policy.con  Does state have ’most conservative’ gay policies?
gay.support  Lax-Phillips opinion index
gay.support3  Gay rights: public support
giffords.grade  Letter grade of state’s gun control laws, from Giffords Law Center
giffords.rank  Ranking of state’s gun control laws, from Giffords Law Center
gini.2016  GINI index score
gini.rank.2016  Income equality ranking
govt.worker  Precentage workforce government workers (2012)
gun.bgchecks  Background checks per 100,000 pop (2012)
gun.dealers  Gun dealers per 100,000 pop
gun.deaths.100k  Gun deaths per 100k
gun.murders  Gun murder rate (2010)
gunlaws  Number of state gun control laws
gunlaws.3cat  Number of state gun control laws, 3 ordinal categories
gunsammo.rank  Ranking of best states for gun owners
hh.income  Median household income (dollars)
hispanic.percent  Percentage of population Hispanic or Latino (of any race)
hispanic.stateleg  Percent of state legislators who are Hispanic/Latino
hr.nominate.mean  Mean NOMINATE score of state’s House delegation
hs.or.more  Percentage of 25+ population attained at least high school diploma or equivalent
<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>hs.yrs.ss</td>
<td>Years of social studies required to graduate high school</td>
</tr>
<tr>
<td>infant.mortality</td>
<td>Number of infant deaths per 1,000 live births</td>
</tr>
<tr>
<td>judge.selection</td>
<td>Method used to select appellate court judges</td>
</tr>
<tr>
<td>judges.elected</td>
<td>Does state elect appellate court judges?</td>
</tr>
<tr>
<td>land.area</td>
<td>Size of state in square miles</td>
</tr>
<tr>
<td>legalclimate</td>
<td>State legal climate rating 2015</td>
</tr>
<tr>
<td>legalclimate.rank</td>
<td>State legal climate ranking 2015</td>
</tr>
<tr>
<td>legis.conservatism</td>
<td>Rating of conservatism of state legislature</td>
</tr>
<tr>
<td>legis.prof.rank</td>
<td>State legislative professionalism rank for 2015</td>
</tr>
<tr>
<td>legis.prof.score</td>
<td>State legislative professionalism score for 2015</td>
</tr>
<tr>
<td>lgbtq.equality.3cat</td>
<td>Ordinal ranking of state policies for LGBTQ equality</td>
</tr>
<tr>
<td>lgbtq.equality.laws</td>
<td>Number of laws passed that advance LGBTQ equality</td>
</tr>
<tr>
<td>median.age</td>
<td>Median age (years)</td>
</tr>
<tr>
<td>medicaid.expansion</td>
<td>State action on Medicaid expansion pursuant to ACA</td>
</tr>
<tr>
<td>min.wage</td>
<td>State minimum wage</td>
</tr>
<tr>
<td>obesity.percent</td>
<td>Percentage of adults with a body mass index of 30.0 or higher</td>
</tr>
<tr>
<td>opioid.rx.rate</td>
<td>Retail opioid prescriptions dispensed per 100 persons</td>
</tr>
<tr>
<td>over64</td>
<td>Percentage of population 65 years and over</td>
</tr>
<tr>
<td>polarization.house</td>
<td>Polarization in State Legislatures, Lower chambers</td>
</tr>
<tr>
<td>polarization.senate</td>
<td>Polarization in State Legislatures, Upper chambers</td>
</tr>
<tr>
<td>policy.innovation.rate</td>
<td>Policy adoption rate score</td>
</tr>
<tr>
<td>pop2016</td>
<td>State population, 2016 (in 100k)</td>
</tr>
<tr>
<td>pop.18.24</td>
<td>Percentage of population 18 to 24 years old</td>
</tr>
<tr>
<td>population</td>
<td>State population in 2020</td>
</tr>
<tr>
<td>population.change</td>
<td>Percentage increase/decrease in population from 2010 to 2020</td>
</tr>
<tr>
<td>pot.policy</td>
<td>State marijuana laws in 2017</td>
</tr>
<tr>
<td>poverty.rate</td>
<td>Percentage of people in poverty</td>
</tr>
<tr>
<td>prcapinc</td>
<td>Per capita income</td>
</tr>
<tr>
<td>preg.teen.rate</td>
<td>Number of pregnancies per 1,000 women aged 15-19</td>
</tr>
<tr>
<td>preg.uninten.rate</td>
<td>Unintended pregnancy rate per 1,000 women 15-44</td>
</tr>
<tr>
<td>prochoice.percent</td>
<td>Percentage of adults who say abortion should be legal in all/most cases</td>
</tr>
<tr>
<td>public.conservative</td>
<td>Percentage adults self-identifying as conservative</td>
</tr>
<tr>
<td>public.liberal</td>
<td>Percentage adults self-identifying as liberal</td>
</tr>
<tr>
<td>public.moderate</td>
<td>Percentage adults self-identifying as moderate</td>
</tr>
<tr>
<td>region</td>
<td>Census region</td>
</tr>
<tr>
<td>relig.Cath</td>
<td>Percentage Catholic (2012)</td>
</tr>
<tr>
<td>relig.Prot</td>
<td>Percentage Protestant (2012)</td>
</tr>
</tbody>
</table>
relig.high  Percentage high religiosity (2012)
relig.import  Percent religion "A great deal of guidance"
relig.import.2016  Overall index of religiosity
relig.low  Percentage low religiosity (2012)
religiosity  Relig observance-belief scale (Pew)
religiosity3  Religiosity
rtw  Right to work state?
schools.avg.salary  Average salary of public school teachers
school.spend  Expenditure per student in average daily attendance
school.st.ratio  Students enrolled per teacher
secularism  Secularism scale (Pew)
secularism3  3 quantiles of secularism
smokers  Data_Value
south  Southern state?
speak.english.only  Percentage of population that only speaks English
state  State Name
state.govt.rank  Overall quality of state government administrative functions
stateid  Two-letter abbreviation of state name
suicide.rate  Number of deaths due to intentional self-harm per 100,000 population
tax.source  State’s primary revenue source
term.limits  Does state have term limits for legislators?
trump2016  Vote share for Trump in 2016 election
trump2016.ev  Electoral College votes for Trump in 2016 election
trump2020  Two-party vote share for Trump in 2020 election
trump2020.ev  Electoral college votes for Trump in 2020 election
turnout.20vs16  Difference in voter turnout in 2020 compared to 2016
under18  Percentage of population under age 18
unemployment  State unemployment rate
uninsured  No health insurance coverage
unionized  Percent of workers who are union members
unionized.4cat  Ordinal-level measurement of state’s percentage union membership
urban  Percent urban population
vep16.turnout  Percent turnout of voting eligible population in 2016
vep18.turnout  Percent turnout of voting eligible population in 2018
vep20.turnout  Percent turnout of voting eligible population in 2020
volunteer.hrs.pc  Volunteer hours per resident
volunteer.rate  Volunteer rate
voter.id.law  Voter identification law in effect in 2017
white.percent  Percentage of population white
women.stateleg  Percent of state legislators who are women
Source
Data sources vary. See Appendix of printed textbook for further information.

testmeansC  

One and two-sample difference of means tests (t-tests) with confidence intervals.

Description
Conducts one and two-sample difference of means tests (t-tests). Options for weighting observations, known population standard deviation, equal or unequal variances, paired observations.

Usage
testmeansC(x1, x2, w, data, dv, iv, digits = 2, var.equal = FALSE, paired = FALSE, pop.sd = FALSE, var.test = FALSE, printC = FALSE, ci.table = TRUE, ci.level = 95, ci.plot = TRUE, main, xlab, xlim, ...)

Arguments
x1  The first variable to be compared (mean of x1 will be compared to mean of x2). Must be numeric variable. Should be in the form dataset$var, unless dataset specified with data argument.

x2  The variable (or number) to which x1 is compared. Should be in the form dataset$var, unless dataset specified with data argument. You can set x2 equal to a number to conduct a one sample means test. For example, to test whether x1 could have population mean of 50, you’d set x2 = 50.

w  (Optional) Weights variable (optional). Should be in the form dataset$var, unless dataset specified with data argument.

data  (Optional) The dataset that contains x1, x1 and x2, or dv and iv.

dv  The dependent variable. Must be numeric variable. Should be in the form dataset$var, unless dataset specified with data argument.

iv  The independent variable. Should have two distinct values (like treatment and control). Should be in the form dataset$var, unless dataset specified with data argument.

digits  (Optional) Number of digits to report after decimal place, optional (default: 3).

var.equal  (Optional) With two-sample tests, do you want to assume equal variances? (default: FALSE)

paired  (Optional) With two-sample tests, are the observations paired? (default: FALSE)

pop.sd  (Optional) If the population standard deviation is known, you can specify it.

var.test  (Optional) If set to TRUE, will test the assumption that two sample variance are equal using an F test. Default is FALSE. The var.test option implemented for both weighted and unweighted analysis. If you are not using sample weights, you can supplement this F test with additional tests such as stats::bartlett.test and car::leveneTest.
printC  (Optional) Do you want results printed to .html file in your working directory? Default is FALSE. Set to TRUE to print results.

ci.table  (Optional) Confidence level for calculating the confidence interval of the difference of means, defaults to 95. Set to F or FALSE to omit confidence interval from results.

ci.level  (Optional) Desired confidence level, as percentage (default: 95)

ci.plot  (Optional) Do you want a plot of the confidence interval of the difference of means? (default: TRUE)

main  (Optional) Main title for plot of confidence interval of difference

xlab  (Optional) Label for x-axis of plot of confidence interval of difference

xlim  (Optional) A vector (of length 2) specifying the range of the x-axis, useful to zoom in on CI.

...  (Optional) Additional arguments passed to plot function for the CI plot

Value

No return

Textbook References


Online Resources

• R Tutorials & Resources for Hypothesis Tests with One and Two Samples, Compiled by Barry C. Edwards

• Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.

• Political Science Data Web Site, find datasets for your own research and resources to help with the analysis.

Examples

library(RCPA3)

testmeansC(x1=world$literacy, x2=80)

testmeansC(x1=ft.trump.post, x2=ft.pence.post, w=wt, data=nes)

# with paired x1 and x2
testpropsC

Tests the difference between two sample proportions, or difference between sample proportion and hypothesized value, with options for weighted observations, confidence intervals

Description

Difference of proportions test with optional sample weights. Reports P-value of two-tailed significance test. Currently limited to testing one response from one dataset. If you want to compare x1 from dataset1 and x2 from dataset2, you can create new dataframe to test as dv ~ iv where dv is vector of x1 and x2 values and iv is vector identifying the source (i.e. dataset1 and dataset2). If you want to compare different responses, such as "Yes" value for x1 and "Agree" value for x2, you will need to transform one of the variables so they have comparable response values.

Usage

testpropsC(x1, x2, w, data, dv, iv, digits = 3, response, printC = FALSE, ci.table = TRUE, ci.level = 95, ci.plot = TRUE, main, xlab, xlim, ...)

Arguments

x1 A categorical variable
x2 Value or variable to compare x1 against.
w (Optional) Weights variable.
data (Optional) Specify name of dataset (data frame) with x1 and x2 variables (or dv and iv).
dv Dependent variable
iv Independent variable, should have only two unique values. For comparison purposes, group1 will be first level of iv and group2 will be the second level of iv. To change order of groups, you can modify levels(iv).
digits (Optional) Number of digits to report after decimal place, optional (default: 3).
response (Optional) Identify the response value you wish to compare. If not specified, the function will compare first value of the dv (or x1 variable). If you want to group multiple responses together, use transformC to make dummy variable.
printC (Optional) Do you want results printed to .html file in your working directory? Default is FALSE. Set to TRUE to print results.
ci.table (Optional) Do you want a table reporting confidence interval of the difference of proportions? (default: TRUE)
ci.level (Optional) Desired confidence level, as percentage (default: 95)
ci.plot (Optional) Do you want a plot of the confidence interval of the difference of proportions? (default: TRUE)
main (Optional) Main title for plot of confidence interval of difference
xlab (Optional) Label for x-axis of plot of confidence interval of difference
xlim (Optional) A vector (of length 2) specifying the range of the x-axis, useful to zoom in on CI. By default, xlim=c(-1,1).
... (Optional) Additional arguments passed to plot function for the CI plot

Value
No return

Textbook References

Online Resources
- R Tutorials & Resources for Hypothesis Tests with One and Two Samples, Compiled by Barry C. Edwards
- Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.
- Political Science Data Web Site: Find datasets for your own research and resources to help with the analysis.

Examples
library(RCPA3)

# one sample test: x1 variable against hypothesized value (of x2)
testpropsC(x1=nes$gun.bg.checks, x2=.500, w=nes$wt, response="1. Favor a great deal", xlim=c(0, .2))

# two sample test x1 versus x2
testpropsC(x1=approve.local.covid, x2=approve.pres.covid, w=wt, data=nes, response="1. Approve strongly", xlim=c(0, .2))

# test of proportions dv by iv
testpropsC(dv=marital, iv=gender, w=wt, data=nes, response="3. Widowed", xlim=c(-.18, 0))
transformC

Returns new variables by transforming existing dataset variables (e.g. dummy variables, standardized variables, rank orders)

Description

Given a variable x, the transformC function generates and returns a transformed version of x. For example, transformC can take a variable x and return standardized x, or the log of x.

Usage

transformC(type, x, data, response, cutpoints, groups, confirm = TRUE, ...)

Arguments

type
The type of transformation to be made to x. Options include:

- "center"
- "cut" use cutpoints or groups arguments to control cuts
- "dummy" use response argument to identify values of x which should be coded 1 (all other non-missing responses will be coded 0)
- "dummy.set"
- "ln"
- "log10"
- "percent.rank"
- "rank"
- "whole"
- "z"

x
The variable to be transformed, a variable that already exists, should be in dataset$var form unless dataset specified in optional data argument.

data (Optional) Name of dataset that contains x variable.

response (Optional) For type="dummy", response is the value or vector of values to be coded 1.

cutpoints (Optional) For type="cut", a vector of values to serve as lower bounds of ranked categories for transformed x variable.

groups (Optional) For type="cut", the number of (approximately) same sized groups to create based on x values.

confirm (Optional) By default, transformC will ask you to confirm you want transformed variable returned (to prevent data loss). Set confirm=FALSE to bypass this check.

... (Optional) Additional arguments pass to cut2 (for type="cut").

Value

A transformed version of x variable, a vector with the same length as x, unless type="dummy.set" in which case transformC returns a data.frame.
Textbook References


Online Resources

- R Tutorials & Resources for Creating and Transforming Variables, Compiled by Barry C. Edwards
- Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.
- Political Science Data Web Site: Find datasets for your own research and resources to help with the analysis.

Examples

```r
library(RCPA3)

# don't use confirm=FALSE until you've tested the function call
transformC("percent.rank", nes$ft.dem, confirm=FALSE)
transformC("rank", nes$ft.dem, confirm=FALSE)
transformC("whole", runif(min=0,max=100,n=20), confirm=FALSE)
```

welcome  Welcomes new users to package with basic information, option to reset user’s working environment

Description

Welcomes users to RCPA3 package for *An R Companion to Political Analysis, 3rd Edition* and provides basic information about using Companion functions and datasets.

Usage

```r
welcome(reset = FALSE)
```

Arguments

- reset  (Optional) Do you want to remove objects from your workspace and restore default graphical parameters? Default is FALSE. Removing workspace objects and restoring default graphical parameters can help undo some unintended side-effects of past work.

Value

No value returned
**Textbook Reference**


**Online Resources**

- R Tutorials & Resources for Getting Started with R, Compiled by Barry C. Edwards
- Sage Edge Resources for Political Analysis Series, for streaming videos, flashcards, and more student resources for textbooks by Pollock and Edwards, from Sage Publications.

**Examples**

```r
library(RCPA3)

# Welcome message from RCPA3 package.
## Not run:
welcome()
## End(Not run)
```

---

**widgetFactory**  
*An interactive game to practice using R functions.*

**Description**

A fun, interactive game to practice using R functions. Players must execute functions to make widgets per strict specifications to win the game. The Widget Factory needs your help!

**Usage**

```r
widgetFactory()
```

**Value**

No value returned

**Textbook Reference**


**Online Resource**

- Tutorials & Resources for Using R for Data Analysis, compiled by Barry C. Edwards
Examples

library(RCPA3)

# Play the Widget Factory game
## Not run:
widgetFactory()

## End(Not run)

world

World dataset for R Companion to Political Analysis, Third Edition

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 169 rows and 206 variables.

arda.code Country numerical code
bribe.judge Prevalence of bribing judges
bribe.police Prevalence of bribing police
broadband Broadband subscription per 100 people
business.starts Number of new corporations registered annually
cabbr Three-letter abbreviation of country name
carbon.footprint National carbon footprint
ccode Numeric country code based on the ISO-3166-1 standard
ciaedex Percent of GDP spent on education
ciagdpag Composition of GDP: Agricultural sector
ciagdpin Composition of GDP: Industrial sector
ciagdpstsv Composition of GDP: Service sector
civil.war Civil war intensity
c02.percap Carbon dioxide emissions per capita
colony Colony of what country?
compulsory.voting Does country require citizens to vote?
confidence Confidence in institutions scale
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>conflict.index</td>
<td>Level of violent conflict in country</td>
</tr>
<tr>
<td>conflict.internal</td>
<td>Number of internal conflict without foreign invention</td>
</tr>
<tr>
<td>conflict.internat</td>
<td>Number of internal conflict with foreign invention</td>
</tr>
<tr>
<td>corp.tax.rate</td>
<td>Corporate tax rate</td>
</tr>
<tr>
<td>corrupt.perception</td>
<td>Corruption perception index</td>
</tr>
<tr>
<td>country</td>
<td>Country/territory name</td>
</tr>
<tr>
<td>coup.attempts</td>
<td>Number of attempted coups d’etat since 1950</td>
</tr>
<tr>
<td>coups</td>
<td>Number of successful coups d’etat since 1950</td>
</tr>
<tr>
<td>covid.cases.permil</td>
<td>Total COVID cases per million</td>
</tr>
<tr>
<td>covid.deaths.per.million</td>
<td>Total COVID deaths per million</td>
</tr>
<tr>
<td>covid.response.max</td>
<td>Maximum of COVID response stringency index</td>
</tr>
<tr>
<td>covid.response.mean</td>
<td>Mean of COVID response stringency index</td>
</tr>
<tr>
<td>covid.vaccinated</td>
<td>Percentage of population fully vaccinated against COVID</td>
</tr>
<tr>
<td>death.penalty.status</td>
<td>Legal status of death penalty</td>
</tr>
<tr>
<td>debt.percent.gdp</td>
<td>Public debt as a percentage of GDP</td>
</tr>
<tr>
<td>dem.other</td>
<td>Percentage of other democracies in region</td>
</tr>
<tr>
<td>dem.other5</td>
<td>Percentage of other democracies in region</td>
</tr>
<tr>
<td>district.size3</td>
<td>Average number of members per district</td>
</tr>
<tr>
<td>dnpp.3</td>
<td>Effective number of parliamentary parties</td>
</tr>
<tr>
<td>dpi.cemo</td>
<td>Is chief executive a military officer?</td>
</tr>
<tr>
<td>dpi.system</td>
<td>National political system</td>
</tr>
<tr>
<td>durable</td>
<td>Number of years since the last regime transition</td>
</tr>
<tr>
<td>eco.footprint</td>
<td>Total ecological footprint</td>
</tr>
<tr>
<td>econ.compete</td>
<td>Global economic competitiveness</td>
</tr>
<tr>
<td>econ.freedom</td>
<td>Rating of overall economic freedom</td>
</tr>
<tr>
<td>econ.freedom.5cat</td>
<td>Rating of overall economic freedom, 5 ordinal categories</td>
</tr>
<tr>
<td>educ.f.avgyrs</td>
<td>Average Schooling Years, Female</td>
</tr>
<tr>
<td>educ.f.none</td>
<td>Percentage of Females with No Schooling</td>
</tr>
<tr>
<td>educ.m.avgyrs</td>
<td>Average Schooling Years, Male</td>
</tr>
<tr>
<td>educ.m.none</td>
<td>Percentage of Males with No Schooling</td>
</tr>
<tr>
<td>educ.quality</td>
<td>Average rating of quality of educational system</td>
</tr>
<tr>
<td>effectiveness</td>
<td>Government effectiveness scale</td>
</tr>
<tr>
<td>eiu.democ.4cat</td>
<td>Level of democracy, 4 ordinal categories</td>
</tr>
<tr>
<td>eiu.democ.bin</td>
<td>Is country a democracy?</td>
</tr>
<tr>
<td>eiu.democ.score</td>
<td>Rating of democracy</td>
</tr>
<tr>
<td>election.integrity</td>
<td>Integrity of country’s electoral system</td>
</tr>
<tr>
<td>election.violence.post</td>
<td>Were there riots and protest after election?</td>
</tr>
</tbody>
</table>
election.violence.pre  Were there riots and protest before election?
energy.renew.percent  Percentage of country's energy that is non-fossil fuel
enpp3.democ  Effective number of parliamentary parties
enpp3.democ08  Effective number of parliamentary parties
enpp.3  Effective number of parliamentary parties
envir.treaty  Number of environmental treaties agreed to
eu  EU member state
fdi.inflow  Inflow of foreign direct investment (in millions of US dollars)
fertility  Number children born per woman
fh.democ.3cat  Rating of democracy, 3 ordinal categories
fh.democ.score  Freedom House rating of democracy
fh.internet.3cat  Level of Internet freedom in country, 3 ordinal categories
fh.internet.score  Measure of Internet freedom
frac.eth  Ethnic factionalization
frac.eth2  Ethnic factionalization
frac.eth3  Ethnic factionalization
frac.lang  Language factionalization
frac.relig  Religious factionalization
gas.production  Gas production (in millions of barrels of oil equivalent)
gdp.growth  Annual economic growth rate
gdp.percap  Gross domestic product per capita (in U.S. dollars)
gdp.percap.5cat  Gross domestic product per person, 5 ordinal categories
genner.equal3  Gender empowerment
genner.inequality  Index of gender inequality
gini.index  GINI index (of income inequality)
global.social  Social globalization
govt.help.cap  Capacity of state to provide for needy citizens
govt.integrity  Rating of government integrity
govt.per.gdp  Government spending (all types) as a percentage of GDP
govt.quality  The quality of government
gri  Index of government restrictions on religion
grp.name  Name of government preferred religion
grp.score  Index of government religious preference
happiness  Average happiness in country
hdi  Human development index
hiv.percent  Percentage of population aged 15-49 with HIV
homicide.rate  Intentional homicides per 100,000 persons
**hospital.beds**  Number of hospital beds per thousand people
**human.flight**  Human flight and brain drain from country
**icc.treaty.ratified**  Has country ratified treaty for International Criminal Court?
**immigrants.percent**  Percentage of population born in another county
**imprisonment.rate**  Number incarcerated per 100,000 persons
**income.tax.rate**  Income tax rate
**indep.judiciary**  Does country have an independent judiciary?
**indy**  Year of independence
**infant.mortality**  Number infants dying before age one per 1,000 live births
**inflation**  Annual inflation rate
**internet.users**  Percentage of population that uses the Internet
**judicial.effectiveness**  Rating of effectiveness of country’s judiciary
**judicial.indep.wef**  Average rating of judicial independence
**laws.protect.prop**  Legal protections for private property rights
**legal.origin**  Legal origin of commercial code of country
**legal.quality**  Measure of quality of country’s legal institutions
**life.expectancy**  Life expectancy at birth
**lifeex.f**  Life expectancy at birth among females
**lifeex.m**  Life expectancy at birth among males
**literacy**  Literacy rate
**media.access.cand**  Does country provide free or subsidized media access for political candidates?
**media.access.parties**  Does country provide free or subsidized media access for political parties?
**median.age**  Median age in years
**migration.net**  Net migration
**muslim**  Are Muslims predominant religious group?
**ocean.health**  Measure of health of oceans adjacent to country
**oecd**  OECD member state?
**oil**  Oil production, in barrels per day
**oil.production**  Oil production, in metric tons
**organized.crime**  Impact of organized crime on the economy
**peace.5cat**  Peacefulness of country, 5 ordinal categories
**peace.index**  Peacefulness of country
**pmat12.3**  Post-materialism
**pol.terror.scale.ai**  Political terror scale
**pol.terror.scale.hrw**  Political terror scale
**polity.score**  Rating of democracy
**pop.0.14**  Percentage of population age 0-14
pop.15.64 Percentage of population age 15-64
pop.65.older Percent of population age 65 and older
pop.growth Percentage population growth/decline annually
pop.urban Percentage of the population living in urban areas
population Size of national population
population.3cat Size of national population, 3 ordinal categories
population.density Number of people per square kilometer
poverty Percentage of the population below the poverty line
pr.sys Proportional representation system?
press.freedom.fl Freedom of the country’s press
press.freedom.rsf Freedom of the country’s press
protact3 Protest activity
refugees.from Refugees from the country who live in other countries
refugees.impact Impact of population displacement on country
refugees.in Refugees from other countries in the country
regime.type3 Regime type
region Region name
regionun United Nations region
religion Largest religion by proportion
reserved.seats Does country reserve seats in national legislature for any group?
rights.assn Freedom of assembly and association
rights.dommov Freedom of domestic movement
rights.formov Freedom of foreign movement
rights.injud Independence of the judiciary
rights.law.index Measure of violations of human right and rule of law
rights.relfree Freedom of Religion
rights.speech Freedom of speech
rights.treaties Number of international human rights treaties ratified
rights.weccon Women’s economic rights
rights.wopol Women’s political rights
rights.worker Worker’s rights
schools.internet Average rating of internet availability in schools
self.employed Percentage of labor force that is self-employed
sexratio Sex ratio at birth
shi Social hostility toward religion
soldiers.percent Percentage of labor force in the military
soldiers.total Total number of people in the military
spendeduc  Public expenditure on education as a percentage of GDP
spendhealth  Public expenditure on health as a percentage of GDP
spendmil.wdi  Public expenditure on the military as a percentage of GDP
tariff.rate  Tariff rate on imports
taxes.percent.gdp  Taxes (all forms) as a percentage of GDP
terror.index.voh  Impact of terrorism on the county
trade.percent.gdp  International trade as percentage of GDP
typerel  Predominant religion
unemployment  Percentage of labor force that is unemployed
unexp.rd  Public expenditure on research and development as a percentage of GDP
unfempf  Ratio of female to male formal employment rates
unin.inc  Inequality-adjusted income index
unineduc  Inequality-adjusted education index
unions  Union density
unjourn  Number of verified cases of journalists imprisoned
unlit  Adult literacy rate
unmobocov  Percentage covered by a mobile phone network
unmort.f  Number of adult female deaths per 1,000 females
unmort.m  Number of adult male deaths per 1,000 males
unnewsp  Daily newspapers per thousand people
unnoncom  Death rates from non-communicable diseases
unpop30  Projected 2030 population in millions
unremip  Per capita remittance inflows in US dollars
unremit  Remittance inflows as a percentage of GDP
unsathlt  Percentage satisfied with their personal health
unsat  Overall life satisfaction
unsatf  Overall life satisfaction among females
unsatjob  Percentage satisfied with their job
unsatliv  Percentage satisfied with their standard of living
unseced  Percentage with at least secondary education
vdem.2cat  Is country a democracy or autocracy?
vdem.4cat  Ordinal ranking of democracy, 4 categories
vdem.edi.score  Electoral democracy index
vdem.ldi.score  Liberall democracy index
vi.rel3  Percent saying religion very important
violence.cost  Economic cost of violence on national economy
votevap10s  Turnout of voting age population in 2010s
womenleg  Percent women in lower house of legislature
womyear  Year women first enfranchised
womyear2  Year women first enfranchised
youngleg  Percentage of lower house of legislature aged 40 years or younger
Source

Sources vary. See Appendix of printed textbook for further information.
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