Package ‘RcmdrPlugin.aRnova’

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Type       Package
Title      R Commander Plug-in for Repeated-Measures ANOVA
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Depends    R (>= 3.2.0)
Imports    Rcmdr
Suggests   knitr
Description R Commander plug-in for repeated-measures and mixed-design ('split-plot') ANOVA.
            It adds a new menu entry for repeated measures that allows
to deal with up to three within-subject factors and optionally with
one or several between-subject factors.
            It also provides supplementary options to oneWayAnova() and
multiWayAnova() functions, such as choice of ANOVA type, display of
effect sizes and post hoc analysis for multiWayAnova().

RcmdrModels
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LazyData   yes
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`generalizedLinearModel_`

*Generalized Linear Model*

Description

This is a minor modification of `generalizedLinearModel` where size effects are computed and displayed for logistic regression

Usage

`generalizedLinearModel_()`

See Also

`generalizedLinearModel`

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`Moore`

*Status, Authoritarianism, and Conformity*

Description

The `Moore` data frame has 45 rows and 4 columns. The data are for subjects in a social-psychological experiment, who were faced with manipulated disagreement from a partner of either of low or high status. The subjects could either conform to the partner's judgment or stick with their own judgment.

Usage

`Moore`
Format

This data frame contains the following columns:

- **partner.status** Partner’s status. A factor with levels: high, low.
- **conformity** Number of conforming responses in 40 critical trials.
- **fcategory** F-Scale Categorized. A factor with levels (note levels out of order): high, low, medium.
- **fscore** Authoritarianism: F-Scale score.

Source

Personal communication from J. Moore, Department of Sociology, York University.

References


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**multiWayAnova_**

**Multiway ANOVA**

Description

This is a modification of `rcmdr::multiwayanova()` where supplementary options have been added.

Usage

`multiWayAnova()`

Details

Options:

- 'SS type' type of sum of squared, default: `type = 2`. See Details in `Anova`
- 'Effect size' compute and prints effect size (partial eta squares)
- 'Summary statistics for groups' prints summary statistics for groups formed by all combinations of factors
- 'Pairwise comparisons of means' performs post-hoc Tukey’s HSD test on significant (p < .05) or close to significant (p < 0.1) effects.

On OK, the following operations are carried out:

- Computes ANOVA using `Anova`
- Computes effect sizes (partial eta squared)
• Prints a summary of marginal statistics (count, min, max, mean, ds)
• runs post-hoc analysis on significant or close to significant effects
• Generates an 'extended' dataset (extension .ext) containing additional columns '<factorA.factorB:...>'

that allows differentiate measures from groups or subjects with same factors levels. This 'extended' dataset is useful for plotting means and post-hoc analysis.

Value
None

See Also
anova for the computation of ANOVA

Description
These contrived repeated-measures data are taken from O'Brien and Kaiser (1985). The data are from an imaginary study in which 16 female and male subjects, who are divided into three treatments, are measured at a pretest, posttest, and a follow-up session; during each session, they are measured at five occasions at intervals of one hour. The design, therefore, has two between-subject and two within-subject factors.

The contrasts for the treatment factor are set to \(-2, 1, 1\) and \(0, -1, 1\). The contrasts for the gender factor are set to \texttt{contr.sum}.

Usage
O'BrienKaiser

Format
A data frame with 16 observations on the following 17 variables.
treatment a factor with levels control A B
gender  a factor with levels F M
pre.1 pretest, hour 1
pre.2 pretest, hour 2
pre.3 pretest, hour 3
pre.4 pretest, hour 4
pre.5 pretest, hour 5
post.1 posttest, hour 1
post.2 posttest, hour 2
oneWayAnova_

post.3  posttest, hour 3
post.4  posttest, hour 4
post.5  posttest, hour 5
fup.1   follow-up, hour 1
fup.2   follow-up, hour 2
fup.3   follow-up, hour 3
fup.4   follow-up, hour 4
fup.5   follow-up, hour 5

Source

Examples
OBrienKaiser
contrasts(OBrienKaiser$ treatment)
contrasts(OBrienKaiser$ gender)

oneWayAnova_  One way ANOVA

Description
This is a modification of Rcmdr:: oneWayAnova() where supplementary options have been added.

Usage
oneWayAnova_()

Details
Options:
• 'Effect size' compute and prints effect size (partial eta squared)
• 'Summary statistics for groups' prints summary statistics for groups formed by the
  between subject factor
• 'Pairwise comparisons of means' performs post-hoc Tukey’s HSD test.

On OK, the following operations are carried out:
• Computes ANOVA using aov
• Computes effect sizes (partial eta squared)
• Prints a summary of marginal statistics (count, min, max, mean, ds)
• runs post-hoc analysis
Value

None

See Also

aov for the computation of ANOVA

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Pottery

| Chemical Composition of Pottery |

Description

The data give the chemical composition of ancient pottery found at four sites in Great Britain. They appear in Hand, et al. (1994), and are used to illustrate MANOVA in the SAS Manual. (Suggested by Michael Friendly.)

Usage

Pottery

Format

A data frame with 26 observations on the following 6 variables.

Site  a factor with levels AshleyRails Caldicot IsleThorns Llanedryn
Al  Aluminum
Fe  Iron
Mg  Magnesium
Ca  Calcium
Na  Sodium

Source


Examples

Pottery
Description
Dialog box to (i) select the within-subject variables corresponding to the factors defined in repMeasAnovaSetup, (ii) select the between-subject factors, (iii) set options and (iv) launch the repeated measures anova.

Usage
repMeasAnova(.withinfactors, .withinlevels)

Arguments

.withinfactors  list of within-subject factors
.withinlevels   list of within-subject variables

Details
Options:

• 'SS type' type of sum of squares, default: type = 2. See Details in Anova
• 'Effect size' compute and prints effect size (partial eta squared)
• 'Summary statistics for groups' prints summary statistics for groups formed by all combinations of factors
• 'Pairwise comparisons of means' performs post-hoc Tukey's HSD test on significant (p < .05) or close to significant (p < 0.1) effects.

On OK, the following operations are carried out:

• Generates a dataset containing complete cases and converted from 'wide' to 'long' format (extension .cpltlg), with the following columns added:
  – 'id' (factor) identifies the subjects.
  – 'DV' (numeric) the measure or dependent variable.
  – 'trial' (int) variable that differentiates multiple measures ('DV') from the same subject ('id').
  – '<factorA>' (factor) levels of the within-subject factor A (one column per within subject factor)
  – '<factorA.factorB:...>' (factor) factor that differentiates multiple measures from groups or subjects with same factors levels

This 'long' dataset is useful for plotting means and post-hoc analysis

• Computes repeated measure ANOVA using Anova
• Computes effect sizes (partial eta squared)
• Prints a summary of marginal statistics (count, min, max, mean, ds)
• runs post-hoc analysis on significant or close to significant effects
repMeasAnovaSetup

Value

None

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See Also

repMeasAnovaSetup for the definition of within factors, Anova for the computation of ANOVA

Descripption

Dialog box to enter the names and levels of within-factors.

Usage

repMeasAnovaSetup()

Details

Up to three factors can be entered. A valid within-factor entry must consist in a syntactically valid name (see make.names) and 2 levels or more.

On OK:

- The first valid entries are kept and stored in .withinfactors and .withinlevels for factor names and levels, respectively.
- The next dialog box (repMeasAnova(.withinfactors, .withinfactors) is launched.

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See Also

repMeasAnova.
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