Package 'RcmdrPlugin.DCCV'

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Type Package

Title R Commander Plug-in for Dichotomous Choice Contingent Valuation

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Depends DCchoice

Imports Rcmdr

Description Adds menu items to the R Commander for parametric analysis of dichotomous choice contingent valuation (DCCV) data. CV is a question-based survey method to elicit individuals' preferences for goods and services. This package depends on functions regarding parametric DCCV analysis in the package DCchoice. See Carson and Hanemann (2005) <doi:10.1016/S1574-0099(05)02017-6> for DCCV.

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RcmdrModels sbchoice, dbchoice, oohbchoice

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R Commander Plug-in for Parametric Analysis of Dichotomous Choice Contingent Valuation Data

Description

This package adds menu items to the R Commander for parametric analysis of dichotomous choice contingent valuation (DCCV) data. CV is a question-based survey method to elicit individuals' preferences for goods and services. This package depends on functions regarding parametric DCCV analysis in the package DCchoice. See Carson and Hanemann (2005) <doi:10.1016/S1574-0099(05)02017-6> for DCCV.

Details

This package is an R Commander plug-in package for parametric analysis of dichotomous choice contingent valuation (DCCV) data. It depends on **DCchoice** (Nakatani et al. 2020) and **Rcmdr** (Fox 2005, 2017; Fox and Bouchet-Valat 2020). Refer to **DCchoice-package**, Aizaki et al. (2014, 2022), and 'Non-Market Valuation with R' <http://lab.agr.hokudai.ac.jp/nmvr/> for a brief introduction to DCCV in R. A manual for this package is available at <https://sites.google.com/view/r4sp/rcmdrplugin>

After successfully installing and loading **RcmdrPlugin.DCCV**, the R Commander window will appear, and then you will find 'DCCV' added to the top-level menus in the R Commander window.

Selecting 'DCCV' displays some menu items. When selecting a menu item, the corresponding dialog box opens. The following dialog boxes are provided by **RcmdrPlugin.DCCV**:

- The dialog box for 'Fit Model...' implements a parametric analysis of DCCV data using sbchoice (single-bounded DCCV), oohbchoice (one-and-one-half-bounded DCCV), or dbchoice (double-bounded DCCV) in **DCchoice**.

- The dialog box for 'Calculate confidence intervals for WTP...' calculates confidence intervals for willigness to pay (WTP) from the fitted model using krCI or bootCI in **DCchoice**.

- The dialog box for 'Draw survival function...' draws a survival function of the fitted model using plot.sbchoice or plot.dbchoice in **DCchoice**.

Acknowledgments

Author(s)

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References

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Examples

```
if (interactive()) {
  library(RcmdrPlugin.DCCV)
}
```

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dccvModel   *Fit Model to DCCV Data*

Description

Fit a model to DCCV data.

Details

This dialog box implements a parametric analysis of DCCV data using function sbchoice (single-bounded DCCV), oohbchoice (one-and-one-half-bounded DCCV), or dbchoice (double-bounded DCCV) in package **DCchoice**. This dialog box is activated if a data frame is selected as the active data set. For details on the results of this dialog box, refer to the help content for functions sbchoice, oohbchoice, and dbchoice.

GUI elements of this dialog box are as follows.

- Name for model: An R object name into which the results of a fitted model obtained through this dialog box are stored. The default name 'DCCVmodel.x', where x indicates the integer number assigned automatically from 1, can be changed following R's rules for naming objects.

- `Choice format`: A choice format type for DCCV to be analyzed. Select one of the three radio buttons corresponding to 'Single-bounded (SB)', 'One-and-one-half-bounded (OOHB)', and 'Double-bounded (DB)'.

- `1st response variable`: A response variable for the suggested price in the first stage of an SB-, OOHB-, or DB-DCCV question. Select it from a drop-down list of variables.

- `2nd response variable`: A response variable for the suggested price in the second stage of an OOHB- or DB-DCCV question. Select it from a drop-down list of variables.

- `Covariates (optional)`: Variables to be used as covariates in the model to be fitted. Select none or more variables from a list box of variables.

- `1st bid variable`: A bid variable containing the suggested price in the first stage of an SB-, OOHB-, or DB-DCCV question. Select it from a drop-down list of variables.

- `2nd bid variable`: A bid variable containing the suggested price in the second stage of an OOHB- or DB-DCCV question. Select it from a drop-down list of variables.

- Take the `log of bid`: A check box for taking the logarithm of the bid variables. When checked, take the logarithm of the bid variable(s) selected by the '1st bid variable' and '2nd bid variable' drop-down lists.

- `Distribution`: An error distribution of the model. Select one from radio buttons corresponding to 'Logistic', 'Normal', 'Log-logistic', 'Log-normal', and 'Weibull'.

- `Subset expression`: A logical expression for specifying a subset of the observations in the active data set to be used for the fitting. If necessary, type a valid logical expression into this box.

- `Initial parameters (optional)`: Initial parameters of independent variables (covariates and bid variables selected above) used in the optimization process of fitting a model. If necessary, type comma-separated values (e.g., 0.3, 1.5, -0.9, ...) into this box.

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dccvPlot   *Draw Survival Function*

Description

Draw a survival function of the fitted model.

Details

This dialog box draws a survival function of the fitted model using function [plot.sbchoice](#) or [plot.dbchoice](#) in **DCchoice** package. This dialog box is activated if the fitted model in the 'Fit Model to DCCV Data' dialog box is selected as the active model. For details on the results of this dialog box, refer to the help content for function [plot.sbchoice](#) or [plot.dbchoice](#).

GUI elements of this dialog box are as follows.

Title and labels (optional)

- `Title`: Main title of the plot. No main title is displayed if missing (default).

- `x-axis`: A label of the x-axis of the plot. A label 'Bid' is displayed if missing (default).

- y-axis: A label of the y-axis of the plot. A label 'Probability of selecting yes' is displayed if missing (default).

Ranges (optional)

- x-axis: The x limits of the plot. The lower limit and the upper limit are specified in the 'from' box and the 'to' box, respectively.

- y-axis: The y limits of the plot. The lower limit and the upper limit are specified in the 'from' box and the 'to' box, respectively.

- Bid from and to: The ranges of bids to be drawn on the plot. The lower bound and the upper bound are specified in the 'from' box and the 'to' box, respectively. The minimum and maximum bid values in the data set are used as the default lower and upper bounds.

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dccvWtp	*Calculate Confidence Intervals for WTP*

Description

Calculate confidence intervals for a willingness to pay (WTP) from the fitted model.

Details

This dialog box uses either function krCI or bootCI in package **DCchoice** to calculate confidence intervals for a WTP from the fitted model. This dialog box is activated if the fitted model in the 'Fit Model to DCCV Data' dialog box is selected as the active model. For details on the results of this dialog box, refer to the help content for krCI or bootCI.

GUI elementsof this dialog box are as follows.

- Name for output: An R object name into which the results are stored. The default name is 'WTP'. Any name that is valid for R is typed into this box, if necessary.

- Calculation method: A method used to calculate confidence intervals for a WTP. Select one of the two radio buttons corresponding to 'Krinsky and Robb' and 'Bootstrap'. For the details on these methods, see help for functions krCI and bootCI.

- Confidence level: A confidence level used for calculating the confidence intervals for a WTP. The default is 0.95.

- Number of replications: Total number of replications. The term 'replication' corresponds to 'resampling' for 'Bootstrap' and 'drawing' for 'Krinsky and Robb'. The default is 200, which may be small.

- Seed for random number generator (optional): An integer value used as a seed for generating random numbers. If reproducibility is needed, type an arbitrary value into this box.

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