

Package ‘RcmdrPlugin.BWS1’

October 19, 2021

Type Package

Title R Commander Plug-in for Case 1 (Object Case) Best-Worst Scaling

Version 0.1-5

Date 2021-10-19

Author Hideo Aizaki

Maintainer Hideo Aizaki <azk-r@spa.nifty.com>

Depends crossdes, support.BWS (>= 0.4-1), support.CEs, survival

Imports Rcmdr

Description Adds menu items to the R Commander for implementing case 1 (object case) best-worst scaling (BWS1) from designing choice sets to measuring preferences for items. BWS1 is a question-based survey method that constructs various combinations of items (choice sets) using the experimental designs, asks respondents to select the best and worst items in each choice set, and then measures preferences for the items by analyzing the responses. For details on BWS1, refer to Louviere et al. (2015) <[doi:10.1017/CBO9781107337855](https://doi.org/10.1017/CBO9781107337855)>.

License GPL (>= 2)

RcmdrModels clogit

NeedsCompilation no

Repository CRAN

Date/Publication 2021-10-19 05:40:02 UTC

R topics documented:

RcmdrPlugin.BWS1-package	2
Index	5

RcmdrPlugin.BWS1-package

R Commander Plug-in for Case 1 (Object Case) Best–Worst Scaling

Description

This package adds menu items to the R Commander for implementing case 1 (object case) best–worst scaling (BWS1) from designing choice sets to measuring preferences for items. BWS1 is a question-based survey method that constructs various combinations of items (choice sets) using the experimental designs, asks respondents to select the best and worst items in each choice set, and then measures preferences for the items by analyzing the responses. For details on BWS1, refer to Louviere et al. (2015).

Details

This package is an R Commander Plug-in package for case 1 best–worst scaling (BWS1). It depends on R packages **crossdes** (Sailer 2005), **support.BWS** (Aizaki 2021; Aizaki et al. 2014), **support.CEs** (Aizaki 2012), and **survival** (Therneau 2021; Therneau and Grambsch 2000) as well as the **Rcmdr** package (Fox 2005, 2017ab; Fox and Bouchet-Valat 2021). Refer to **support.BWS** and “Non-Market Valuation with R” <<http://lab.agr.hokudai.ac.jp/nmvr/>> for a brief introduction to BWS1 in R.

After successfully installing and loading the **RcmdrPlugin.BWS1**, the R Commander window will appear, and then you will find “BWS1” added to the top-level menus in the R Commander window. Selecting “BWS1” displays several menu items. When selecting a menu item, the corresponding dialog box is open. The following dialog boxes are provided by **RcmdrPlugin.BWS1**:

- The dialog box for “Generate design...” generates a balanced incomplete block design (BIBD) for BWS1 using functions **find.BIB** and **isGYD** in the package **crossdes**.
- The dialog box for “Set item...” sets all the items used in your BWS1 application and stores them as a character vector using R basic functions.
- The dialog box for “Create questions...” creates a series of questions for BWS1 according to the BIBD generated and item names set in the previous dialog boxes using the function **bws.questionnaire** in the package **support.BWS**.
- The dialog box for “Synthesize responses...” generates artificial responses to BWS1 questions using the function **bws.response** in **support.BWS**.
- The dialog box for “Create data set for analysis...” creates a data set for analysis from the BIBD generated in the first dialog box and a data set containing responses to BWS1 questions using the function **bws.dataset** in **support.BWS**.
- Selecting the menu item “Measure preferences...” gives options: “Counting approach” and “Modeling approach”. Each has additional sub-items (see below).
- The dialog box for “Calculate scores...” calculates various BW scores for each respondent from the data set for analysis created in the previous dialog box, and then stores them into a data frame using the function **bws.count** in **support.BWS**.
- Selecting “Summarize scores” summarizes the BW scores calculated in the previous dialog box and displays the results in the Output pane of the R Commander window.

- The dialog box for “Draw distributions of scores...” draws distributions (bar plots) of the BW scores by item using an R basic graphic function `barplot` (S3 method for class ‘bws.count2’: [bws.count](#)).
- The dialog box for “Draw mean scores...” draws a bar plot of means of the BW scores by item using the function `barplot` (S3 method for class ‘bws.count2’: [bws.count](#)).
- The dialog box for “Draw relationship between means and sds of scores...” draws a plot of the relationship between means and standard deviations of the BW scores by item using an R basic graphic function `plot` (S3 method for class ‘bws.count2’: [bws.count](#)).
- The dialog box for “Fit model...” implements a modeling analysis using the data set for analysis generated in the previous dialog box using the functions `clogit` in **survival** and `gofm` in **support.CEs**.
- The dialog box for “Calculate shares of preferences...” calculates shares of preferences for items from the model fitted in the previous dialog boxes using the function `bws.sp` in **support.BWS**.

Acknowledgments

This work was supported by JSPS KAKENHI Grant Number JP20K06251.

Author(s)

Hideo Aizaki

References

- Aizaki, H (2012) Basic Functions for Supporting an Implementation of Choice Experiments in R. *Journal of Statistical Software*, Code Snippets, 50(2): 1–24. DOI: 10.18637/jss.v050.c02
- Aizaki, H (2021) support.BWS: Tools for Case 1 Best-Worst Scaling. R package version 0.4-4. <https://CRAN.R-project.org/package=support.BWS>.
- Aizaki H, Nakatani T, Sato K (2014) *Stated Preference Methods Using R*. Chapman and Hall/CRC. DOI: 10.1201/b17292
- Fox J (2005) The R Commander: A Basic Statistics Graphical User Interface to R. *Journal of Statistical Software*, 14(9): 1–42. DOI: 10.18637/jss.v014.i09
- Fox J (2017a) *Using the R Commander: A Point-and-Click Interface for R*. Chapman and Hall/CRC. DOI: 10.1201/9781315380537
- Fox J (2017b) Writing R Commander Plug-in Packages. Version 3.4-0. <https://socialsciences.mcmaster.ca/jfox/Books/RCommander/plug-ins.html>.
- Fox J, Bouchet-Valat M (2021) Rcmdr: R Commander. R package version 2.7-1. <https://socialsciences.mcmaster.ca/jfox/Misc/Rcmdr/>.
- Louviere JJ, Flynn TN, Marley AAJ (2015) *Best-Worst Scaling: Theory, Methods and Applications*. Cambridge University Press. DOI: 10.1017/CBO9781107337855
- Sailer O (2005) crossdes: A package for design and randomization in crossover studies. *Rnews*, 5/2: 24–27.
- Therneau T (2021) survival: Survival Analysis. R package version 3.2-13. <https://CRAN.R-project.org/package=survival>.

Therneau TM, Grambsch PM (2000) *Modeling Survival Data: Extending the Cox Model*. Springer.
DOI: 10.1007/978-1-4757-3294-8

Examples

```
if (interactive()) {  
  library(RcmdrPlugin.BWS1)  
}
```

Index

- * **package**
 - RcmdrPlugin.BWS1-package, 2
- *
 - RcmdrPlugin.BWS1-package, 2
- bws.count, 2, 3
- bws.dataset, 2
- bws.questionnaire, 2
- bws.response, 2
- bws.sp, 3
- bws1Count (RcmdrPlugin.BWS1-package), 2
- bws1count2P (RcmdrPlugin.BWS1-package), 2
- bws1CountBarplot1
 - (RcmdrPlugin.BWS1-package), 2
- bws1CountBarplot2
 - (RcmdrPlugin.BWS1-package), 2
- bws1CountPlot
 - (RcmdrPlugin.BWS1-package), 2
- bws1CountSummary
 - (RcmdrPlugin.BWS1-package), 2
- bws1dataP (RcmdrPlugin.BWS1-package), 2
- bws1Dataset (RcmdrPlugin.BWS1-package), 2
- bws1Design (RcmdrPlugin.BWS1-package), 2
- bws1DesignOLD
 - (RcmdrPlugin.BWS1-package), 2
- bws1FitmodelSimple
 - (RcmdrPlugin.BWS1-package), 2
- bws1Items (RcmdrPlugin.BWS1-package), 2
- bws1Questions
 - (RcmdrPlugin.BWS1-package), 2
- bws1Response
 - (RcmdrPlugin.BWS1-package), 2
- bws1SharePref
 - (RcmdrPlugin.BWS1-package), 2
- clogit, 3
- clogitP (RcmdrPlugin.BWS1-package), 2
- crossdes, 2
- find.BIB, 2
- gofm, 3
- isGYD, 2
- Rcmdr, 2
- RcmdrPlugin.BWS1
 - (RcmdrPlugin.BWS1-package), 2
- RcmdrPlugin.BWS1-package, 2
- resetbws1Dataset
 - (RcmdrPlugin.BWS1-package), 2
- resetbws1Fitmodel
 - (RcmdrPlugin.BWS1-package), 2
- resetbws1FitmodelSimple
 - (RcmdrPlugin.BWS1-package), 2
- resetbws1Items
 - (RcmdrPlugin.BWS1-package), 2
- support.BWS, 2, 3
- support.CEs, 2, 3