Package 'panelView'

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Type Package

Title Visualizing Panel Data

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Description Visualizes panel data. It has two main functionalities: (1) it visualizes the treatment and missing-value statuses of each observation in a panel/time-series-cross-sectional (TSCS) dataset; and (2) it plots the outcome variable (either continuous or discrete) in a time-series fashion.

URL https://yiqingxu.org/packages/panelView/panelView.html

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Imports ggplot2 (>= 2.1.0), gridExtra, grid

Depends R (>= 2.10)

RoxygenNote 6.0.1

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R topics documented:

panelView-package *Panel Data Visualizations*

Description

Visualizes panel data with (dichotomous) treatments

Details

panelView has two main functionalities: (1) it visualizes the treatment and missing-value statuses of each observation in a panel/time-series-cross-sectional (TSCS) dataset; and (2) it plots the outcome variable (either continuous or discrete) in a time-series fashion.

For more details, see https://yiqingxu.org/packages/panelView/panelView.html.

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capacity *capacity*

Description

Cross-national panel data on democracy and state capacity.

Format

dataframe

References

The democracy measure (demo) comes from Boix, Miller, and Rosato (2013). The state capacity measure (Capacity) comes from Hanson and Sigman (2013.)

Reference: Erik H. Wang and Yiqing Xu (2018). "Awakening Leviathan: the Effect of Democracy on State Capacity, 1960-2009." Research and Politics, Vol. 5, Iss. 2, April-June 2018, pp. 1-7.

panelView *Panel Data Visualizations*

Description

Visualizes panel data

Usage

```
panelView(data, formula = NULL, Y = NULL, D = NULL,
            X = NULL, index, na.rm = TRUE,
            ignore.treat = FALSE, type = "treat",
            outcome.type = "continuous",
            treat.type = NULL, by.group = FALSE,
            by.timing = FALSE, theme.bw = FALSE,
            xlim = NULL, ylim = NULL,
            xlab = NULL, ylab = NULL,
            gridOff = FALSE, legendOff = FALSE,
            legend.labs = NULL, main = NULL,
            pre.post = FALSE, id = NULL, show.id = NULL,
            color = NULL, axis.adjust = FALSE, axis.lab = "both",
            axis.lab.gap = c(0, 0), shade.post = TRUE,
            cex.main = 15, cex.main.sub = 12,
            cex.axis = 8, cex.axis.x = NULL, cex.axis.y = NULL,
            cex.lab = 12, cex.legend = 12, background = NULL)
```

Arguments

data	a data frame. The panel does not have to be balanced.
formula	an object of class "formula": a symbolic description of the model to be fitted. The first variable on the right-hand-side is designated as the treatment indicator if ignore.treat = FALSE. If there is not any covariates, the formula should be like Y~1, where Y is the outcome variable.
Y	variable name of the outcome. Ignored if formula is provided.
D	variable name of the treatment. Ignored if formula is provided.
X	variable name of the time-varying covariates. Ignored if formula is provided.
index	a two-element string vector specifying the unit (group) and time indicators. Must be of length 2.
na.rm	a logical flag indicating whether to list-wise delete missing data. The algorithm will report an error if missing data exist when na.rm = FALSE.
ignore.treat	a logical flag indicating whether there is a treatment variable. Default value is ignore.treat = FALSE.
type	a string that specifies the type of the plot. Must be either "treat" (default), which plots the treatment/missing-data status of each unit at each time point) or "outcome", which plots the raw outcome data

outcome.type	a string that specifies the type of outcome variable. Must be either "continuous"(default) or "discrete". For a continuous variable, time series lines for specified units will be plotted, and for discrete response, jitter-ed points at each time period will be plotted.
treat.type	a string that specifies the type of treatment variable. Must be either "continuous" or "discrete". The default is NULL, which means the option will be decided based on the number of unique treatment values: if the number if bigger than 10, it will be set as "continuous"; otherwise, it will be set as "discrete".
by.group	a logic flag indicating whether the data should be plotted in separate groups based on treatment status changes for the outcome plot.
by.timing	a logic flag indicating whether the units should be sorted based on the timing of receiving the treatment for the treat plot.
theme.bw	a logical flag specifying whether to use a black-and-white theme.
xlim	a two-element numeric vector specifying the range of x-axis. When the class of time variable is string, must specify the range of strings to be shown, e.g. xlim=c(1,30).
ylim	a two-element numeric vector specifying the range of y-axis.
xlab	a string indicating the label of the x-axis.
ylab	a string indicating the label of the y-axis.
gridOff	a logical flag controlling whether to show the grid lines on the treat plot..
legendOff	a logical flag controlling whether to show the legend.
legend.labs	a vector specifying the legend labels. Ignored when legendOff=TRUE.
main	a string that controls the title of the plot.
pre.post	a logical flag indicating whether to distinguish control status of treated units from that of control units. Only used for DID-type data in the treat plot.
id	a vector specifying units to be shown in the plot. Useful when the number of units is very large.
show.id	a numeric vector or sequence specifying the sorted order of units to be shown in the "treat" plot. Useful when the number of units is very large. Ignored if !is.null("id").
color	a string vector specifying color setting for the plot.
axis.adjust	a logic flag indicating whether to adjust labels on the x-axis. Useful when the class of time variable is string and there are many time periods.
axis.lab	a string indicating whether labels on the x- and y-axis will be shown. There are four options: "both" (default): labels on both axes will be shown; "unit": only labels on y-axis will be shown; "time": only labels on the x-axis will be shown; "none": no labels will be shown.
axis.lab.gap	a numeric vector setting the gaps between labels on the x- or y-axis for the plot. Default is axis.lab.gap = c(0,0), which means that all labels will be shown. Useful for datasets with large N or T.
shade.post	a logical flag controlling whether to shade the post-treatment periods. Ignored if type = "treat" or no treatment variable is supplied.

cex.main	a numeric value (pt) specifying the fontsize of the main title.
cex.main.sub	a numeric value (pt) specifying the fontsize of the subtitles. Ignored if type = "treat" or by.group = FALSE.
cex.axis	a numeric value (pt) specifying the fontsize of the texts on the axes; overwritten by cex.axis.x or cex.axis.y.
cex.axis.x	a numeric value (pt) specifying the fontsize of the texts on the x-axis.
cex.axis.y	a numeric value (pt) specifying the fontsize of the texts on the y-axis.
cex.lab	a numeric value (pt) specifying the fontsize of the axis titles.
cex.legend	a numeric value (pt) specifying the fontsize of the legend.
background	a character specifying the background color.

Details

panelView visualizes the treatment status, missing values, and raw outcome data of a time-series cross-sectional dataset.

For more details, see https://yiqingxu.org/packages/panelView/panelView.html.

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Examples

```
library(panelView)
data(panelView)
panelView(turnout ~ policy_edr + policy_mail_in + policy_motor,
          data = turnout, index = c("abb","year"))
```

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simdata *simdata*

Description

A simulated panel dataset with a discrete outcome variable.

Format

dataframe

turnout *turnout*

Description

State-level voter turnout data.

Format

dataframe

References

Melanie Jean Springer. 2014. How the States Shaped the Nation: American Electoral Institutions and Voter Turnout, 1920-2000. University of Chicago Press.

Yiqing Xu. 2017. "Generalized Synthetic Control Method: Causal Inference with Interactive Fixed Effects Models." Political Analysis, Vol. 25, Iss. 1, January 2017, pp. 57-76.

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