

# Package ‘panelView’

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**Type** Package

**Title** Visualizing Panel Data

**Version** 1.1.2

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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** <http://yiqingxu.org/software/panelView/panelView.html>

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**Imports** ggplot2 (>= 2.1.0), gridExtra, grid

**Depends** R (>= 2.10)

**RoxygenNote** 6.0.1

**NeedsCompilation** no

**Repository** CRAN

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panelView-package      *Panel Data Visualizations*

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### 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 <http://yiqingxu.org/software/panelView/panelView.html>.

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capacity      *capacity*

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### 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, forthcoming. Available at: <http://journals.sagepub.com/doi/full/10.1177/2053168018772398>.

**Description**

Visualizes panel data

**Usage**

```
panelView(data, formula = NULL, Y = NULL, D = NULL,
           X = NULL, index, na.rm = TRUE,
           ignore.treat = FALSE, outcome.type = "continuous",
           type = "treat", 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.lab = 12, cex.legend = 12, background = NULL)
```

**Arguments**

<code>data</code>	a data frame. The panel does not have to be balanced.
<code>formula</code>	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 <code>ignore.treat = FALSE</code> . If there is not any covariates, the formula should be like $Y \sim 1$ , where $Y$ is the outcome variable.
<code>Y</code>	variable name of the outcome. Ignored if <code>formula</code> is provided.
<code>D</code>	variable name of the treatment. Ignored if <code>formula</code> is provided.
<code>X</code>	variable name of the time-varying covariates. Ignored if <code>formula</code> is provided.
<code>index</code>	a two-element string vector specifying the unit (group) and time indicators. Must be of length 2.
<code>na.rm</code>	a logical flag indicating whether to list-wise delete missing data. The algorithm will report an error if missing data exist when <code>na.rm = FALSE</code> .
<code>ignore.treat</code>	a logical flag indicating whether there is a treatment variable. Default value is <code>ignore.treat = FALSE</code> .
<code>outcome.type</code>	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.

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
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.
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 <http://yiqingxu.org/software/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*

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**Description**

A simulated panel dataset with a discrete outcome variable.

**Format**

dataframe

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turnout

*turnout*

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**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. Available at: <https://doi.org/10.1017/pan.2016.2>.

For more details, see [http://yiqingxu.org/software/gsynth/gsynth\\_examples.html](http://yiqingxu.org/software/gsynth/gsynth_examples.html).

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