Package ‘strm’

November 2, 2020

Title  Spatio-Temporal Regression Modeling

Version  0.1.1


Depends  R (>= 3.5), spatialreg (>= 1.1-5)

Imports  rlang (>= 0.4.6), dplyr (>= 1.0.0), tidyr (>= 1.0.0), purrr (>= 0.3.4), magrittr (>= 1.5), rgdal (>= 1.5.10), testthat (>= 2.3.2), rmarkdown (>= 2.3), stats, grDevices, methods, graphics, utils, knitr

Suggests  splm (>= 1.4.11), spdep (>= 1.1-3), rgeos (>= 0.5-3), sf (>= 0.9-4), Ecdat (>= 0.3-7), tidycensus (>= 0.9.9), ggplot2 (>= 3.3.2), patchwork (>= 1.0.1), broom (>= 0.7.0)

VignetteBuilder  knitr

Encoding  UTF-8

License  GPL (>= 2)

Maintainer  Maria Kamenetsky <maria.kamenetsky@gmail.com>

BugReports  https://github.com/mkamenet3/strm/issues

LazyData  true

RoxygenNote  7.1.0

SystemRequirements  C++11, GDAL (>= 1.11.4), GEOS (>= 3.4.0), PROJ (>= 6.3.1)

NeedsCompilation  yes

Author  Maria Kamenetsky [aut, cre], Guangqing Chi [aut], Jun Zhu [aut]

Repository  CRAN

Date/Publication  2020-11-02 09:00:02 UTC
Description

Creates lagged explanatory and response variables for data in long format.

Usage

createlagvars(data, vars, id, time = time, wide, filter_options)

Arguments

data Name of dataframe that has been transformed in strm (object modframe0).

vars Response and explanatory variables to be lagged.

id Group identifier (example: state).

time Number of time periods in the dataset. Lags will be taken for each time period. Default is 2 time periods. For a spatial-only regression model, set time=1.

wide Boolean indicator. Takes TRUE if data is in wide format and FALSE if data is in long format. Default is FALSE.

filter_options Additional arguments to be passed to dplyr::filter().

Details

Create lagged and transformed variables
Description

We use the example from Chi, G. and Zhu, J. (2019) Spatial Regression Models for the Social Sciences. The example uses population growth data from 2000 to 2010. Data are at the minor civil division (MCD) level in Wisconsin. There are two years of data: 2000 and 2010. The subset of variables we use are:

- \texttt{LNP1000}: population growth from 2000 to 2010.
- \texttt{LNP0900}: population growth from 1990 to 2000.
- \texttt{POLD00}: percentage of the old population (age sixty-five and older) in 2000.
- \texttt{POLD90}: percentage of the old population (age sixty-five and older) in 1990.

Usage

data(sptdmg3)

Format

An object of class \texttt{SpatialPolygonsDataFrame} with 1837 rows and 7 columns.

References


Examples

data(sptdmg3)
class(sptdmg3)
names(sptdmg3)

Description

We use two 5-year ACS county level data in Wisconsin downloaded using the tidycensus R package. The example uses raw 5-year estimates from 2013-2017 and 2014-2018 ACS data at the county-level in Wisconsin. The variables downloaded are:

- \texttt{B17020_002} - Estimate: Total - Income in the past 12 months below poverty level
- \texttt{B17020_001} - Estimate: Total - Poverty Status in the past 12 months.
• B23022_026 - Estimate: Total Female by Work Status by weeks worked in the past 12 months for the population 16-64 years old.
• B23022_001 - Estimate: Total: status in the past 12 months by usual hours worked per week in the past 12 months by weeks worked in the past 12 months for the population 16-64 years old (Male and Female)

Usage

data(wi_raw)

Format

An object of class sf (inherits from data.frame) with 576 rows and 7 columns.

References


Examples

data(wi_raw)
class(wi_raw)
names(wi_raw)
Index

* datasets
  sptdmg3, 3
  wi_raw, 3

createlagvars, 2
sptdmg3, 3
wi_raw, 3