Package ‘CARBayesdata’

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Description Spatio-temporal data from Scotland used in the vignettes accompanying the CARBayes (spatial modelling) and CARBayesST (spatio-temporal modelling) packages. All data except for the Scottish lip cancer data relate to the set of 271 Intermediate Geographies (IG, but also known as Intermediate Zones (IZ)) that make up the 2001 definition of the Greater Glasgow and Clyde health board.
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R topics documented:

CARBayesdata-package .................................................. 2
GGHB.IG ................................................................. 3
lipdata ................................................................. 4
lipdf ................................................................. 4
lipshp ............................................................... 5
pollutionhealthdata ..................................................... 5
pricedata ............................................................ 6
respiratorydata ......................................................... 7
salesdata ............................................................ 7

Index 9
Data Used in the Vignettes Accompanying the CARBayes and CARBayesST Packages

Description

Spatio-temporal data from Scotland used in the vignettes accompanying the CARBayes (spatial modelling) and CARBayesST (spatio-temporal modelling) packages. All data except for the Scottish lip cancer data relate to the set of 271 Intermediate Geographies (IG, but also known as Intermediate Zones (IZ)) that make up the 2001 definition of the Greater Glasgow and Clyde health board.

Details

Package: CARBayesdata
Type: Package
Version: 2.1
Date: 2018-08-31
License: GPL (>= 2)

Author(s)

Maintainer: Duncan Lee <Duncan.Lee@glasgow.ac.uk>

Examples

library(shapefiles)
library(sp)

## Read in the spatial data for the Greater Glasgow and Clyde Health Board
data(GGHB.IG)

## Read in the Scottish lip cancer dataframe and shapefile components
data(lipdata)
data(lipdbf)
data(lipshp)

## Read in the respiratory hospitalisation and pollution data
data(pollutionhealthdata)

## Read in the property price data
data(pricedata)

## Read in the respiratory hospitalisation data
data(respiratorydata)
## Description

A SpatialPolygonsDataFrame object containing the spatial polygon information for the set of 271 Intermediate Geographies (IG, but also known as Intermediate Zones (IZ)) that make up the 2001 definition of the Greater Glasgow and Clyde health board in Scotland. This study region is used in the worked examples in the vignettes accompanying the CARBayes and CARBayesST packages.

## Usage

```r
data(GGHB.IG)
```

## Format

A SpatialPolygonsDataFrame object, where the dataframe component contains 271 observations on the following variables.

**IG** Unique code for each IG.

**name** Name of each IG.

**easting** Easting coordinate of the centroid in metres.

**northing** Northing coordinate of the centroid in metres.

## Source

These data were provided by the Scottish Government via http://data.gov.uk.

## Examples

```r
library(sp)
data(GGHB.IG)
```
### lipdata

**Description**
These purely spatial data summarise overall lip cancer cases and possible covariate risk factors for the period 1975 to 1986, for 56 districts in Scotland. These data are used in a worked example in the vignette accompanying the CARBayes package.

**Usage**
```r
data(lipdata)
```

**Format**
A data.frame object containing 56 observations on the following 5 variables.
- **observed**: The number of recorded lip cancer cases.
- **expected**: The expected number of lip cancer cases computed using indirect standardisation using Scotland-wide disease rates.
- **pcaff**: The percentage of the workforce employed in agriculture, fishing and forestry.
- **latitude**: The latitude of the centroid.
- **longitude**: The longitude of the centroid.

**Examples**
```r
data(lipdata)
```

### lipdbf

**Shapefile (.dbf) for the 56 districts in Scotland for the lip cancer data**

**Description**
lipdbf contains the .dbf component of the shapefile for the 56 districts in Scotland for the lip cancer data. These data are used in a worked example in the vignette accompanying the CARBayes package.

**Usage**
```r
data(lipdbf)
```

**Examples**
```r
library(shapefiles)
data(lipdbf)
```
lipshp

Shapefile (.shp) for the 56 districts in Scotland for the lip cancer data

Description

lipshp contains the .shp component of the shapefile for the 56 districts in Scotland for the lip cancer data. These data are used in a worked example in the vignette accompanying the CARBayes package.

Usage

data(lipshp)

Examples

library(shapefiles)
data(lipshp)

pollutionhealthdata

Respiratory hospitalisation, air pollution and covariate data for the Greater Glasgow and Clyde health board between 2007 and 2011.

Description

A data.frame object containing spatio-temporal data on respiratory hospitalisations, air pollution concentrations and socio-economic deprivation covariates for the 271 Intermediate Geographies (IG) that make up the Greater Glasgow and Clyde health board in Scotland. Yearly data are available between 2007 and 2011 inclusive. These data are used in a worked example in the vignette accompanying the CARBayesST package.

Usage

data(pollutionhealthdata)

Format

A data.frame object containing 1355 observations on the following 7 variables.

IG The unique identifier for each IG.
year The year the data relate to.
observed The observed numbers of hospitalisations due to respiratory disease.
expected The expected numbers of hospitalisations due to respiratory disease computed using indirect standardisation from Scotland-wide respiratory hospitalisation rates.
\(\text{pm10}\) Average particulate matter (less than 10 microns) concentrations.
jsa The percentage of working age people who are in receipt of Job Seekers Allowance, a benefit paid to unemployed people looking for work.
price Average property price (divided by 100,000).
Source

These data were provided by the Scottish Government via http://statistics.gov.scot.

Examples

data(pollutionhealthdata)

___

pricedata          Property price data for the Greater Glasgow and Clyde health board

Description

A data.frame object containing purely spatial data on median property prices in 2008 and possible covariates for 270 of the 271 Intermediate Geographies (IG) that make up the Greater Glasgow and Clyde health board in Scotland. Data for one IG have been removed due to it having an extreme outlying observation. These data are used in a worked example in the vignette accompanying the CARBayes package.

Usage

data(pricedata)

Format

A data.frame object containing 270 observations on the following 7 variables.

IG   The unique identifier for each IG.
price Median property price.
crime The crime rate (number of crimes per 10,000 people).
rooms The median number of rooms in a property.
sales The percentage of properties that sold in a year.
driveshop The average time taken to drive to a shopping centre in minutes.
type The predominant property type with levels: detached, flat, semi, terrace.

Source

These data were provided by the Scottish Government via http://statistics.gov.scot.

Examples

data(pricedata)
respiratorydata

Respiratory hospitalisation data for the Greater Glasgow and Clyde health board

Description
A data.frame object containing purely spatial data on hospital admissions due to respiratory disease in 2010 for the 134 Intermediate Geographies (IG) to the north of the river Clyde in the Greater Glasgow and Clyde health board. These data are used in a worked example in the vignette accompanying the CARBayes package.

Usage
data(respiratorydata)

Format
A data.frame object containing 134 observations on the following 5 variables.

IG The unique identifier for each IG.
observed The observed numbers of hospitalisations due to respiratory disease.
expected The expected numbers of hospitalisations due to respiratory disease computed using indirect standardisation from Scotland-wide respiratory hospitalisation rates.
incomedep The percentage of people who are defined to be income deprived.
SMR The standardised morbidity ratio (SMR = observed / expected) for respiratory hospitalisation.

Source
These data were provided by the Scottish Government via http://statistics.gov.scot.

Examples
data(respiratorydata)

salesdata Property sales data for the Greater Glasgow and Clyde health board between 2003 and 2013.

Description
A data.frame object containing spatio-temporal data on property sales and the total number of properties for the 271 Intermediate Geographies (IG) that make up the Greater Glasgow and Clyde health board in Scotland. Yearly data are available between 2003 and 2013 inclusive. These data are used in a worked example in the vignette accompanying the CARBayesST package.
Usage
data(salesdata)

Format
A data.frame object containing 2981 observations on the following 4 variables.

- **IG**: The unique identifier for each IG.
- **year**: The year the data relate to.
- **sales**: The number of property sales.
- **stock**: The number of properties.

Source
These data were provided by the Scottish Government via http://statistics.gov.scot.

Examples
data(salesdata)
Index

*Topic **datasets**
   - GGHB.IG, 3
   - lipdata, 4
   - lipdbf, 4
   - lipshp, 5
   - pollutionhealthdata, 5
   - pricedata, 6
   - respiratorydata, 7
   - salesdata, 7

CARBayesdata (CARBayesdata-package), 2
CARBayesdata-package, 2

GGHB.IG, 3

lipdata, 4
lipdbf, 4
lipshp, 5

pollutionhealthdata, 5
pricedata, 6

respiratorydata, 7

salesdata, 7