Package ‘FlexScan’

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Type Package
Title Flexible Scan Statistics
Version 0.2.2
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Depends R (>= 2.10)
Description An easy way to conduct flexible scan.
   Monte-Carlo method is used to test the spatial clusters given the cases, population, and shapefile.
   A table with formal style and a map with clusters are included in the result report.
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R topics documented:

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Description

An easy way to conduct flexible scan. Monte-Carlo method is used to test the spatial clusters given the cases, population, and shapefile. A table with formal style and a map with clusters are included in the result report. The method can be referenced at: Toshiro Tango and Kunihiro Takahashi (2005) <doi:10.1186/1476-072X-4-11>.

Usage

flexscan(map, case, pop, nsim, k, alpha, isplot, col)

Arguments

map    spatial object, typically a shapefile read in using 'rgdal::readOGR'
case   numeric, a vector of number of cases for each region of 'map'; it is noteworthy that the order of regions in 'case' is corresponding to that in 'map'
pop    numeric, a vector of number of population for each region of 'map'; it is noteworthy that the order of regions in 'pop' is corresponding to that in 'map'
nsim   numeric, the number of simulations for Monte Carlo test; the default is 999
k      numeric, the maximum number of regions allowed for clusters; the default is 10
alpha  numeric, the significance level of flexible scan test; the default is 0.05
isplot logical, whether to plot the results; the default is 0.05
col    color vector, two colors for most likely cluster and secondary cluster; the default is c("red","blue")

Value

data.frame a data.frame containing 8 variables as follows:
Cluster Type most likely cluster or secondary cluster
Region ID region id for each cluster; it is noteworthy that the 'ID' is the order of regions in 'map'
Observed Cases observed cases for each cluster
Expected Cases expected cases for each cluster
SR standardized ratio of observed to expected cases
RR relative risk for each cluster
LLR loglikelihood ratio for each cluster
P Value p value of likelihood ratio test for each cluster
Note
Please feel free to contact us, if you have any advice and find any bug!

Reference:

Updates:
Version 0.2.0: Fix the bugs according to the dependent package of "smerc" version 1.1
Version 0.2.2: Fix the bugs according to the dependent package of "spdep"

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Examples
```r
data(map)
data(sample)
# simple example for checks; turn the warnings back on using 'options(warn=0)'
options(warn=-1)
flexscan(map, case=sample$case, pop=sample$pop, k=3, isplot=FALSE, nsim=10)
## Not run:
flexscan(map, case=sample$case, pop=sample$pop)
## End(Not run)
```

map

Shapefile

Description
There 123 tiles in the map.

Usage
```r
map
```

sample

Sample Data

Description
There are two variables in the 'sample' including 'case' and 'pop'.

Usage
```r
sample
```
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