Package ‘FlexScan’

April 7, 2020

Type  Package
Title  Flexible Scan Statistics
Version  0.2.0
Author  Zhicheng Du, Yuantao Hao
Maintainer  Zhicheng Du <dgdzc@hotmail.com>
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.
License  GPL-3
Imports  smerc, sp, spdep, methods, graphics
Encoding  UTF-8
LazyData  true
NeedsCompilation  no
Repository  CRAN
Date/Publication  2020-04-07 08:30:03 UTC

R topics documented:

flexscan .......................................................... 2
map ................................................................. 3
sample ............................................................ 3

Index  4
flexscan

Flexible Scan Statistics

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”)
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

Author(s)
Zhicheng Du<dgdzc@hotmail.com>, Yuantao Hao<haoyt@mail.sysu.edu.cn>

Examples

data(map)
data(sample)
# simple example for checks; turn the warnings back on using 'options(warn=0)'
options(warn=-1)
flexscan(map[111:121,],case=sample$case[111:121],pop=sample$pop[111:121],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
map

sample
Sample Data

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

Usage
taxample
Index

*Topic datasets
  map, 3
  sample, 3

flexscan, 2

map, 3

sample, 3