Package ‘fglsnet’

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Type Package

Title A Feasible Generalized Least Squares Estimator for Regression Analysis of Outcomes with Network Dependence

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Description The function estimates a multivariate regression model for outcomes with network dependence.

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Imports network, sna, matrixcalc, Matrix, MASS, sandwich, lmtest

License GPL-3

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dat Simulated data for demonstrating "fglsnet".

Description
Simulated data for demonstrating "fglsnet".

Usage
data(dat)

Format
An object of class list of length 3.

Details
Y is the outcome. X contains the regressors including the intercept. M is the dependence network.

fglsnet A Feasible Generalized Least Squares Estimator for Regression Analysis of Outcomes with Network Dependence

Description
fglsnet estimates a multivariate regression model for analyzing outcomes with network dependence.

Usage
fglsnet(
  formula,
  M = NULL,
  directed = TRUE,
  mcorr = TRUE,
  CSE = FALSE,
  k = 10,
  data = data
)
fglsnet

**Arguments**

- `formula`: A formula indicating the regression model.
- `M`: The dependence network.
- `directed`: Whether the dependence network is directed or undirected.
- `mcorr`: Whether request multiple correlation coefficients to distinguish triadic, mutual, and asymmetric error dependence.
- `CSE`: Whether use clustered standard error for the residual regression. Default cluster is the ego unit.
- `k`: The number of iterations in the fgls estimation.
- `data`: The data that are used for the regression.

**Details**

The function estimates a multivariate regression model for analyzing outcomes with network dependence.

**Value**

A list containing the coefficient `coef`, the testing results on the error correlations `rtest`, the estimated error variance `Sigma`, the estimated error correlation matrix `Omega`, and the OLS estimates `ols`.

**References**


**Examples**

```r
data(dat)

g <- fglsnet(Y ~ X-1, M = dat$M, directed = TRUE, mcorr = 1, k = 5, data = dat)

g$coef```

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