Package ‘ceser’

November 9, 2020

Title Cluster Estimated Standard Errors
Version 1.0.0
Description Implementation of the Cluster Estimated Standard Errors (CESE) proposed in Jack- son (2020) <DOI:10.1017/pan.2019.38> to compute clustered standard errors of linear coeffi- cients in regression models with grouped data.
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LazyData true
URL https://github.com/DiogoFerrari/ceser
BugReports https://github.com/DiogoFerrari/ceser/issues
Depends R (>= 2.10)
Imports magrittr, purrr, dplyr, tibble, lmtest
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Suggests knitr, rmarkdown
VignetteBuilder knitr
NeedsCompilation yes
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Sample data set

dcese

Description

A dataset relating the effective number of parties to the number of presidential candidates and presidential power.

Usage
dcese

Format

A data frame with rows and 9 variables:

- country: name of the country
- enep: Effective number of legislative parties
- enpc: Number of presidential candidates
- fapres: Presidential power
- proximity: Proximity of the presidential and legislative elections
- eneg: Effective number of ethnic groups
- logmag: log of average district magnitudes
- enpcfapres: Interaction between enpc and fapres
- logmag_eneg: Interaction between logmag and eneg ...

Source


References

vcovCESE  

Cluster Estimated Standard Errors

Description

Cluster Estimated Standard Errors (CESE)

Usage

vcovCESE(mod, cluster = NULL, type = NULL)

Arguments

mod  
a model object. It can be the output of the functions \texttt{lm}, \texttt{glm}, or other regression function that returns compatible objects.

cluster  
either a string vector with the name of the variables that will be used to cluster the standard errors, or a formula - e.g., \(~ \text{rhs}\), with a summation of the variables that will be used to cluster the standard errors replacing the \texttt{rhs} \(-\), or a vector, matrix, or \texttt{data.frame} with the clustering data.

type  
string with either \texttt{HC0}, \texttt{HC1}, \texttt{HC2}, \texttt{HC3}, or \texttt{HC4}. It specifies the type of heteroskedasticity correction to use (see Davidson and MacKinnon (1993) and Hayes and Cai (2007)).

Value

The function returns a variance-covariance matrix of the coefficient estimates using the Cluster Estimated Standard Error (CESE) method.

References


Examples

mod = \texttt{lm(enep} ~ \texttt{enpc + fapres + enpcfapres + proximity + eneg + logmag + logmag\_eneg , data=dcese)}

## --------------------------------------
## Getting the variance-covariance matrix
## --------------------------------------

vcov(mod)
## Variance-covariance matrix using CRSE (sandwich package)
## sandwich::vcovCL(mod, cluster = ~ country)
## sandwich::vcovCL(mod, cluster = ~ country, type="HC3")

## Variance-covariance matrix using CESE
ceser::vcovCESE(mod, cluster = ~ country)
ceser::vcovCESE(mod, cluster = ~ country, type="HC3") # HC3 correction

## Summaries
##
## no robust SE
summary(mod)

## summary table using CRSE (sandwich package)
## lmtest::coeftest(mod, vcov = sandwich::vcovCL, cluster = ~ country)

## summary using CESE
lmtest::coeftest(mod, vcov = ceser::vcovCESE, cluster = ~ country, type='HC3')
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