Package ‘ceser’

May 8, 2026

Title Cluster Estimated Standard Errors

Version 1.0.0

Description Implementation of the Cluster Estimated Standard Errors (CESE) proposed in Jackson (2020) <DOI:10.1017/pan.2019.38> to compute clustered standard errors of linear coefficients in regression models with grouped data.

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Encoding UTF-8

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

RoxygenNote 7.0.2

Suggests knitr, rmarkdown

VignetteBuilder knitr

NeedsCompilation yes

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Repository CRAN

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`dcese` *Sample data set*

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 Eeffective number of ethnic groups

logmag log of average district magnitudes

enpcfapres Interaction between enpc and fapres

logmag_eneg Interaction between logmag and eneg ...

Source

Jackson, John (2019) Corrected Standard Errors with Clustered Data. Political Analysis.

References

Elgie, Robert, Bueur, C., Dolez, B. & Laurent, A. (2014). “Proximity, Candidates, and Presidential Power: How Directly Elected Presidents Shape the Legislative Party System.” Political Research Quarterly. 67(3): 467 - 477.

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 lm, 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., ~ rhs, with a summation of the variables that will be used to cluster the standard errors replacing the rhs -, or a vector, matrix, or data.frame with the clustering data.
type	string with either HC0, HC1, HC2, HC3, or 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-covariace matrix of the coefficient estimates using the Cluster Estimated Standard Error (CESE) method.

References

Jackson, John (2019) Corrected Standard Errors with Clustered Data. Political Analysis.

Hayes, A. F., & Cai, L., (2007) Using heteroskedasticity-consistent standard error estimators in ols regression: an introduction and software implementation, Behavior research methods, 39(4), 709–722.

Davidson, R., & MacKinnon, J. G., (2004) Econometric theory and methods: Oxford University Press New York.

Examples

```
mod = lm(enep ~ enpc + fapres + enpcfapres + proximity + eneg + logmag + logmag_eneg , data=dcese)

## --------------------------------------
## Getting the variance covariance matrix
## --------------------------------------
## Original variance-covariance matrix (no clustered std. errors)
vcov(mod)
```

```
## Variance-covariance matrix using CRSE (sandwish 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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