

Package ‘infotest’

May 8, 2026

Type Package

Title Information Matrix Test for Regression Models

Version 0.1.0

Maintainer Hasraddin Guliyev <hasradding@unec.edu.az>

Description Implements the Information Matrix test for regression models following Cameron, A. C., & Trivedi, P. K. (1990) <https://cameron.econ.ucdavis.edu/research/imtest IMPLIEDalternatives_ucdwp372.pdf> Decomposes the test into components for heteroscedasticity, skewness, and kurtosis to diagnose specific forms of misspecification. Provides both overall and component-wise statistics for model assessment.

License GPL (>= 3)

Depends R (>= 3.6.0)

Imports stats

Suggests spelling

Encoding UTF-8

RoxygenNote 7.3.3

URL <https://github.com/guliyevh/infotest>

BugReports <https://github.com/guliyevh/infotest/issues>

Language en-US

NeedsCompilation no

Author Hasraddin Guliyev [aut, cre]

Repository CRAN

Date/Publication 2025-10-30 14:30:02 UTC

Contents

infotest	2
Index	4

`infotest`*Information Matrix Test for Regression Models*

Description

`infotest()` applies the Information Matrix (IM) test to a fitted `lm` model and reports the Cameron & Trivedi (1990) decomposition into heteroskedasticity, skewness, and kurtosis components. Optionally, White's (1980) heteroskedasticity test is also reported.

Usage

```
infotest(model, white = TRUE, verbose = TRUE)
```

Arguments

<code>model</code>	A fitted <code>lm</code> object.
<code>white</code>	Logical; if TRUE, also compute and report White's test (default TRUE).
<code>verbose</code>	Logical; if TRUE, print detailed results to console (default TRUE).

Details

Information Matrix (IM) Test for `lm()` Models

The function checks that `model` is an `lm` fit and refuses weighted models. The intercept is removed from the design matrix, regressors are centered, and quadratic terms are constructed for the auxiliary regressions used by the IM and White tests. Test statistics are computed as chi-square values with associated degrees of freedom.

Value

An object of class `infotest` containing:

- `decomposition`: a list with components heteroskedasticity, skewness, kurtosis, and total, each providing `chi2`, `df`, and `p`.
- `white`: (only when `white = TRUE`) a list with `chi2`, `df`, and `p`.
- `call`: the function call

Warnings

- Weighted `lm` fits are not supported.
- If there are no covariates (intercept-only model), the test is skipped with a message.

Author(s)

Hasraddin Guliyev <hasradding@unec.edu.az>

References

White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*, 48(4), 817–838.

Cameron, A. C., & Trivedi, P. K. (1990). The information matrix test and its applied alternatives. *Econometric Theory*, 6(2), 179–195.

See Also

[lm](#), [pchisq](#)

Examples

```
m <- lm(Sepal.Length ~ Sepal.Width + Petal.Length, data = iris)

# Print results to console
infotest(m)

# Store results without printing
res <- infotest(m, verbose = FALSE)
print(res)

# Access components
str(res$decomposition)
```

Index

- * **diagnostics**
 - infotest, [2](#)
- * **htest**
 - infotest, [2](#)
- infotest, [2](#)
- lm, [2](#), [3](#)
- pchisq, [3](#)