









Original Articles

The corrected VIF (CVIF)

José Dias Curto 🔀 & José Castro Pinto

Views | CrossRef citations to date | Altmetric

Pages 1499-1507 | Received 09 Dec 2009, Accepted 24 Jun 2010, Published online: 30 Sep 2010



Abstract

In this paper, we propose a new corrected variance inflation factor (VIF) measure to evaluate the impact of the correlation among the explanatory variables in the variance of the ordinary least squares estimators. We show that the real impact on variance can be overestimated by the traditional VIF when the explanatory variables contain no redundant information about the dependent variable and a corrected version of this multicollinearity indicator becomes necessary.

Keywords:

corrected VIF near-multicollinearity

JEL classification:

C13 C52

Acknowledgements

We would like to express our thanks to Aris Spanos, Ewa Petkova, the editor and referees for their valuable comments and suggestions.

Notes

When increases, assuming that , , TSS and TSS $_{\rm i}$ remain constant, R $^{\rm 2}$ also increases.

The overall coefficient of determination, when all the explanatory variables are included in the model, is bigger than the sum of the coefficients of determination resulting from individual regressions between y and each one of the explanatory variables.

Thus, we also agree that 10 times higher is a substantial increase in the estimated variance of OLS estimators.

Related Research Data

The Advanced Theory of Statistics

Source: Population

A proposal for handling missing data

Source: Psychometrika

The problem of near-multicollinearity revisited: erratic vs systematic volatility

Source: Journal of Econometrics

A note on the use of the variance inflation factor for determining sample size in cluster randomized trials

Source: Journal of the Royal Statistical Society Series D (The Statistician)

VIF Regression: A Fast Regression Algorithm for Large Data

Source: Journal of the American Statistical Association

New Multicollinearity Indicators in Linear Regression Models

Source: International Statistical Review

Problems of Nonnormality and Multicollinearity for Forecasting Methods Based on Least

Squares



Related research (1)

People also read

Recommended articles

Cited by 103

Extracting the Variance Inflation Factor and Other Multicollinearity Diagnostics from Typical Regression Results >

Christopher Glen Thompson et al.

Basic and Applied Social Psychology

Published online: 1 Feb 2017

VIF Regression: A Fast Regression Algorithm for Large Data >

Dongyu Lin et al.

Journal of the American Statistical Association

Published online: 1 Jan 2012

Model-Dependent Variance Inflation Factor Cutoff Values >

Trevor A. Craney et al.

Quality Engineering

Published online: 15 Feb 2007

View more

Information for

Authors

R&D professionals

Editors

Librarians

Societies

Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

Help and information

Help and contact

Newsroom

All journals

Books

Keep up to date

Register to receive personalised research and resources by email



Sign me up











Accessibility



Copyright © 2025 Informa UK Limited Privacy policy Cookies Terms & conditions



Registered in England & Wales No. 01072954 5 Howick Place | London | SW1P 1WG