

4,503 162

Views | CrossRef citations to date | Altmetric 2

Original Articles

Variance Inflation Factor and Condition Number in multiple linear regression

R. Salmerón , C. B. García & J. García

Pages 2365-2384 | Received 19 Apr 2017, Accepted 07 Apr 2018, Published online: 22 Apr 2018

Cite this article <https://doi.org/10.1080/00949655.2018.1463376>

Check for updates

Sample our
Mathematics & Statistics
Journals
>> [Sign in here](#) to start your access
to the latest two volumes for 14 days

Full Article Figures & data References Citations Metrics

Reprints

We Care About Your Privacy

We and our 854 partners store and access personal data, like browsing data or unique identifiers, on your device. Selecting "I Accept" enables tracking technologies to support the purposes shown under "we and our partners process data to provide," whereas selecting "Reject All" or withdrawing your consent will disable them. If trackers are disabled, some content and ads you see may not be as relevant to you. You can resurface this menu to change your choices or withdraw consent at any time by clicking the ["privacy preferences"] link on the bottom of the webpage [or the floating icon on the bottom-left of the webpage, if applicable]. Your choices will have effect within our Website. For more details, refer to our Privacy Policy. [Here](#)

We and our partners process data to provide:

I Accept

Reject All

Show Purpose



ORCID

R. Salmerón <http://orcid.org/0000-0003-2589-4058>

C. B. García <http://orcid.org/0000-0003-1622-3877>

Notes

- 1 Note that the constant term disappears after the standardization of the data.
- 2 Note that, when data are standardized, the VIF and CN coincide with the result obtained from typified data.
- 3 Note that these examples are not regression models since $n=p$.
- 4 Denoting $X_1=1$, the auxiliary regression to calculate the VIF is expressed as $X_2=\gamma_1+w$, where it is verified that $\hat{\gamma}^2=X^{-2}$ and, consequently, $SSR=\sum_{i=1}^n(X_{2i}-X^{-2})^2=SST$. In this case, it is always verified that $R_{aux}^2=1$. The version of the previous regression with unit length data is given by $X_{2,lu}=\gamma_1 l_u+w$ where $X_{2,lu}$ is the vector of unit length data and l_u is the vector of unit length data. Then, $SSR=(1/n)\sum_{i=1}^n(X_{2i}-X^{-2})^2$ and, consequently, $R_{aux}^2=1$ and, then, $SSR=(1/n)\sum_{i=1}^n(X_{2i}-X^{-2})^2$ to the initial one.

Relate



Information for

- Authors
- R&D professionals
- Editors
- Librarians
- Societies

Opportunities

- Reprints and e-prints
- Advertising solutions
- Accelerated publication
- Corporate access solutions

Keep up to date

Register to receive personalised research and resources by email

 Sign me up

- 
- 
- 
- 
- 

Open access

- Overview
- Open journals
- Open Select
- Dove Medical Press
- F1000Research

Help and information

- Help and contact
- Newsroom
- All journals
- Books

Copyright

Accessib

Registered
5 Howick Pl

or & Francis Group
orma business

