

Journal of Applied Statistics >

Volume 43, 2016 - [Issue 10](#)

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Collinearity diagnostic applied in ridge estimation through the variance inflation factor

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Pages 1831-1849 | Received 22 Apr 2015, Accepted 12 Nov 2015, Published online: 25 Feb 2016

🗨️ Cite this article 🔗 <https://doi.org/10.1080/02664763.2015.1120712>



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ABSTRACT

The variance inflation factor (VIF) is used to detect the presence of linear relationships between two or more independent variables (i.e. collinearity) in the multiple linear regression model. However, the traditionally used VIF definitions encounter some problems when extended to the case of the ridge estimation (RE). This paper presents an extension of the VIF in RE by providing two alternative VIF expressions that overcome these problems in the general case. Some characteristics of these expressions are also presented and compared with the traditional expression. The results are illustrated with an economic example in the case of three independent variables and with a Monte Carlo simulation for the general case.

KEYWORDS:

Acknowledgments

We would like to thank referees for their detailed, encouraging and constructive reviews of our paper which clearly contributed to improving both the structure and the content of this manuscript.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Notes

1. Note that a standardized variable is the value of the variable minus its mean, divided by the square root of the number of observations multiplied by its variance while a typified variable is the value of the variable minus its mean, divided by its standard deviation.

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