

[Available Issues](#) | [Japanese](#)

>> [Publisher Site](#)

Author:

Keyword:

Search

[ADVANCED](#)



[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1348-6365

PRINT ISSN : 1882-2754

JOURNAL OF THE JAPAN STATISTICAL SOCIETY

Vol. 34 (2004) , No. 1 pp.101-109

[\[PDF \(156K\)\]](#) [\[References\]](#)

Exact Distributions of R^2 and Adjusted R^2 in a Linear Regression Model with Multivariate t Error Terms

Kazuhiro Ohtani¹⁾ and Hisashi Tanizaki¹⁾

1) Graduate School of Economics, Kobe University

Abstract: In this paper we consider a linear regression model when error terms obey a multivariate t distribution, and examine the effects of departure from normality of error terms on the exact distributions of the coefficient of determination (say, R^2) and adjusted R^2 (say, R^2). We derive the exact formulas for the density function, distribution function and m -th moment, and perform numerical analysis based on the exact formulas. It is shown that the upward bias of R^2 gets serious and the standard error of R^2 gets large as the degrees of freedom of the multivariate t error distribution (say, ν_0) get small. The confidence intervals of R^2 and R^2 are examined, and it is shown that when the values of ν_0 and the parent coefficient of determination (say, Φ) are small, the upper confidence limits are very large, relative to the value of Φ .

Key words: adjusted R^2 , exact distribution, interval estimation, multivariate t error terms, R^2

[\[PDF \(156K\)\]](#) [\[References\]](#)

Download Meta of Article [\[Help\]](#)

[RIS](#)

[BibTeX](#)

To cite this article:

Kazuhiro Ohtani and Hisashi Tanizaki; "Exact Distributions of R^2 and Adjusted R^2 in a Linear

JOI JST.JSTAGE/jjss/34.101

Copyright (c) 2005 Japan Statistical Society



[Japan Science and Technology Information Aggregator, Electronic](#)

