

Yilmaz, Ayfer Ezgi; Aktas, Serpil

Autocorrelation corrected standard error for two sample t-test under serial dependence.

(English) [Zbl 06870527](#)

[Hacet. J. Math. Stat. 46, No. 6, 1199-1210 \(2017\)](#)

Summary: The classical two-sample t-test assumes that observations are independent. A violation of this assumption could lead to inaccurate results and incorrectly analyzing data leads to erroneous statistical inferences. However, in real life applications, data are often recorded over time and serial correlation is unavoidable.

In this study, two new autocorrelation corrected standard errors are proposed for independent and correlated samples. These standard errors are replaced by the classical standard error in the presence of serially correlated samples in two samples t-test. Results based upon the simulation show that the proposed standard errors gives higher empirical power than other approaches.

MSC:

[62F03](#) Parametric hypothesis testing

Keywords:

[hypothesis testing](#); [two sample tests](#); [t-test](#); [serial dependence](#); [autocorrelation](#).

Full Text: [DOI](#)