

Mean square error comparison among variance estimators with known coefficient of variation

Laheetharan, A.^a and Wijekoon, P.^b

^a Department of Mathematics and Statistics, University of Jaffna, Jaffna, Sri Lanka

^b Department of Statistics and Computer Science, University of Peradeniya, Peradeniya, Sri Lanka

Abstract

The improved estimators for the population parameters were considered by several statisticians under various conditions. Recently Laheetharan and Wijekoon (Improved estimation of the population parameters when some additional information is available. Stat Papers doi:10:1007/s00362-008-0185-5, 2008) demonstrated a generalized procedure for obtaining optimal shrunken estimators, and derived such estimators for both population mean and variance when coefficient of variation is known. In this article the mean square errors of those estimators were compared, and a numerical illustration was done using the scaled mean square error loss as used by Kanefuji and Iwase (Stat Papers 39:377-388, 1998) to understand the efficiency of the estimators with increasing sample size.

Author keywords

Coefficient of variation; Optimal shrunken estimator; Scaled mean square error loss