On improved estimators of $K$ and $B$ in finite population

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Abstract
A class of estimators is proposed for estimating the population parameters $K$ and $B$ which improves the classes considered by Srivastava et al. (1986) and Sukhminder and Sarjinder (1988). The superiority of the proposed estimators is shown both analytically and by way of a simulation study.

Keywords: Regression coefficient, bias, Mean Square Error (MSE), efficiency.

1. Introduction

Many estimators are available in literature whose optimality depends on parameters $K = \rho C_y/C_x$ and $B = S_{xy}/S_x^2$, where $\rho$ is the population correlation coefficient between variables $x$ and $y$, $C_y$ and $C_x$ are the coefficients of variation, and $S_{xy}$ and $S_x^2$ are the covariance and variance respectively of $y$ and $x$. When the value of $K$ is unknown, it needs to be

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