Comparing the BLUEs under two different linear models

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Abstract

In this talk we consider two linear models, $M_1 = \{y, X\beta, V_1\}$ and $M_2 = \{y, X\beta, V_2\}$, say, which differ only in their covariance matrices. Our main focus lies on the equality of the BLUEs of $X\beta$ under these models.

The corresponding problems between the models $\{y, X\beta, I_n\}$ and $\{y, X\beta, V\}$, i.e., between OLSE and BLUE, are pretty well studied and numerous equivalent conditions for the equality of OLSE and BLUE have been introduced and several measures for the relative efficiency of the OLSE have been suggested. Our purpose is to do the corresponding considerations between the BLUEs of $X\beta$ under M_1 and M_2.

Keywords

Best linear unbiased estimator, Gauss-Markov model, Generalized least squares estimator, Ordinary least squares estimator.

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