

# Some further properties of BLUEs in full vs. small linear models

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## Abstract

In this talk we consider the partitioned linear model

$$M_{12} = \{\mathbf{y}, \mathbf{X}_1\beta_1 + \mathbf{X}_2\beta_2, \mathbf{V}\}$$

and the corresponding small model

$$M_1 = \{\mathbf{y}, \mathbf{X}_1\beta_1, \mathbf{V}\}.$$

We focus on comparing the best linear unbiased estimators, BLUEs, of  $\mathbf{X}_1\beta_1$  under  $M_{12}$  and  $M_1$ . In other words, we are interested in the effect of adding regressors on the BLUEs. Particular attention is paid on the consistency of the model, i.e., whether the realized value of the response vector  $y$  belongs to the column space of  $(\mathbf{X}_1 : \mathbf{V})$  or  $(\mathbf{X}_1 : \mathbf{X}_2 : \mathbf{V})$ .

## Keywords

Best linear unbiased estimator, BLUE, Löwner ordering, partitioned linear model, adding regressors.

## References

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