

Best Unbiased Estimators for Doubly Multivariate Data

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The article addresses the best unbiased estimators of the block compound symmetric covariance structure for m -variate observations with equal mean vector over each level of factor or each time point (model with structured mean vector). Under multivariate normality, the free-coordinate approach is used to obtain unbiased linear and quadratic estimates for the model parameters. Optimality of these estimators follows from sufficiency and completeness of their distributions. Additionally, strong consistency is proven. The properties of the estimators in the proposed model are compared with the ones in the model with unstructured mean vector (the mean vector changes over levels of factor or time points).

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