Best unbiased estimates for parameters of three-level multivariate data with doubly exchangeable covariance structure

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Abstract

There are analyzed the properties of the estimators of doubly exchangeable covariance structure for three-level data (m dimensional observation vector repeatedly measured at u locations and over v time points). This structure is an extension of the block compound symmetry covariance structure.

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. As unbiased estimators with minimal variance, they are consistent.

Keywords

Best unbiased estimates, Three-level multivariate data, Doubly exchangeable covariance structure.

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