

VARIANCE COMPONENTS ADMISSIBLE ESTIMATION FROM SOME
UNBALANCED DATA: FORMULAE FOR THE NESTED DESIGN

W. Klonecki
S. Zontek

Abstract: The paper gives unbiased and biased invariant quadratic estimators for variance components in unbalanced nested classification random models. The estimators, as well as their quadratic risk functions, have simple closed forms that are easy to calculate, the estimators are admissible in their classes and the unbiased estimators reduce to best unbiased estimators in cases when all cells are filled and the variance of the error terms is set to zero. Numerous numerical risk comparisons of the given estimators with MINQE(U, I) as well as with the lower bounds of the mean squared error of unbiased estimators are also included.

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Key words and phrases: -

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