

# Asymptotic expansion for the distribution of the linear discriminant function with 2-step monotone missing data

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## Abstract

We discuss the linear discriminant function with 2-step monotone missing data and the asymptotic expansion for the distribution of the function. In discriminant analysis, asymptotic expansions for the distributions of the discriminant functions play important roles for obtaining the asymptotic approximations of the probabilities of misclassification and so on. Okamoto (1963) derived an asymptotic expansion for the linear discriminant function with complete data. Similarly to Shutoh and Seo (2010), Shutoh (2010) derived an asymptotic expansion for the distribution of the linear discriminant function with 2-step monotone missing data, i.e., an extension for the result of Okamoto (1963) up to the terms of the first order. We present the outline for the derivation of the result of Shutoh (2010). Finally we give the numerical evaluations of our result by Monte Carlo simulation for some selected parameters.

## Keywords

Linear discriminant analysis, Asymptotic expansion, Probability of misclassification, Missing data.

## References

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