Notes on sample covariance matrix under informative sampling

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Abstract

In this paper I give some notes on the covariance between two variables in the sample compared to the population covariance. The informative sampling design is assumed. As a special case I consider two independent variables in the population and show that independence is preserved in the sample. We also give the general (although not very useful) formula for population covariance that exploits characteristics of sample distribution of considered variables. Some simulation examples will be presented during the presentation.