

# On Properties of QIC in Generalized Estimating Equations

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**Abstract:** The generalized estimating equations (GEE) approach has attracted considerable interest in analysis of correlated response data. An information criterion based on the quasi-likelihood in the GEE framework, called the quasi-likelihood under the independence model criterion (QIC), is proposed in the past literature. This paper studies the properties of the QIC. We establish a formal derivation of the QIC as an asymptotically unbiased estimator of the prediction risk based on the quasi-likelihood. Especially, when deriving the QIC, we explicitly take into account the effect of estimating the correlation matrix used in the GEE procedure. Furthermore, we discuss an adequacy of the risk function used in the derivation of the QIC.

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