0.1 Likelihood Distance

The likelihood distance is a global summary measure that expresses the joint influence of the subsets of observations, U, on all parameters in ϕ that were subject to updating. ? points out the likelihood distance gives the amount by which the log-likelihood of the model fitted from the full data changes if one were to estimate the model from a reduced-data estimates. Importantly $LD(\psi_{(U)})$ is not the log-likelihood obtained by fitting the model to the reduced data set. It is obtained by evaluating the likelihood function based on the full data set (containing all n observations) at the reduced-data estimates.

$$LD((\boldsymbol{U})) = 2[l(\hat{\boldsymbol{\phi}}) - l\hat{\boldsymbol{\phi}}_{\boldsymbol{\omega}}]$$

$$RLD((\boldsymbol{U})) = 2[l_R(\hat{\boldsymbol{\phi}}) - l_R(\hat{\boldsymbol{\phi}})_{\boldsymbol{\omega}}]$$