

Correction Note on New Multicollinearity Indicators

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In the paper “New multicollinearity indicators in linear regression model” that we published in *International Statistical Review* (2007), **75** (1), 114–121, we proposed new measures for the multicollinearity diagnostic in the linear regression model: DEF (Direct Effects Factor) and ICE (InterCorrelation Effect) that we claim ranging between 0 and 1. However, this is true only if the indirect effect of the independent variables on the dependent one, that we represent by

$2 \sum_{i=1}^m \sum_{j=i+1}^m p_{Y_i} \rho_{ij} p_{Y_j}$, is positive. Otherwise the measures can be negative.

To deal with this problem and to assure that DEF ranges between 0 and 1, we suggest to use the absolute value of the indirect effect in the DEF indicator:

$$DEF = \frac{\sum_{i=1}^m \sum_{j=1(j \neq i)}^m |p_{Y_i} \rho_{ij} p_{Y_j}|}{\sum_{i=1}^m p_{Y_i}^2 + \sum_{i=1}^m \sum_{j=1(j \neq i)}^m |p_{Y_i} \rho_{ij} p_{Y_j}|} \quad (1)$$

The interpretation remains the same: if the direct effects of all the explanatory variables are small when compared to the indirect ones, the DEF index is close to 1 and the explanatory variables must be strongly correlated.

The same procedure can be applied to the ICE indicator:

$$ICE_i = \frac{\sum_{j=1(i \neq j)}^m |p_{Y_i} \rho_{ij} p_{Y_j}|}{\sum_{i=1}^m \sum_{j=1(i \neq j)}^m |p_{Y_i} \rho_{ij} p_{Y_j}|} \quad (2)$$

where the absolute value is considered.

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