The Effect of Collinearity influential Observations on Collinear Data Set: A Monte Carlo Simulation Study.

ABSTRACT

In this study, the effect of different patterns of high leverages on the classical multicollinearity diagnostics and collinearity-influential measure is investigated. Specifically the investigation is focus on in which situations do these points become collinearity-enhancing or collinearity-reducing observations. Both the empirical and the Monte Carlo simulation results, in collinear data sets indicate that when high leverages exist in just one explanatory variable or when the values of the high leverages are in different positions of the two explanatory variables, these points will be collinearity-reducing observations. On the other hand, these high leverages are collinearity-enhancing observations when their values and positions are the same for the two collinear explanatory variables.

Keyword: High leverage points; Multicollinearity; Diagnostic methods; Condition number; Collinearity influential measure.