

## **Evaluation of the Effect of Outliers on the Goodness of Fit Index in Structural Equation Models and Proposal of Alternative Quality Adjustment Indices**

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When considering a sample characterized by the presence of outliers it is reasonable to assume that the results of the indices of quality of fit of a structural equation model, may be affected. The main consequence of the occurrence of this is that the researcher may be influenced to select an inappropriate model. This work is intended to suggest modifications in the construction of the goodness of fit index (GFI) using the robust methods Minimum Covariance Determinant Estimator (MCD) and Minimum Volume Ellipsoid (MVE) for estimating the unrestricted sample covariance matrix, leading to new indices called  $GFI_{(MCD)}$  and  $GFI_{(MVE)}$ . The validation of this proposal was made using Monte Carlo simulation methods, considering different sample sizes, differences between the unrestricted sample covariance matrix and those imposed by the structural model, and different numbers of outliers generated by distributions with deviations from symmetry and excess kurtosis. It was concluded that for larger samples size ( $n \geq 100$ ), given that the outliers are from distributions that are symmetrical, the  $GFI_{(MCD)}$  and  $GFI_{(MVE)}$  indices showed similar results, including samples with elevated levels of outliers.

Key Words: robust estimation, MCD, MVE, Monte Carlo simulation.