

Ivan Jacob Agaloos Pesigan

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References

Li et al.: Large-sample significance levels from multiply imputed data using moment-based statistics and an F reference distribution **Li-Raghunathan-Rubin-1991**

K. H. Li, Trivellore Eachambadi Raghunathan, and Donald B. Rubin. “Large-sample significance levels from multiply imputed data using moment-based statistics and an F reference distribution”. In: *Journal of the American Statistical Association* 86.416 (Dec. 1991), pp. 1065–1073. DOI: [10.1080/01621459.1991.10475152](https://doi.org/10.1080/01621459.1991.10475152).

Abstract: We present a procedure for computing significance levels from data sets whose missing values have been multiply imputed data. This procedure uses moment-based statistics, $m \leq 3$ repeated imputations, and an F reference distribution. When $m = \infty$, we show first that our procedure is essentially the same as the ideal procedure in cases of practical importance and, second, that its deviations from the ideal are basically a function of the coefficient of variation of the canonical ratios of complete to observed information. For small m our procedure’s performance is largely governed by this coefficient of variation and the mean of these ratios. Using simulation techniques with small m , we compare our procedure’s actual and nominal large-sample significance levels and conclude that it is essentially calibrated and thus represents a definite improvement over previously available procedures. Furthermore, we compare the large-sample power of the procedure as a function of m and other factors, such as the dimensionality of the estimand and fraction of missing information, to provide guidance on the choice of the number of imputations; generally, we find the loss of power due to small m to be quite modest in cases likely to occur in practice.