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Flexible MCAR testing for missing data with correlated response indicators

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Abstract. One of the most widely used tests for the missing completely at random (MCAR) assumption is Little's test [3] from 1988. However, as noted in 2024 by Aleksić [1], this test can suffer from substantial type I error distortion and loss of power when the data deviate from multivariate normality. Aleksić's test [1] performs better under such departures, but it is limited to a very narrow class of detectable alternatives. Its subsequent generalization [2] broadens the range of alternatives but introduces a new restriction: the response indicators must be uncorrelated. Here, we present a further generalization of this test that removes this assumption, and we compare its performance to both the original version and Little's MCAR test.

Keywords: MCAR; U-statistics; asymptotics.

References

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