Asymptotic expected sensitivity function and its applications to measures of monotone association

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Abstract

We introduce a new type of influence function, the asymptotic expected sensitivity function, which is often equivalent to but mathematically more tractable than the traditional one based on the Gâteaux derivative. To illustrate, we study the robustness of some important measures of association, including Spearman's rank correlation and Kendall's concordance measure, and the recently developed Chatterjee's correlation.

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