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Sensitivity analysis in correlated bivariate continuous and binary responses. (English)

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Summary: Factorization models for correlated binary and continuous responses are proposed. Full likelihood-based approach that yields maximum likelihood estimates of the model parameters is used. A common way to investigate if perturbations of model components influence key results of the analysis is to compare the results derived from the original and perturbed models using an influence graph. So small perturbation influence of the correlation parameters of the models on likelihood displacement and a general index of sensitivity (ISNI) are also studied. The model is illustrated using data from arthritis and body mass index data. The effect of systolic blood pressure, gender and age on arthritis and body mass index are investigated.

MSC:

62H20 Measures of association (correlation, canonical correlation, etc.)

Keywords:

factorization models; likelihood displacement; continuous and binary outcomes; medical data

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