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Título do trabalho: Power and reversal power links for binary regressions: An application for motor insurance policyholders

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Resumo:

In binary regression, symmetric links such as logit and probit are usually considered as standard. However, in the presence of unbalancing of ones and zeros, these links can be inappropriate and inflexible to fit the skewness in the response curve and likely to lead to misspecification. This is the case of covering some type of insurance, where it can be observed that the probability of a given binary response variable approaches zero at different rates than it approaches one. Furthermore, when usual links are considered, there is not a skewness parameter associated with the distribution chosen that, regardless of the linear predictor, is easily interpreted. In order to overcome such problems, a proposal for the construction of a set of new skew links is developed in this paper, where some of their properties are discussed. In this context, power links and their reversal versions are presented. A Bayesian inference approach using MCMC is developed for the presented models. The methodology is illustrated considering a sample of motor insurance policyholders selected randomly by gender. Results suggest that the proposed link functions are more appropriate than other alternative link functions commonly used in the literature.