



Power and Reversal Power Links for Binary Regressions

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

Keywords: Binary Regression; Bayesian Approach; MCMC; Power Links; Skewed Link.