



Influence of link function in the estimation and prediction for the beta regression model with random intercept.

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The determination of a link function considered to fit a non-normal mixed model is arbitrary, but what is the influence of this choice? For beta regression model with random intercept it is unknown reported works in the literature that have studied this influence. So, our purpose in this paper is to analyse, by means of simulation studies, the quality of estimation of the parameters of the model and the performance of the empirical best predictor by using the link functions: logit, complementary log-log and cauchit. Furthermore, analyses for models with different link functions for newborn weights data were performed. The simulation studies indicated that some of the link functions presented more favorable results for estimation than the others, but there was no significant differences in accuracy of the predicted values. Similar results were observed in the application. Thereby, the results of the studies conducted in this work elucidate about the necessary attention at the choice of link function to fit a beta regression model with random intercept according to the use purposes of this model.

Keywords: mixed model; empirical Bayes predictor; simulation study; newborn weight data.