Análisis de distribuciones a priori de los parámetros de escala del modelo ZIP [

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text (article)

Analítica

In this paper, it is proposed the evaluation of a set of prior distributions for the scale parameters of the Zero-Inﬂated Poisson Regression model (ZIP). Traditionally the inverse-gamma distribution is used as prior for scale parameters. Some studies have shown that when the values of the hyperparameters of this distribution are very small, inferences are not adequate. We focus on evaluating three prior distributions for modeling scale parameters: inverse-gamma; half Cauchy and scaled beta 2 (SBeta2). The half Cauchy has been used in the situation in question and has proven to work properly. The SBeta2 is a heavy-tailed distribution that has better performance at the origin and at the right tail. A simulation study is developed, with which we intend to analyze the eﬀect of the priordistributionassignedtothescaleparametersontheshrinkageoftheposterior estimates of parameters. Besides, the presence of outliers is evaluated regarding the adjustment of the corresponden values. This is done for each of the three prior distributions considering. The analysis focuses shrinkage of the posterior estimates of parameters and adjustment of outliers because the main criticisms on the use of the inverse-gamma distribution concentrate on this two issues. Finally an application is presented with real data
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