

Errata and Corrigenda: Bayesian Relative Importance Analysis of Logistic Regression Models: Journal of Statistics Applications & Probability Letters (Vol. 3 (2016):53)

Xiaoyin Wang

Department of Mathematics, Towson University, Towson, MD 21252, USA.

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The research paper “Bayesian relative importance analysis of logistic regression models” in Journal of Statistics Applications & Probability Letters (Vol. 3 (2016):53-69) extended the relative importance research question in the Wang et al. (2013) from the ordinary linear regression model to the logistic regression model applying the Bayesian approach with different likelihood functions, prior distributions and posterior distributions. The numerical example and simulation studies were all performed on the logistics regression base. The Wang et al (2013) and Wang (2016) are truly independent research about the predictors’ relative importance conducted in the Bayesian framework, and the previous paper was cited.

Unfortunately, duplicated language was found in the Wang (2016) and the Wang et al. (2013). The Wang (2016) and Wang et al. (2013) are within the same research line and similar methodology framework. I found myself unintentionally repeating language that was used in the previous paper when introducing the background of the research history to maintain the consistency for the convenience of the audience, and when describing the statistical procedure in order to retain the mathematical accuracy. The main concern was portions of three (3) paragraphs in the summary and concluding remarks section of the Wang (2016) that were reused unintentionally from the Wang et al (2013). It would be more accurate and explicit to be stated as follows.

1. As stated in the Wang et al (2013), “[r] elative importance analyses will permit a greater understanding of the particular role played by variables in a multiple regression equation. Crucially, these analyses can reveal the underlying impact of a particular predictor more accurately than standardized regression coefficients or simple correlations.”
2. This study affirms the benefits of Bayesian approach that were stated in the Wang et al (2013). “The [main] advantage of the Bayesian approach is that it allows the use of genuine prior information in addition to the information that is available in the observed data to produce better results.” In general, Bayesian methods provide a better approximation to the level of uncertainty than other approaches, which use only information provided by the model and the observed data. “In addition to providing useful statistics, such as, the mean and percentiles of the posterior distribution of the unknown parameters, Bayesian methods give more reliable results for small samples (Dunson 2000; Lee and Song 2004; Scheines, Hoijtink and Boomsma 1999).” (Wang et al. 2013)

*Corresponding author e-mail: xwang@towson.edu

3. This study extended the Bayesian relative important research to the logistic regression model. It would be interesting to see its performance in the study with more than one response variables. As pointed out in the Wang et al. (2013), “[o]ne of the central questions in a multivariate analysis of variance (MANOVA) considers identifying the dependent variables that are driving the significant multivariate F-test. Unfortunately, the correlations among the various dependent variables often make it difficult to accurately identify the role being played by the various dependent variables.”

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