

1135-VT-1184 **Xiaoya Meyer*** (xm930527@cameron.edu), Lawton, OK 73505, and **Hong Li**
(lhong@cameron.edu), Lawton, OK 73505. *A Comparison of Robust Logistic Regression Methods.*

Logistic regression (binary regression) is one of the most popular and widely used models for analyzing the effect of explanatory variables on a binary response variable. The maximum likelihood (ML) method has been generally adopted to estimate the regression parameters. However, the presence of an outliers and/or influential observations greatly reduces the accuracy of parameter estimates of ML method. A few robust regression methods such as Bianco-Yohai robust estimator (BY) and Mallows robust estimator were proposed and have been used in the presence of outliers. Li et. al. introduced a new robust binary regression model (TLRL) and a multinomial regression model in 2014. In this study we compare the performance of TLRL estimates with BY estimates using two real data sets which contain outliers. Besides, we conduct a simulation study to compare the performance of ML, TLRL and BY in the presence of outliers. We identify the outliers using diagnostic graphs and measures. Akaike Information Criterion is computed to assess the goodness of fit for each model. Results indicate that TLRL method performs better than the BY estimator for the examples we considered. TLRL method is as good as BY estimator in terms of bias and mean squared errors based on the simulation study. (Received September 20, 2017)