

Estimating bias and variances in bootstrap logistic regression for Umaru and impact data

ABSTRACT

We employed random-x bootstrap in binary logistic regression model. We investigate the effect of sample size and number of bootstrap replication on the bias and variance. The performance of estimated coefficient is measured based on the bias, variance, and confidence interval of the bootstrap estimates. In addition, we also focus on the length of confidence interval of the bootstrap estimates. We found that bias and variance decrease for larger sample size. We noticed that length of confidence intervals decrease as the sample size and number of bootstrap replication are getting large. The results show that the estimated coefficient is more precise as the sample size increases.

Keyword: Central limit theorem; Normal distribution; Sample size