

The analysis of crime data helps to unravel hidden trends that will aid in better understanding of crime pattern and the nature of those who commit such crimes. It also enables appropriate strategies to be put in place to control such crimes. Literature revealed that C4.5 and Naïve Bayes are effective classification algorithms that have been successfully applied in classification problems. Percentage split or 10 fold cross validation are two approaches to training and testing classifiers. The two approaches were adopted in the training and testing of Naïve Bayes and C4.5 classifiers on crime data collected from selected Nigerian Prisons. In this article, the crime dataset is classified into vulnerable and non-vulnerable for effective crime control strategies. The classification algorithms are applied individually on real crime data and their performance evaluation is analyzed using standard measures such as accuracy, time, Receivers Operating Characteristic (ROC). The classification algorithms are also applied on Breast Cancer and Irish data sets for reliability test. The result showed that C4.5 performed better with higher accuracy on the three dataset against Naïve Bayes. The result also revealed that the two classifiers performed better under percentage split approach compared to 10 fold validation approaches.