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Abstract
In regarding of transportation safety problems, multinomial logistic model is the most commonly used. There is no distribution assumption in this model but the results come from multinomial logistic model will be more reliable if the distribution of independent variables is normal. The other question comes from the collinearity of independent variables which causes biased prediction and increases the standard error.

Nearest neighbor algorithm is a well studied method which has been applied in different applications. In the field of transportation safety problems, there are few papers which use the nearest neighbor algorithm. In this paper, we will apply the nearest neighbor algorithm to the transportation safety problems to see whether the nearest neighbor algorithm can fit into these problems. Results are compared to the multinomial logistic , classification and regression tree (CART) and neural network.

According to the empirical results, neural network generates best results, nearest neighbor algorithm comes with the second, CART shows the third and multinomial logistic model is the last. The results from the first three methods differ in less than 3 percents. Even results come from the neatest neighbor algorithm are a little worse than the neural network but neural network will encounter the memory when the dataset becomes very large. When we look at the results and different size of datasets, this paper concludes the nearest neighbor algorithm can be fitted into the transportation safety problems
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