Abstract

Road traffic injuries are one of the leading causes of deaths around the world. These are more prominent in developing countries like India. For the improvement of road safety, it is important to understand various properties of it both temporally and spatially. Lack of detailed data in developing countries is a serious challenge in addressing traffic safety. In India traffic fatality data are the only reliable traffic safety related data available. However raw fatality numbers cannot be used to quantify risk of region, since several factors affect these fatalities and these factors need to be considered while estimating risks. This study is an attempt to develop a model based on readily available data for India to estimate traffic safety risk while considering the individual specific effect of various regions. Using cross sectional time series data, panel data, for 28 states of India over a period of 2004-08, a model is developed. Predictions of the developed model have been used for rank the states based on safety index. Effectiveness of emergency vehicle services and helmet usage laws has been assessed using the model developed. The model showed that emergency vehicle services did not have any significant impact on reduction of traffic fatalities. When applied with limited samples to evaluate the helmet usage laws, the model showed that helmet usage laws are not effective in reducing two wheeler fatalities. The lack of proper enforcement of traffic laws in India could be one of the reasons for the result.