

PREDICTION MODELLING FOR ROAD ACCIDENTS ON NATIONAL HIGHWAYS

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Abstract

Rapid growth of population coupled with increased economic activities has favored in tremendous growth of motor vehicles. This is one of the primary factors responsible for road accidents. It is observed that very few works have been carried out on statistical analysis of accidents particularly on two-lane National Highways. For this paper stretch of NH-7 has been selected from Bahadurpura to Shamshabad. The accidental data was collected for last five years, 2009-2013 from the Police Stations where FIR (First Information Report) was lodged. The collected data were analyzed to evaluate the effect of influencing parameters on accident rate. Heavy vehicles like truck are involved in maximum number of accidents on the selected stretch. It is estimated that a heavy vehicles is involved in almost 52% accidents followed by two-wheelers 14%, car 10% and bus 8%. There is no definite trend for monthly variation in accident on a study section but the accidents in month of July and January are generally higher. Accident rate in terms of number of accidents per km-year increases with traffic volume. But the accidents rate in terms of number of accident per million-vehicle kilometer-year (MVKY) decreases with increase in traffic volume. Accident rate per MVKY increases during the study year, whereas both injury and fatality rate per MVKY show a declining trend over the study period. The developed model for accident prediction represents that the number of accidents per-km-year increases with AADT and decreases with improvement in road condition.

Keywords : FIR, Statistical analysis, Multiple Regression model