## A Review: Road accidents model for Sampla city (Haryana)

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**Abstract**

Road traffic accidents have emerged as a critical public safety concern in rapidly urbanizing regions like Sampla city, Haryana. This study explores statistical and machine learning models to analyze and predict road accident patterns in the city, focusing on factors such as traffic volume, road conditions, weather influences, and time-specific variables. Utilizing data sourced from local traffic police records and transport departments, we develop regression and classification-based models to identify accident hotspots and high-risk periods. The findings indicate a strong correlation between peak traffic hours, poor road infrastructure, and increased accident rates. By integrating GIS mapping and predictive analytics, the study provides actionable insights for city planners, law enforcement, and transport authorities to enhance road safety through data-driven decision-making. The results underscore the importance of targeted interventions and real-time monitoring in mitigating road accidents in semi-urban towns like Sampla.

1. **Introduction**

The main problem in the study of traffic accident is to determine how the accident took place and how to prove such a course of the accident. Roadway’s security is a multispectral and multi structural problem inclusive of regular progress, execution of roadways, safeguarded arrangements of automobiles and thorough reverberation of accidents. Road accident is a major problem for future generation. In the recent past, spreading of wide chain of roads, rapid development of urban cities and auto mobilization has resulted in increase in number of accidents. Large amount of work has been reported for examining the accidents percentage taking in to consideration the different parameters such as population of the city and number of vehicles in that city for various metropolis like Delhi, Ahmadabad, Hyderabad, Chennai, Bangalore, and Kolkata.

**Road Safety Concern-** Human error in making split-second decisions is the leading cause of traffic accidents, especially among drivers and other vulnerable road users including pedestrians, cyclists, and rickshaw/cart pullers, according to research. It seems that excessive speed is the primary contributor to both types of mistakes. Inadequate road geometry, insufficient setback/sight distance, and overloading are only some of the causes of accidents. Seventy percent of drivers in our nation are at risk. Large numbers of lives are lost every year, and countless buildings are destroyed. It's a shame that India

**Traffic accidents in India-** A lot of accidents take place on the road side of urban and local areas. These accidents occur either because of the unawareness of the general public about the traffic rules or due to not follow up the traffic rules by local public Further, the advancements in arrangements of public transport have not been in accordance with transport interest whether it is in point of excellence and amount which is a major problem to be look upon at present.

1. **Literature Review**

The present units explain the history related to the roadside mishappenings in addition to accidental modelling and information about accidental percentage. Initially accidents classification i.e., major and minor accidents areelaborated followed by accidental modelling techniques. Finally, the parameters that must be utilized for collection of data in order to get the complete data for prediction of accidents prevalence. This report shows that basic rules and laws are avoided by user such as avoiding seat belt, wearing helmets and traffic signals are not used by the user properly.The ratio of the people obeying traffic rule to not obeying was 2:10. This ratio show that out of 10 people only 2 people follow the rules.

In India, the number of RTA fatalities are grown up year by year.Therefore, heavy Challan were imposed for not following the traffic rules and regulation in 2019 so that user start following the rules. However, in 2020 a decrease in accident percentage was reported that may be due to Covid-19.

The degree of roadside mishappening is at the peak in India. The reason for this improper geometry of the roads, rise in the automobile density and increasing population.

The substantial inclination of all roadside mishappening, mortalities and minor injuries
for 1970-2001 indicates a significant rise in the accidental percentage and mortalities form 1.14 lacs to 3.94 lacs and from 14.5 thousand to 80 thousand, respectively for 32 years duration.

Globally, India contributes for around ten percent of accidental mortalities. Despite of only 1% registered automobiles India dominate in RTA deaths with around 9% deaths around the globe. Further, as reported by National Transportation Planning and Research Centre (NTPRC) the roadways mishappening in India are thrice in comparison to other advanced communities.

1. **Mode of Study**

Current research workaims at developing Accidental Roadways Models for Samplamunicipal on specified draw out of DelhiRohtak (NH10) passing through Samplacity to Rohtakfrom Sampla **to kultana road.here the data to be collected from police station, traffic police, hospitals and other departments. Fake accidents are removed from this data.**from Sampla to Rohtak are collected from different sources. After analysis, models for identifying future accidental percentage weredeveloped. Based on this, corrective steps and advancements for preventing the mishappening were suggested. Methodology adopted in current research work has been represented in Fig. 3.1.The major problem on Sampla road NH-10 highway ispedestrian movement, red light symbol, no highway or underpass on the chowk. Further, there is the main crossing way for the students which is another major cause of roadside accidents on this highway

**1. Identification of the problem-** Due to the highly mixed nature of traffic on this road from people, students, two-wheeler or buses the accident ratio is increasing day by day. The pattern of the roads, no traffic lights ant type of facility increases the accidental cases day by day.

This problem has been recognized in the study on the basis of which the models are developed for road accidents forecast,these models will be used as a tool for suggesting corrective measures to improvethe level of road safety on this roadway.

2. Data collection and Tabulation

3. Data Analysis.

4.Naming of accident level enlarge and corrective actions

5. Model development

1. **Objective of the study**

The present study of ‘Road Accidents Models for Sampla City’ has been taken up with a view to collect and examine the accident data of a selected draw out of Delhi-Rohtak Road (NH10) passing through Sampla city,Sampla to Beriroad.The major aims of the research work are:

1. Collection of accidental data for the selected draw out of NH10 for last three years.
2. To study the data and agree on the trends of road accidents and identify the accident-horizontal stretches.
3. To carry out field study on the road for image study for understanding causes of roadside accidents.
4. Safe development of accidental area on the selected NH10 area for reducing the mishappenings by suggesting corrective events and improvements.
5. Implementation of regression models on the information collected for developing accidental models.

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