



INTERNATIONAL JOURNAL OF PURE AND APPLIED RESEARCH IN ENGINEERING AND TECHNOLOGY

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SPECIAL ISSUE FOR 2nd NATIONAL CONFERENCE ON "Recent Trends and Development in Civil Engineering"

A REVIEW ON ROAD ACCIDENT ANALYSIS

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Accepted Date: 22/12/2018; Published Date: 01/02/2019

Abstract: Speedy growth of population coupled with increased trade and industry activities has favoured in incredible growth of motor vehicles. This is one of the primary factors responsible for road accidents. This has resulted in a rapid growth of various types of traffic modes on the highways. In absence of proper safety measures and design of crossings Traffic from nearby villages merges with the through traffic in a very dangerous manner resulting a large number of traffic accidents and fatalities. Unfortunately, inadequate attention to safety several people loss of live, wealth and health. Based on the study, main reasons for this large number of accidents are lack of traffic signals, parking areas, markings and geometric designs of road, animals roaming on roads. To overcome these reasons, some suggestions are provided with conclusion to reduce the number of accidents and save the lives of human over the selected street.

Keywords: Road, Vehicle, Accident, Traffic Volume.



PAPER-QR CODE

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Access Online On:

www.ijpret.com

How to Cite This Article:

Harsiddh Chauhan, IJPRET, 2019; Volume 7 (6): 27-31

INTRODUCTION

Transportation network is a heart of a nation and transport services are considered as growth engine of economy. The boom in trade, commerce, and industry depends directly on the growth of roads of a country. More the lengths of the roads, more the prosperity of the nation. However, with the positive qualities, the by-product of transportation is pollution and accidents. A road accident refers to any accident involving at least one road vehicle, occurring on road open to public circulation, and in which at least one person is injured or killed. Road accidents are in of the major causes of death, injury and disability in all over the world both in developed and developing countries. With a broad estimate, in every 1 min, 2 people are killed and 95 people are severely injured or permanently disabled in traffic accidents worldwide. Developing countries are much more affected from traffic accidents than developed countries. According to the world health organization (WHO) statistics, 75% of deaths results from traffic accidents occurring in developing countries. Road traffic crashes occur on all continents and in every country of the world. Every year they take the lives of more than a million people and incapacitate many millions more. Pedestrians, users of non-motorized vehicles including bicycles, rick-shaws, carts and motor cyclist in low-income and middle-income countries carry a large proportion of the global burden of road traffic death and serious injury.

Nearly 1.3 million people die in road crashes each year, on average 3,287 deaths a day. Over 90% of road fatalities occur in low and middle income countries. Which have half of the world's vehicles? Road crashes cost \$518 billion globally; costing individual countries from 1-2% of their annual GDP. According to the World Health Organization, road traffic injuries caused estimated 1.5 million deaths.

Gujarat is one of the most industrially developed and agriculturally advanced fertile states of India. The road length in Gujarat has increased with time. As well with increase in road lengths no. of registered vehicles have also increased. Thus with increase in registered vehicles accident death rate have also gone up. In year 2005, 30515 accidents were registered and 5642 deaths. In year 2017, 19081 accidents were registered and 7289 deaths. The proportion of fatal accidents on state highway and other road is same i.e. 36%. Maximum proportion of total accidents occurred on other road during this period. The proportion of total accidents occurred on national highway is half of that of other roads.

LITERATURE REVIEW

1) Road accidents study based on Regression model.(A case study of Ahmedabad city) (2011):

Author: Manisha Minesh Desai, A. K. Patel

Road safety is treated as a transportation issue, not a public health issue, and road traffic injuries are called "accidents," though most could be prevented. As a result, many countries put far less effort into understanding and preventing road traffic injuries than they do into understanding and preventing diseases that do less harm. Over the last two decades consequent to a rapid increase in the number of Motor vehicles and a phenomenal expansion

of the road network, there has been a steep rise in the occurrence of road accidents in India. According to the experts at the National Transportation Planning and Research Centre (NTPRC), Model developed and calibrated in this study exhibits good results in terms of goodness of fit measures. In the predication success test, the model has predicated the observed value closely. Therefore, it can be concluded that the model developed for the case city Ahmedabad is acceptable.

2) Accident analysis and prediction of model on national highways(2012):

Author: Rakesh Kumar Singh & S. K. Suman

There is no definite trend for monthly variation in accident on a section of highway. But the accident in months of July is generally higher. It may be due to fast deterioration of earthen shoulder by this month. Accident in month of January has relatively higher value; it may be due to the foggy weather. During 2002, the Planning Commission had estimated that the loss suffered by the nation every year constitute about 3% of the GDP. The mortality rate (deaths/10000 vehicles) in India is nearly 14% as compared to less than 2% in developed countries. Planning Commission has forecasted that the total number of deaths in year 2015 to 154600. The percentage share of the accidents in NH is varying from 26 to 32% whereas the percentage share of persons killed is varying from 35 to 39.7%. Accidents rate per MVKY increase during the study year, whereas, both injury and fatality rate per MVKY show a declination in trend over time.

3) Road accident analysis a case study of Rajasthan state(2014):

Author: Dr.sabiha khan, prof. I.M. Kayamkhani

Road accident is a human tragedy, they involve high human suffering and monitoring cost in term of untimely death, injuries and loss of potential income. Rajasthan is the largest state of India in geographical perspective. An attempt has been made to predict situation of fatalities among the districts of Rajasthan. This paper can help policy makers to make accident management policy and implement remedial in the field of traffic safety.

4) Road Accident Data Analysis: A Data Mining Approach (2014):

Author: Forzani Moradkhani, Sommaya Ebrahimkhan, Ibrham Sadeghi Begham.

Many factors are related to traffic accidents, including infrastructure (environmental) such as (weather conditions and road signs), the vehicle itself (type and safety), the behaviour of traffic user (driver, pedestrian, and passengers) and characteristics of the driver (age, using seatbelt and gender). Furthermore, some of those factors are more important in determining the accident severity than others. In this study it is tried to choose the interesting and superior rules to provide a lot of valuable information for policies to provide better safety policies.

5) Road accident analysis: A case study of dahod to jhalod section of national highway.113(2015):

Author: Alkeshkumar B. labana, Vaidehi A. Parikh, Pravesh Parekh

The road transportation increases year by year, the rate of road crashed also increase with it. India is one of the developing countries, where the rate of road crashes is more than critical limit .this paper presents road accident situation in India and literature review related to road accident and safety. In this paper also highlights of the objective of study, methodology and accidental date of a case study on dahod to jhalod section of N.H.113

6) Study & Analysis of Accidents of some selected stretch in Haryana(2016):

Author: Vishwas Malik, Sandeep Pannu.

Haryana is one of the states experiencing a fast growth of road network through NHDP and PMGSY. This has resulted in a rapid growth of various types of traffic modes on the highways. In absence of proper safety measures and design of crossings Traffic from nearby villages merges with the through traffic in a very dangerous manner resulting a large number of traffic accidents and fatalities unfortunately, inadequate attention to safety several people loss of live, wealth and health. The total accidents are due to uncontrolled access and wrong side entry thus proper regulations of traffic should be maintained. Accident data for past few years is collected mainly from ministry of road transport and highways, National Crime records Bureau and Haryana police records. The data was analyzed to determine the level of safety on Haryana roads.

7) Accident Analysis Of “Patiala City” (2016):

Author: Aman Deep Singh, Er.Sachin Dass, Mr.Navdeep Asija

Improper road design and lack of proper road signs at T-junction and sharp curves also causes accidents. Safety for pedestrians is not provided.On the analysis of primary causes of accidents/type of collision, we find that head-on Collision, Rear-end collision and vehicle-pedestrian collision are the main causes of accidents. Because in the Patiala city many intersections are just after the end of the flyover, so that it responsible for Rear-end collision and also lack of traffic signs.Improper road design and lack of proper road signs at T-junctions and sharp curves also causes accidents. This is also one of the major causes of accidents. As per data recorded, the type of hitting vehicle concludes that car/jeep and truck cause maximum number of accidents.

CONCLUSION

After reviewing mentioned research paper, we have found thatthe road transportation increases year by year. Road accident may be occurring due to improper road design, absence of proper safety measures, design of crossings, traffic flow increasing, lack of proper road sign and signals. Road accident is a human tragedy, they involve high human suffering and monitoring cost in term of untimely death, injuries and loss of potential income.

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