Road Accident Analysis a Case Study on Jaipur to Ajmer Section of N.H.48

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Abstract— India is the developing country, where rate of accidents increase year by year. Road transportation increase year by year. This paper presents a categorization of accidents on Jaipur to Ajmer Section of N.H 48 in Rajasthan. Show the road condition of India. This paper presents how to safe on the road and safety our self.
Keywords: Road Geometry, Highway Safety, Black Spot, National Highways

I. INTRODUCTION

Road transport is a way that plays an important role in the goods and commute of the passengers. Road transport increase every year but with this, the rate of accidents also increase every year, India is a developing country. Road accident is a human phenomenon which involves high honorific pain, which leads to social loss as well as economic loss, its effect not only health and welfare but also on the economy, road safety has become a national concern. due to road traffic accidents, heavy injuries and death are caused due to the number of fast moving vehicles in developing countries. The collision on road is the main reason for the death of people between 5to 29 years, If the reason for the road accident is better evaluated, the design of the highway can be made in the right place .The number of accidents can be reduced seriously.

The road accident on NH48 has increased so that in the year 2016 and 2017 ,5915 accidents have been registered, The number of fast growing vehicle every year in developing countries is the main reason for a road accident that the number of vehicles rising, Low and middle income countries is the number of vehicles rising .

Till 2020 death and the third major causes of disability ,the family who are victims of the accident are completely scattered with the death, the seriously injured will often get more medical facilities in life .which family is poor that cannot bear the this expenditure and becomes the burden of his family.

A. Problem Statement:

Road accidents are one of the most appropriate problems in today's humanity. Every year 1.24 million people died in road accidents. The death of youth is highest in the age of 15-29 years, half of the deaths of the world's population are youths. "Accessible road users": pedestrians, cyclists and motorcyclists. "Accessible road users": pedestrians, cyclists and motorcyclists. Road accidents not only appoint enormous economic losses representing between 1-3 % of annual GDP in most countries but also causes great emotional and financial stress to the millions of families affected. India is the developing country, and the Highways are the most vulnerable places for the occurrence of the accident.

B. Scope of the Work:

The study area selected is Jaipur to Ajmer section of N.H.48 To carry out Road Serve Surveys and collect Road accidents data from Zonal Police stations of the study area. To carry out Road accident analysis and traffic surveys of the study area.

C. Objectives of Study:

− To Accurate Analyze Road accidents and identify black spots based on accident circumstance rate on the study area.
− To Develop Road accidental model.
− To Recommend Suggestions for reducing the circumstance rate and severity index of Road accidents on study area.

II. ROAD ACCIDENT SITUATION IN INDIA

In India 4,90,383 road accidents have been registered during in 2012 . Of these, about 25.1 per cent (1, 23,093) were fatal accidents. The number of people killed in the road accident was1,38,258,i.e.one of the deadly accidents (fatal) per 3.55% accidents. Between 2003-2012,the ratio of fatal accidents has increased from 18.1% to 25.1%in total road accidents.

The severity of road accidents, measured in terms of persons killed per 100 accidents, reduce for the first time to 28.2 during 2012 after it increased from 20.8 in 2002 to 28.6 in 2011.

A. Accidents in Terms of Classification of Roads:

Total road accident have occurred at 29.1% of the total number of road accident on national highway which 35.3% have dies, while the state highway is 24.2% of total accidents and 24.3% of the death is the main reason for the accident on the highway is that the national highway allows more speed of vehicles, which leads to high number of road accidents and deaths on the National Highway.

B. Spatial Distribution of Road Accidents (Urban Vis-À-Vis Rural)

In 2012, the road accidents in rural areas was more than the road accident in urban areas, before this number is 54.3% and after it has reduced 45.7% more fatalities cases in rural areas compared to urban areas. Rural areas had more fatalities (61.6 per cent) than urban areas (38.4 per cent).
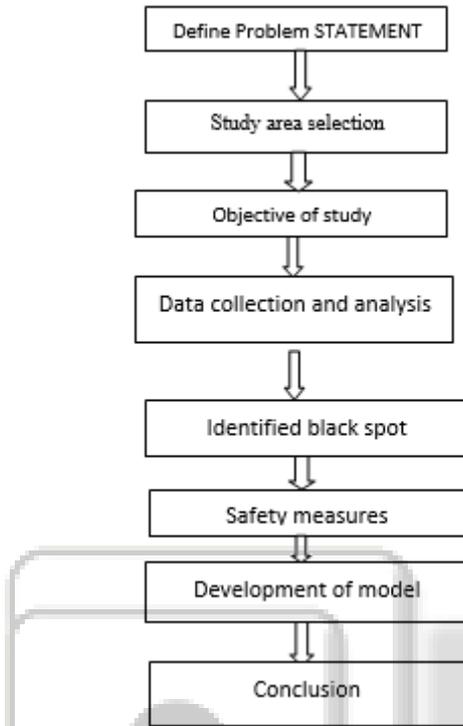
III. STUDY AREA

National Highway 48 is a national highway of india which passes through Delhi to Chennai, which passes through six states of India, the main city is Jaipur, Udaipur, Ahmedabad Surat, Mumbai, Pune, Bengalure and Vellore .The total length of highway is 2807km.

Study area is selected from Jaipur to Ajmer section of N.H.48. It is located in Rajasthan state. It is a four lane road

which passes through the rural area. Which is130km length of the highway. The study area is nearby villages, industries, market, colleges etc. it is unsecured road for safety. The biggest reason for the accident on the national highway is that local traffic has direct access to the national highway.

IV. METHODOLOGY

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│  Define Problem STATEMENT   │
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│     Study area selection    │
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│      Objective of study     │
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│  Data collection and analysis│
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│      Identified black spot  │
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│       Safety measures       │
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│     Development of model    │
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│         Conclusion          │
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The first step in methodology is to define problem statement; it covers the subject of work. Review, The second step is to select study area for accomplish thought of work and it should be suitable for the objective. After the selection of study area the objectives of work should be distinct. For achieving that goal the data collection and data analysis is going to be carried out. Once the data analyzed, on the bases of analysis results some remedial measure for road safety is going to be suggested. Last step is to give conclusion of this complete work done.

V. DATA COLLECTION

A. Road Accident Details of Study Area:

Road accident data has been taken from various police stations .Total fatal accidents occurred are 318, major accidents are 1468 and minor accidents occurred are 1312 in years of 2014 to 2018.

Year	Type of Accident			Total	Serverity Index
	Fatal	Major injury	Minor injury		
2014	65	317	279	661	9.83
2015	79	323	283	685	11.53
2016	68	310	270	648	10.49
2017	50	255	222	527	9.48
2018	56	263	258	577	9.70
total	318	1468	1312	3098	10.26

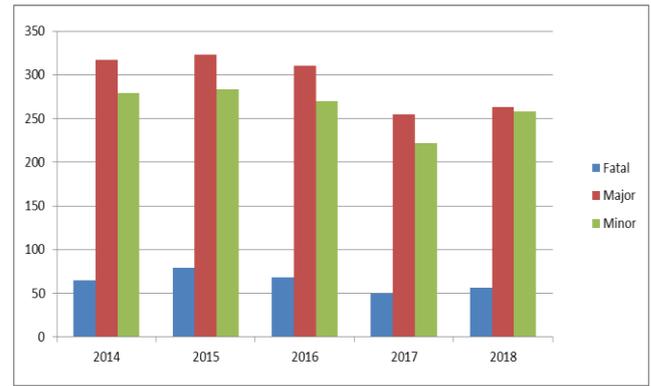Table 1: Accidents Classified According to year Wise

Fig. 1: Graphical representation of accident statistics from the year 2014 to 2018

VI. CONCLUSIONS

Many factors are effective in road accidents that are the criteria for highway safety. Fatal road accidents, This is one of the major reason for death. A survey done on jaipur –Ajmer national highway shows that if the highway is designed properly, then a lot of accidents can be reduced. A survey done in rural areas has shown that Children up to the age of 16 are being hunted most, therefore children should be educated about traffic. Cyclists should take care of the rules and should wear safety helmets, Special equipment should be installed in cars and buses. The biggest reason for the accident is that truck and other vehicles carry more than their capacity. Mostly trucks carry more than their capacity, due to which that accident rate is increase .The condition of the vehicle is not correct even thought the RTO department Permit is granted to run them.

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