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Identification and Improvement of Accident Black Spots on SH-1 and SH-38 Dist. Khargone (Madhya Pradesh) - A Case Study

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Abstract: ***we know that as the increment in population is directly connected to increment in vehicles. And if number of vehicles increase number of accidents is also increased. The reason of accidents are road parameters or human error. We find out from the previews analysis of data that 66% accidents are occur due to human errors and 33% due to the parameters of road.***

We have 3.3 million km network in India which consist all types of road just like National Highway (NH), State Highway (SH),, Major District Road (MDR) and other District Road (ODR).

The Road safety is major important considarable thing in present time because accident cases goes very high in past some years. So the identification of the some sites that called black spots are important for the better road safety policies.

So in this thesis we taking a route of a district khargone and find out the black spots, accidents cases, reason of accident cases and after the all calculations we also give the suggestion for the improvement of road.

Mandleshwar is a town and Nagar panchayat in the Khargone district of the India state of Madhya Pradesh. It is on the banks of Narmada River 8 kilometres (5.0 mi) east of Maheshwar and 99 kilometres (62 mi) south of Indore. It is a "Pavitra Nagri" as termed by the government of Madhya Pradesh, as it is an ancient town. It is the education centre of Maheshwar block, the location of the district court and district jail of Khargone, and is also the political centre of Maheshwar block

In mandleshwar city district Khargone roads has major connectivity and there are not big industries but these road carries large numbers of passengers to industrial area of Indore,and other state Gujarat ,Maharashtra ,Rajasthan through state highways and district road. Mandleshwar is also connected to other state highways just like:

Mandleshwar to barwaha(SH 38) 41.4 km

Mandleshwar to Mhow (SH 1) 56.2 km

Mandleshwar to Dhamnod (SH 38) 21.4 km

Mandleshwar to Khargone (SH 1) 47.0 km

This paper presents an analysis of accidents on small portion state highway city mandleshwar to connect the other cities.The data for analysis is collected for the period of 2015 to 2019.

I. INTRODUCTION

An improvement in socio-economic conditions of the people along with industrial and infrastructural development is bound to create an additional burden on roads by means of an increased number of vehicles and associated modes using the roads. Rapid growth of population coupled with increased economic activities has resulted in tremendous growth of motor vehicles. Road safety has become a major national concern considering its scale, gravity and its passive impact on national economy, public health and livelihood of people. Today, road traffic injuries hold a major share of causes of deaths, disabilities and hospitalization,with severe socio-economic costs, all around the world. Traffic accidents related deaths and injuries result in not only substantial economic losses but also serious mental and physical sufferings. The highway network is accelerated at high rate and safety for vehicular movement becomes a concern for everybody due to increased loss of lives and property along with fatal injuries. Highways (both national and State) which accounted for about 5% of total road network Witnessed a disproportionately large share of accidents of 55 % and accident related killings of 63% during the year 2018 and naturally become the focus of our attention. More accidents on these have been attributed to higher vehicles speeds and increasingly higher volume of traffic on these roads.

II. OBJECTIVE

The high socio-economic cost of the injuries and fatalities, occurring due to road accidents and the need for effective policies for curbing road accidents make it imperative to study the causes of road accidents. The present study aims to detect and

identify the role of alignment geometric elements on accident and prediction of accident rate through artificial intelligence system modelling.

- By study we can find out the causes of accidents and improvement corrective measures at potential locations.
- To develop a methodology for Road Safety.
- To examine/check safety features adopted in the selected section of state highways and find out deficiencies in the road network due to which accidents occur.
- To identify that the speed limits which are given their are matching with the actual vehicles speed on existing road profile of the state highway urban are connect the rural area section.
- To understand the nature of accidents and identify causes/problems along state highway
- To provide recommendations based on this study for reducing accidents on state highway.
- To have a comparative study of accident data of Madhya Pradesh state highway and India.

III.SCOPE OF STUDY

The main aim of this thesis work isgive to suggestions for improvement in transport safety at selected area and with the help of it accident cases can be decreased.

Its also help to improve the planning and modeling of better road safety.

IV.NEED OF STUDY

We can see that accident cases are increased day by day so its important to find out the reason behind the accidents with the help of this we can find out the black spots and road parameters which is responsible for the accidents and we can control them for future.

V. LITERATURE REVIEW

Srinivas Rao. B et. al. (2005): Conducted an accident study on NH-5 between Anakapalli to Visakhapatnam during the year 2003. Road where study done runs through urban, non- urban areas. The accident data for the last five years were collected from the related police station and analyzed thereafter. Traffic studies done on the road such as road Inventory, Signage inventory, Signals, Traffic volume count, Speed and Delay. These accident study was conducted to improvement measures.

Dr. K. Krishnamurthy et. al. (2010): They conducted the accident study on three National Highways stretches spanning over 165 kilometers in Kerala. First stretch was National Highway-17 from Ramanattukara to Thrikkanapuram, of 75 km length. Second stretch was NH-212 from Nadakkavu to Churam View Point, of 53 km length. Third stretch was 34 km from Ramanattukara to Malappuram, at NH-213.

Binu B Pillai et. al. (2011): In this they study on Causes and Consequences of Road Accidents in Kerala, they pointed out the main causes of road accidents in Kerala and suggested remedial measures for improve it. According to them, the main causes of road accidents in Kerala are over speeding of vehicles and poor surface conditions, pedestrian crossing are not available, junction design is not proper, and absence of proper bus bay, check barriers, sign boards etc.

Nagarajanet. al. (2012): Used remote sensing (RS) & GIS for identification of black spots and accident analysis for a particular stretch of NH-45 starting from Tambaram to Chengalpet. They find the eleven accident locations by using high resolution satellite map (IKONS) based on the non-spatial data collected from police department and the field survey. In field survey they collect the data of traffic volume, vehicle spot speed, and plotting of the study stretch using Arc GIS software.

Pavan, R. Vyas et. al. (2014): They study on road stretch of SH-85 to determine the accident locations by using the WSI method. The various factors, which tend to influence the occurrence of accidents on roads, are assigned weights on a scale of 1:10 in such a manner that the factor, which tends to increase the probability of the accidents are assigned lower weights. The total weights are calculated using a programmed Excel spreadsheet. For prioritization of the probable black spots different factor are considered and suitable weighs are given to each of these factors. These include road related factors like road geometrics, visibility conditions etc. which lead to accidents. For the study they select the following parameters: 1. Number of lanes in each direction 2. Width of road 3. Type of road 4. Signs & Signals 5. Types of vehicle.

VI.METHODOLOGY

A. We follow below methodology firstly decide the problem or the main reason for selecting this project on this road after that is the high accident cases on this road.

B. Than we select the objective that is improvement of accidents.

C. Than we decide the methods for this work.

D. In fourth step we do data collection from the selected sites.

E. In fifth step we analysis the collected data from the road.

F. After the analysis we have the outcomes.

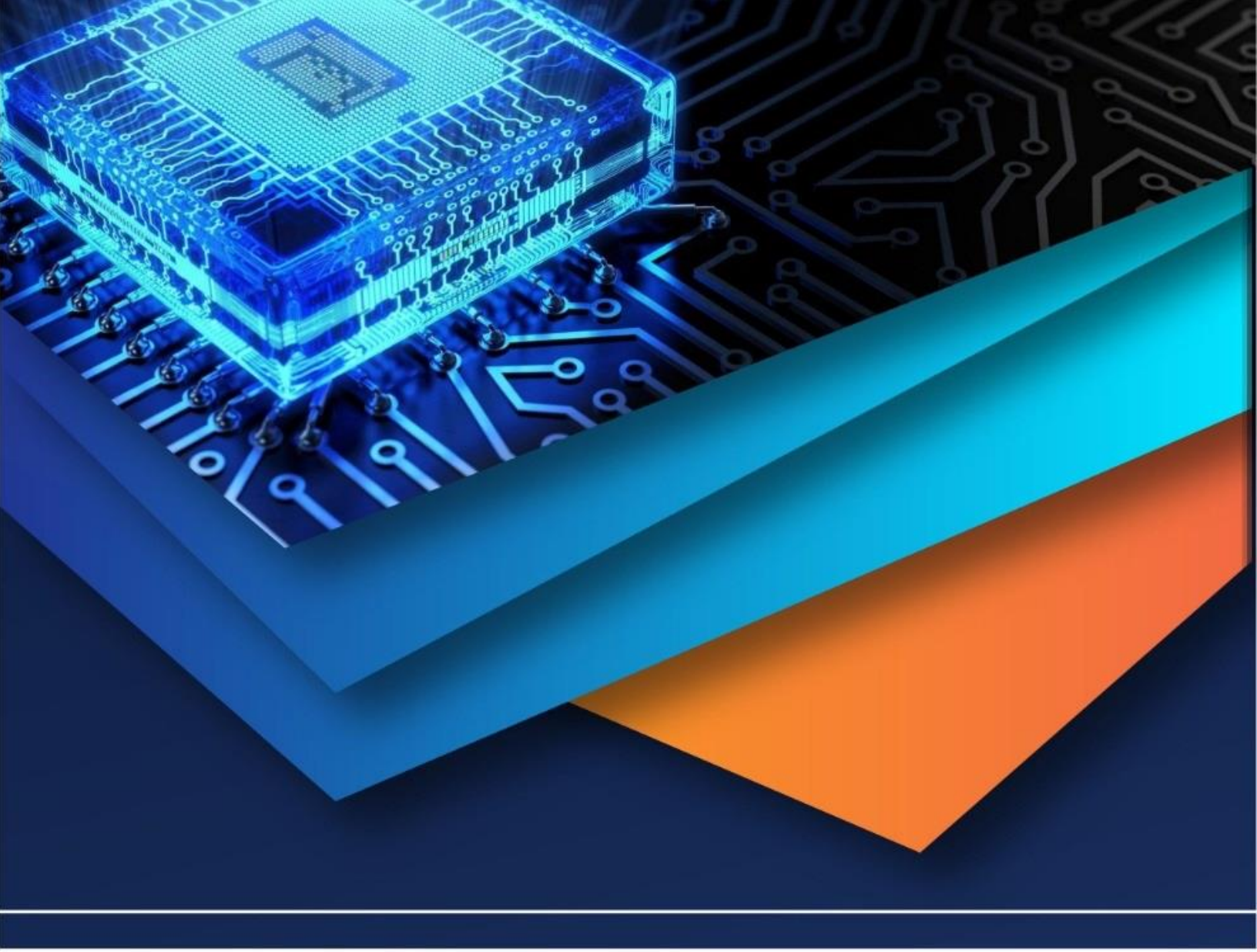
G. According the outcomes we give suggestion for improvement of road.

VII. CONCLUSIONS AND RESULT

The last conclusion is come out after the all analysis according the collected data and after that we give the suggestion for the awareness towards the accidents cases and improvement of the roads.

REFERENCES

[1] B. B. and Joseph, K. (2011). "Causes and Consequences of Road Accidents in Kerala", International Journal of Research in IT & Management, Vol. 1, pp.83-95.
[2] Krishnamurthy, K. and Anjaneyulu, M.V.L.R. (2010). "Black spot identification, analysis and improvement measures On selected national highway stretches in Kerala, India"01.11.
[3] Ministry of Road Transportation and Highway (2011). "Road transport year book (2011-12)," New Delhi.
[4] Nagarajan, M., and Cefil, M. (2012). "Identification of Black Spots & Accident Analysis on NH-45 Using Remote Sensing & GIS", International Journal of Civil Engineering Science, Vol. 1, pp.1-7.
[5] National Crime Records Bureau (2012). "Accidental Deaths & Suicides in India 2012," New Delhi.
[6] Pavan, R.; Vyas, Madan; L. Honnappanavar and Balakrishna, B.L.(2014). "Identification of black spots for safe commuting using weighted severity index and GIS" 3rd World Conference on Applied Sciences, Engineering & Technology 27-29, Kathmandu, Nepal.
[7] Rao, B. S.; Madhu., E.; Jalihal, S. and Reddy, T. S. (1988). "Accident Study on National Highway-5 between Anakapalli to Visakhapatnam", Proceedings of the Eastern Asia Society for Transportation Studies, Vol. 5.
[8] Recommendations about (1982). "The Alignment Survey and Geometric Design of Hill Roads", first revision, published by IRC.
[9] "Road Accidents in India 2010" (2011). Government of India Ministry of Road Transport and Highway Transport Research Wing, New Delhi, December.
[10] "Road User Satisfaction Survey in the state of Himachal Pradesh" (2012). by TNS India Private Limited.
[11] Srinivasan, N. S.; Iyer, V. S.; Chand, M. and Srinath, K. (1987). "Scientific identification and improvement of accident prone locations on national highways in Kerala, Journal of the Indian Road Congress, Vol.48 (3), pp.1-10.
[12] http://en.wikipedia.org/wiki/Accident_blackspot.
[13] http://list.jca.apc.org/public/sustran-discuss/1998-January/000421.html
[14] http://www.bhaskar.com/news-ht/NAT-can-america-help-make-indias-deadly-roads-safer-4967869-PHO.html?seq=1



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