Original Research Paper

Volume-10 | Issue-2 | February - 2020 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Geography

AN ANALYSIS OF ROAD ACCIDENTS IN INDIA

Himanshi Research Scholar, Dept. of Geography, Kurukshetra University, Kurukshetra

ABSTRACT Road accident is one of the major problems which any country can face. In this context, India experiences high number of road accidents and resulting injuries and deaths. In 2017, 4,64,910 accidents occurred, in which 4,70,975 person were injured and 1,47,913 person died. This paper examines the trend and level of road accidents, injuries and deaths in India and it also explores the causes responsible for road accidents in the country. The finding reveals that the number of road accidents and resulting injuries and fatalities has continuously increasing. Large number of accidents take place on roads categorized as 'other roads', followed by national and state highway. The young age-group is highly effected by road accidents. It is found that the main cause of road accidents is over speeding. It is suggested that several campaigns should take place to aware people about causes of accidents and also introduce them to safety measures.

KEYWORDS : Accidents, injuries, Highway, over speeding

INTRODUCTION

In this modern era, India is facing a number of problem and challenges with rapid development. Among them, one is road accidents and injuries, which takes lives of several peoples every year. Road is the dominant mode of transport and its contribution in economic development of country cannot be neglected. The rapid growth of urbanization, industrialization and migration gave birth to the necessity for travel among all age-groups. Thus, road transport plays a significant role in day-to-day life. But it is appalling that the growth of road transport has resulted into premature deaths, especially in the productive age-group. There is an alarming increase in road accidental death in India. In 2017, 4,64,910 accidents occurred, in which 4,70,975 person were injured and 1,47,913 person died. Moreover, among injury causing accidents, 26 percent were grievous. It can be said that the main causes for road accidents are poorly maintained roads and vehicles, harsh driving and negligent pedestrians (Lal, 1996). The expansion of roads is not adequate as per the increase in number of vehicles. This is the main reason of many vehicular accidents occurred every day. According to vehicle-wise population, India ranked 12th the world and in terms of number of motor accidents, it ranked 3rd (Sudesh kappor, 1993). In fact, traffic congestion is considered as one of the chief factor responsible for accident (Srinivasan and Vasudevan, 1998). A report says that about 80,000 fatal accidents have been reported in India as against only 45,000 in U.S.A, though India has only 35 million vehicles in United States (Ravi Kumar, 2002). The pedestrians also contribute to road accidents due to their slow pace relative to vehicle speeds, their unpredictable behavior etc. (Siegel, 1961). Among pedestrians, very young and elderly persons are most likely to be victim of an accident (Sullivian, 1964). There are some methods which can help in estimating future road accident. These are mechanical and analytical methods. The mechanical method analyses the past trends whereas analytical methods considers the factor which cause the historical trend pattern (Kalyanraman and Sehgal, 1968). There is a need for national attention and requires the cooperation of every citizen of the country (Mitra, 1970).

Database and Methodology

The data for the present study has been taken from secondary source. The report ' Road Accident in India- 2017' has been used, published by Ministry of Road Transport & Highways, Transport Research Wing, Govt. of India, New Delhi. In this paper, simple analytical tools have been taken into consideration to highlight the problem of road injuries and deaths in India.

Objectives of the study

The first objective is, to know the trend and level of road accidents, injuries and deaths in India. The second one is, to identify the causes responsible for road accidents in the country.

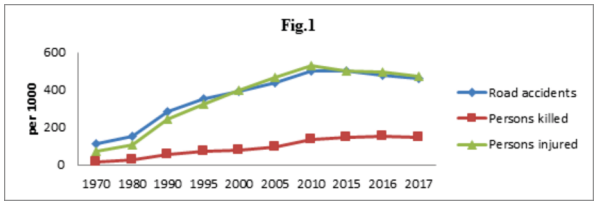
Analyses and Interpretation

Table 1: Major Parameters of Road Accident in India (1970-2017).

Year	No. of road accidents per thousand	No. of persons killed per thousand	No. of persons injured per thousand
1970	114	14	70
1980	153	24	109
1990	282	54	244
1995	351	70	323
2000	391	78	399
2005	439	94	465
2010	499	134	527
2015	501	146	500
2016	480	150	494
2017	464	147	470

Source: Ministry of Road Transport & Highways, Govt. of India, New Delhi

Fig.1



Source: Plotted from the data of table 1.

The temporal variation of road accidents shows an increasing trend from 1970 to 2015, from 114 per thousand to 501 per thousand, afterwards the number of accidents has been dropped to 480 per thousand in 2016 and further 464 per thousand in 2017. However, the drop down is not as much as remarkable, it is just marginal decline. The number of persons which have been killed by these accidents shows a rapid increase from 14 per thousand in 1970 to 147 per thousand in 2017. Road accidents had taken lives of several people and not only this; there is more number of peoples who got injured by these accidents. The number of person injured increased from 70 per thousand to 470 per thousand for the above period. In all, it has been observed that with time, there has been increase in both roads and vehicles but there development is not matching. Due to increase in vehicles, problem of traffic congestion had been created, which contributed as the major reason of traffic accident.

Table 2: Road accidents, fatalities and injuries by road category (2017).

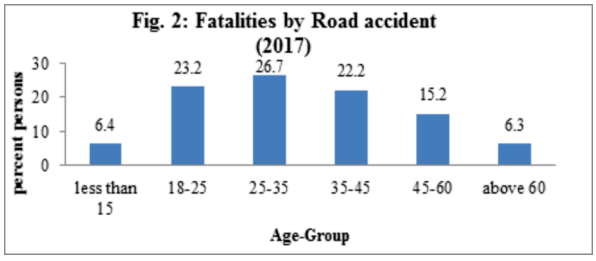
Road Category	No. of accidents	Person killed	Person injured
National highway	1,41,466 (30.4)	53,181 (36)	1,42,622 (30.3)
State highway	1,16,158 (25)	39,812 (26.9)	1,19,582 (25.4)
Other roads	2,07,286 (44.6)	54,920 (37.1)	2,08,771 (44.3)
Total	**4,64,910**	**1,47,913**	**4,70,975**

Figure in parentheses indicates percent share of total.

Source: Ministry of Road Transport & Highways, Govt. of India, New Delhi

The major share of accidents has been taken place on 'other roads', followed by national highway and state highway. This can be explained as the roads fallen in category of 'other roads' are less maintained as comparision to state and national highways, as a result a number of pot holes developed on them. Moreover, these roads are not blessed with lights and hence in absence of visibility more accidents occurred there. The national highways are strength of country and they

act as backbone of economy. They are well equipped with traffic lights, boards and hoardings, yet these roads become responsible for a number of fatalities. These roads are continuously busy roads, number of vehicles run on them for the whole day and night also. So, a mistake of one driver effect many vehicles at the same time and they also become victim of the accident. The share of state highways in accident, also, cannot be neglected.



Source: Ministry of Road Transport & Highways, Govt. of India, New Delhi

The most disturbing fact appears from the data is that we are losing the productive age-group from road accidents. The proportion of road fatalities is high for the age group 18-45 i.e. 72.1 percent deaths of total accident deaths belongs to this age group. The reason being that this age group is more movable, that is, people in this age group travelled because of education and employment. The children and elderly are least effected by road accidents as their daily life routine does not require as much travelling.

Table 3: Road accidents by weather condition (2017).

Weather condition	No. of accidents	Person killed	Person injured
Sunny/Clear	3,40,892 (73.3)	1,02,926 (69.6)	3,49,597 (74.2)
Rainy	44,010 (9.5)	13,142 (8.9)	46,004 (9.8)
Foggy & Misty	26,982 (5.8)	11,090 (7.5)	24,828 (5.3)
Hail/Sleet	3,078 (0.7)	1,523 (1.0)	2,888 (0.6)
Others	49,948 (10.7)	19,232 (13.0)	47,658 (10.1)
Total	**4,64,910**	**1,47,913**	**4,70,975**

Source: Ministry of Road Transport & Highways, Govt. of India, New Delhi

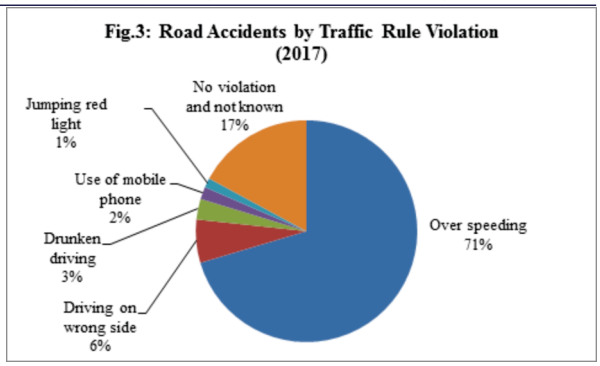
Weather conditions affect road accidents at a large scale. Due to adverse weather conditions the visibility is affected and the driver faces the problem while running the vehicle. On the other hand, when weather is clear than there are less chances of mishappening. But surprisingly, in 2017, 73.2 percent road accidents occurred on clear sunny day and about 16 percent of total accidents take place during adverse weather conditions. This shows that there are other reasons which are highly responsible for road accidents, resulting into fatalities and injuries.

Table 4: Road accidents, fatalities and injuries by road feature (2017).

Road feature	No. of accidents	Person killed	Person injured
Straight road	298351 (64.2)	91203 (61.7)	302952 (64.3)
Curved road	54077 (11.6)	17814 (12.0)	57346 (12.2)
Bridge	15514 (3.3)	5543 (3.7)	15839 (3.4)
Culvert	11600 (2.5)	4144 (2.8)	11974 (2.5)
Pot holes	9423 (2.0)	3597 (2.4)	8792 (1.9)
Steep grade	9124 (2.0)	3248 (2.2)	9753 (2.1)
Road under construction	11822 (2.5)	4250 (2.9)	11425 (2.4)
Others*	55000 (11.8)	18115 (12.2)	52896 (11.2)
Total	**464910**	**147913**	**470975**

* Any other feature not covered by the specified road features or not known; Source: Ministry of Road Transport & Highways, Govt. of India, New Delhi

Road features includes curved road, pot holes, culvert etc. driving on these types of features requires more attention, carefulness and skill. The study shows that 64.2 percent of total accidents have taken place on straight roads while accidents on pot holes, steep grade and curved roads together accounted for 15.6 percent. The share of construction roads in total accidents is 2.5 percent. This shows that road safety measures should not be ignored even on straight roads.



Source: Ministry of Road Transport & Highways, Govt. of India, New Delhi

Road accidents, in 2017, with respect to various traffic rule violation reveals that over speeding is the main cause of road accidents, accounted nearly 71 percent of total accidents. Driving on wrong side and drunken driving together constitute 9 percent of total accidents. The use of mobile phones and jumping red lights contributed 2 percent and 1 percent respectively. The other factors which do not include traffic rule violation or not known like, hit and run cases, shares about 17 percent of total accidents.

CONCLUSION

It is clear from above, that India is a victim of road accidents to a large extent and this problem is continuously increasing. As a result, many people lost their lives and get badly injured to that point at which they lost their body parts and are not able to carry out their daily work. The 'other roads' (other than state and national highway) are observed to be highly prone to accidents. This may be due to absence of road lights, poor road condition and lack of maintenance etc. The productive age-group is highly effected i.e. more vulnerable to these accidents. It cannot be denied that weather conditions is also one of the important determinant of road accidents, but the latest year data shows that major share of accident belongs to clear sunny day and also on straight roads rather than curved or construction roads. It seems that safety rules and regulation should also be followed on clear days and straight roads. Over speeding emerges as the main cause of road accidents, while other factors including, drunken driving, driving on wrong side etc. also contributed. It is suggested that driving license should be provided only to trained drivers, there should be strictness in issuing license. Also, stringent punishment should be enforced to prevent driving without license. Further, surveys of road condition should be take place in a year and the road which needs maintenance should be repaired. There should be separate walkways for pedestrians and their crossing should be designed in an effective way. Several Campaigns should take place to aware people about causes of accidents and also introduce them to safety measures like helmet, effect of overloading of vehicles etc. In this way, we can imagine a reduction in road accidents, injuries and fatalities.

REFERENCES

1. G. Ravikumar, (2002). "Long term strategy to improve road and transport system", Indian Journal of Transport Management, April-June 2002.
2. H.W. Sullivan, (1964). "On the care and preservation of pedestrians", National Safety Council Transaction, pp 40-43.
3. R. Srinivasan and S. Vasudevan, (1998). "Road safety in India-some potential solutions" Indian Journal of Transport Management, pp 120-125.
4. 'Road Accidents in India-2017', Ministry of Road Transport & Highways, Govt. of India, New Delhi.
5. S.T. Siegel, (1961). "The role of pedestrian control in traffic regulation", Institute of Traffic Engineers Proceedings, pp 72-80.
6. S.R. Kalyanraman & T.R. Sehgal, (1968). "Methods for Estimating Future Road Traffic, Journal of the Indian Roads Congress", Vol. XXXI, No.3,
7. Sudesh Kappor, (1993) "Road Safety needs high priority" Indian Journal of Transport Management, pp 322-329.
8. V.M. Lal, (1996). "Road Safety and best" Indian Journal of Transport Management, pp 336-340.