

## A Comparative Study of Accident Safety on Haryana Roads

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**ABSTRACT:** Accident safety is one of the major concerns for the economy in a developing country. According to UN report, world economy loses over US \$50 billion per year in accident crashes. The vehicular population is increasing at very high rate from the beginning of 21<sup>st</sup> century. From observing the studies done in past, the vehicle population is doubled within 5 years duration but the length of roads existing has not been able to cope up with this increased traffic. Hence, mixed traffic conditions are arising and congestions take place. After certain limit it causes accidents which causes fatalities. In India, an accident occurs almost every minute. Various factors affecting this problem are lack of traffic management measures, improper placement of traffic control devices, roadside hazards and ribbon development along the road network. This paper focusses on importance of accident safety analysis on Indian roads as India is being one of the largest contributor for fatalities and casualties caused because of accidents as well as the state of safety on Haryana roads comparing different aspects. Traffic and accident data for various countries is gathered and it is compared with Indian scenario. And in the same manner a comparison is made between Haryana and India. The various factors viz. population, number of fatal accidents, accident severity, vehicular population and traffic density are considered, compared and discussed.

**Keywords:** Accidents, Comparison, fatalities, Safety Analysis.

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### I. INTRODUCTION

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 cause of death, disabilities and hospitalization, with severe socio-economic costs, all around the world. The United Nations declared 2011-20 as decade of action on road safety so that accident severity is minimized by the end of this decade. We are half way through the UN Decade of Action but still have a long way to go. This calls for a very systematic Mission to be taken up for making a difference and to achieve the target.

As per current reports, most of the developing countries are facing problem of lack of road safety. Accident fatalities rate in developing countries like India is high in the comparison with that in the developed countries. Accidents deaths constitute 40% of the total accident deaths in India, which is not sufficiently recognized by public.

### II. NEED FOR THE STUDY

According to the NATPAC, in comparison to developed countries, the total number of accidents is almost three times more. Accident rate for India is as high as 35 (per 1000 vehicles) whereas it ranges from 4 to 10 for developed countries. Though accidents cause loss of human life and property including trauma and suffering, road accidents are often not placed under the category of disasters. Its magnitude is not often realized and they are looked upon as singular events. Because of this, there is lack of organized effort to counteract the problem of accidents even though tolls keep mounting with increases in road length and vehicular traffic.

### III. GLOBAL SCENARIO OF ACCIDENTS

Many times road safety is regarded as a transportation issue and often referred as "accidents" though most of them could be prevented. As a result, many countries put less emphasis on understanding and preventing road traffic injuries than they do for diseases which cause much less harm. Every day as many as 140,000 people are injured on the world's roads. More than 3,000 die and some 15,000 are disabled for life. Each of those people has a network of family and friends who are also affected, emotionally and otherwise. Families struggle with poverty when they lose a breadwinner or have the added expense of caring for disabled family members [1]. In 1990, road accidents laid ninth place out of over hundred separately identified causes of death and disability. It is forecasted that by the year 2020, road accidents will move up to sixth place [2]. The number of deaths and injuries has been reducing steadily in the developed countries whereas the number of deaths in the Asian countries is rising at an alarming rate. During 1981-1993, the number of road accident deaths has increased in Asia Pacific region by 95% whereas the total population increased only by 24%. Many countries

are experiencing an annual vehicle growth rate of around 17%. Examples are India (17%), China (18%), Vietnam (18%) and Malaysia (15%) [3]. Almost 11% of world's reported fatalities are due to road traffic accidents. Globally, it is estimated that on an average, Road traffic accident sum up to 1% of the country's Gross Domestic Product (GDP) [4].

#### **IV. ACCIDENT SCENARIO IN INDIA**

Due to increase in the number of vehicles and a huge expansion of the road network, there has been a sudden rise in the occurrence of road accidents in India. According to the expert sat the National Transportation Planning and Research Centre (NTPRC), the number of road accidents in India is three times higher than that prevailing in developed countries. Comparing to world figures, Indians contribute about 6 to 7 percent of the total number of persons killed per annum. This causes huge loss in our economy due to fatalities, injury, property damages and insurance costs etc. Every hour, 13 people die due to road accidents, which is among the highest in the world. Every 10th person who dies in road accidents is an Indian. Road fatalities in India have been rising at the rate of 8 percent a year and, paradoxically, have only increase de venas massive amounts of money have been pumped into improving road sand adding new highways, flyovers and express ways.

#### **V. CROSS COUNTRY COMPARISON OF ACCIDENTS AND FATALITIES**

The following table shows the fatality rate of accident related deaths and injuries between different countries. The analysis of deaths because of accidents gives us a clear idea about the severity of accidents in that country [5]

COUNTRY	Killed per 1 lakh population	Injured per 1 lakh population
Australia	6.06	5.53
Argentina	7.64	23.12
China	4.88	16.41
India	11.43	42.46
Indonesia	8.28	27.72
United Kingdom	2.97	24.81
Russia	18.72	140.52

#### **VI. COMPARISON BETWEEN INDIA AND CHINA**

Year	No. of Road Accidents	
	India	China
2008	439255	450254
2009	460920	378781
2010	479216	327209
2011	484704	265204
2012	486384	238351
2013	499628	219521

Year	No. of persons killed	
	India	China
2008	94968	98738
2009	105749	89455
2010	114444	81649
2011	119860	73484
2012	125660	67759
2013	134513	65225

As we can see from the above tables, over the years China has maintained to reduce the number of accidents as well as the fatalities whereas in India it is constantly on increase.

As per the National Crime Records Bureau, as many as 461 people died and 1301 more were injured every day in traffic accidents in the country in 2013. This makes it 19 deaths every hour- or more than one death every three minutes.

The reduction in accidents in China were achieved by combination of various factors some of which were strong political willpower, Implementation of Road Safety Law, Proper technical education to the drivers and a strict traffic regulating authority.

As India is on the verge of becoming a superpower, the micro level understanding of road safety has become essential for the country. Study of accidents based on “macro” scale include the tabulation of numbers and rates unrelated to true risk, which is meaningless to the general public, including drivers and passengers. In addition, micro analysis is still a manual, individualized activity, and has not been systematized or applied to any great degree to automated data-processing procedures. Thus, when accidents are seen as true incidents, which results from a combination of circumstances or a chain of related events, they lend themselves to engineering study and systematic analysis.

## VII. COMPARISON BETWEEN HARYANA AND INDIA

Statistics for India

YEAR	NO OF ACCIDENTS	NO OF PERSON KILLED	ACCIDENT SEVERITY
2008	484704	119860	24.73
2009	486384	125660	25.83
2010	499628	134513	26.9
2011	497686	142485	28.6
2012	490383	138258	28.2
2013	486476	137572	28.1

(Accident severity=No. of person killed per 100 accidents)

Statistics for Haryana

YEAR	NO OF ACCIDENTS	NO OF PERSON KILLED	ACCIDENT SEVERITY
2008	11596	4766	41.1
2009	11915	4993	41.9
2010	11195	4719	42.4
2011	11128	4762	42.8
2012	11065	4446	44.2
2013	10481	4517	43.1

(Accident severity=No. of person killed per 100 accidents)

Geographically, Haryana plays an important role in connecting national capital Delhi to Punjab, Rajasthan and Himachal Pradesh. As we can see from above comparison, the severity of accidents is way more for Haryana as compared to India. It may be declining from 2012 onwards but it is alarmingly more than average Indian scenario. The reasons behind this condition may be given as lack of traffic discipline, poor traffic management, lack of authority control etc.

## VIII. CONCLUSION

From the observed data it can be said that India has to take strong measures to counteract and reduce the problem of road accidents as it harms the overall national growth. In order to do that not only the government has to come up with a strong Road safety law implementing agency but also there should be an active public participation involved. Major remedial measures should be taken to better the condition of road traffic.

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