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The Importance of Accident Safety Analysis on Indian Roads

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Abstract—*The population is increasing day by day and from the beginning of this century the vehicle population is going on increasing. 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. According to UN report, world economy loses over US $50 billion per year in accident crashes. 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. Traffic and accident data for various countries is gathered and it is compared with Indian scenario. The various factors viz. population, number of fatal accidents, accident severity, vehicular population and traffic density are considered, compared and discussed. At the end it can be said that India provides an inhospitable environment for vehicular as well as pedestrian traffic in comparison to other countries.*

1. INTRODUCTION

Road safety is an issue of national concern, considering its magnitude and gravity and the consequent negative impacts on the economy, public health and the general welfare of the people. Today, Road Traffic Injuries are one of the leading causes of deaths, disabilities and hospitalizations, with severe socioeconomic costs, across the world. The United Nations has rightly proclaimed 2011-20 as the decade of action on road safety so that the present rising trend of road accident stabilizes and is reversed by the year 2020. . 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. Itisnowwellestablishedthatmanydevelopingcountriesfaceaserio usproblemof road accidents. Accident fatalities rate in developing countries like India is high in the comparison with that in the developing countries. Traffic accidentsindeathsconstitute40%ofthetotalaccidentdeathsinIndi a, whichisnotsufficientlyrecognizedby lay by public.

Need of the study

Asper the NATPA Cumbers of road accidents in India is three time shigherthanthatprevailingin developedcountries. Then umber of accidents for1000 vehiclesinIndiaisashighas 35 whilethefigureranges from 4 to 10 indeveloped countries. Despitecausingloss of humanlife and property, together with the associated trauma and suffering, road accident sareoften not placed under the category of disasters. Them agnitude of the problem is of tennotrealized, andthese are looked upon as strayincidences. Thisleadstolackof organized support for efforts tomitigateroadaccidents, and tolls keeps mounting with increases in road length and vehicular traffic.

Global scenario of accidents

Too often, roadsafetyistreatedasatransportation issue, nota public health issue, androad traffic injuries arecalled “accidents, ” though most could be prevented. Asaresult, manycountriesput farlesseffort into understanding and preventingroadtrafficinjuriesthanthey dointounderstanding andpreventingdiseasesthatdolessharm. Everydayasmany as140000peopleareinjuredontheworld’sroads. Morethan3, 000dieandsome15, 000aredisabledforlife. Eachof those peoplehasanetworkoffamily, friends, neighbors, colleagues or classmates who are also affected, emotionally and otherwise. Families struggle with poverty when they lose a breadwinnerorhavetheaddedexpense of caringfordisabled family members.

In1990, roadaccidents laidinninthplaceoutofover hundredseparatelyidentifiedcausesofdeathanddisability. It isforecasted thatbytheyear2020, roadaccidents willmove uptosixthplace. Thenumber ofdeaths andinjuries has beenreducingsteadilyin thedevelopedcountrieswhereasthe number of deaths in the Asian countries is rising at an alarmingrate. During1981-1993, thenumberof roadaccident deathshasincreasedinAsiaPacificregion by95%whereas thetotalpopulationincreasedonlyby24%. Manycountries areexperiencinganannualvehiclegrowthrateof around17%. Examples areIndia(17%), China(18%), Vietnam(18%)and Malaysia(15%). Almost 11% of worldsreportedfatalities are

due to road traffic accidents. Globally, it is estimated that on an average, Road traffic accident cost up to 1% of the country's Gross Domestic Product (GDP).

Accident scenario in India

In crease in the number of Motor vehicles and a phenomenal expansionof the road network, there has been a steep rise in the occurrence of road accidents in India. According to the expertsat the National Transportation Planning and Research Centre(NTPRC), the number of road accidents in In dais threetimes higherthan thatprevailingin developedcountries. Comparingtoworld figures 6to7percentofthetotal number of person skilled perineum, in the whole world are Indians. Thiscauseshugelossinoureconomydue to fatalities, in jury, propertydamages andinsurance costsetc. Every hour, 13 people die due to road accidents, the highest in the world. Every 10th person who dies in road accidentsisanIndian. RoadfatalitiesinIndiahavebeenrising attherateof8percentayearand, paradoxically, haveonly increasedevenasmassive amounts of moneyhave been pumped intoimprovingroadsandadding new highways, flyovers and expressways.

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.

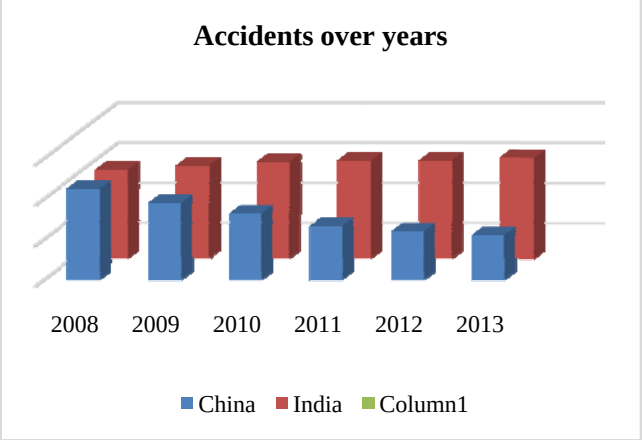
COUNTRY	Killed per 1 lakh population	Injured per 1 lakh population
Australia	6. 06	5. 53
Argentina	7. 64	23. 12
China	4. 88	16. 41
India	11. 43	42. 46
Indonesia	8. 28	27. 72
United Kingdom	2. 97	24. 81
Russia	18. 72	140. 52

Comparison between India and China (2008-2013)

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

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.



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

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 accidentsbasedon "macro" scaleincludesthetabulation of numbersandrates unrelatedtotruerisk, whichis meaninglesstothegeneral public, includingdriversandpassengers. Inaddition, micro analysisis stillamanual, individualizedactivity, andhas not beensystematizedor appliedtoanygreatdegree to automateddata-processingprocedures. Thus, when accidentsareseenastrueincidents, whichresults froma combination ofcircumstancesorachainofrelatedevents, theylendthemselvesto engineeringstudyandsystematic analysis. Despitecausinglossofhumanlifeandproperty, togetherwiththe associatedtraumaandsuffering, road accidentsareoftennotplacedunderthecategoryofdisasters. Themagnitude of the problems of tennotrealized, and these arelookeduponas strayincidences. Thisleadstolackof organizedsupport for efforts tomitigateroadaccidents, and tolls keepsmountingwith in creases in road length and vehicular traffic.

2. 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.

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