

Study on Variation in Accident with Population and Deaths Variation with Registered Vehicles

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Abstract: Each year more than 1.2 million people die in road accident around the world. The majority of the accident (about 52%) is of cyclist, bikers and cars. The traffic accident situation in Hissar police station boundary as well as India is really alarming and the loss of lives and property damages are expected to continue if proper corrective measure are not taken accordingly by applying proper engineering measure through extensive research and investigations. This paper presents the various aspects of traffic accidents in Hissar city, Haryana, India. Data on accident were collected from Hissar, SP office in the city for three years 2012, 2013, 2014. It was found that a total 255 accidents occurred during this period. Almost 30 per cent victims were between ages 22 to 35 years. Bus and truck accidents comprise 23 per cent road accidents. Therefore, this paper deals with the variation in accident with population and deaths variation with registered vehicles models to and the simultaneous influence of human factors, road, vehicle, weather condition and traffic features including traffic volume and flow speed on the crash severity in urban highways. Obtained results illustrate that the variable such as highways width, head-on collision, type of vehicle at fault, ignoring lateral clearance, following distance, inability to control the vehicle, violating the permissible velocity and deviation to left by drivers are most significant factors that increase crash severity in urban highways.

Keywords: Human Factor, Registered Vehicles, Highways, Weather Condition, Population Effect.

1. INTRODUCTION

Most of the cities in India are witnessing phenomenon of ever increasing growth of vehicular traffic due to population explosion coupled with large scale socio-economic activities. Rapid growth of population coupled with increased economic activities has resulted in tremendous growth of motor vehicles. Traffic accident related deaths and injuries result in not only substantial economic losses but also serious physical and mental sufferings. Many researchers including smeed have devoted their research to the area of road accident and reported pioneering work on the analysis of road accident. Developing countries are much more affected from traffic accidents than developed countries. The highway network is accelerated at a fast rate and the safety of vehicular movements becomes a concern for everybody due to reporting of loss of lives and properties along with fatal injuries and periodical obstruction of traffic flow. National highways provide the efficient mobility and accessibility function. The increasing road accidents have created social problems due to loss of lives and human miseries. Road accidents are essentially caused by interactions of the vehicles, road users and roadway conditions. Each of these basic elements comprises a number of sub elements like pavement characteristics, geometric features, traffic characteristics, road user's behavior, vehicle design, driver's characteristics and environmental aspects. Causation of accidents can be well understood with help of analysis of accident statistics, which can provide clues to many factors of road accidents. Many researchers have devoted their research to the area of road accident and reported pioneering work on the analysis of road accidents.



Fig 1.1: Road Map of Hissar.

2. LITERATURE REVIEW

According to the experts at the national transportation planning and research centre (NTPRC) the number of road accidents in India is 3 times higher than that prevailing in developed countries. A report on road accidents in India has shown that speeding, mixing driving with drinking, low use of helmets and child restraints are the main contributing factors of road accidents fatalities. In 2004, road accident was top 9th cause of death. World Health Organization has revealed in its first ever Global Status Report on Road safety that more people die in road accidents in India than anywhere else in world, including the more populous China. According to S K Singh and at all conducted a case-study on 'Road Accident Analysis of Patna City' made a conclusion that congestion and encroachment are the main reasons behind road accidents performed a case study. M. Ziyadi and at all presented the study on prediction of accident severity using artificial neuron network technique. This study revealed that ANN models can be used to estimate crash severity and significant crash related factors.

3. STUDY AREA

From the present scenario of road accident around the world one can easily realize that, how much, this sudden occurrence is crucial to mankind and how much it is necessary to study on this dangerous occurrence to save the mankind. Here in this paper Hissar police station boundary area, situated under Hissar city, have been taken as the study area because it is evident that the city area is highly vulnerable to road accident all station is the main industrial division under Hissar city area. The area under Hissar police station is 404308 hectares having 10 police stations under 2 divisions in total.

The major objectives of this study are-

- To study the variation in accident with population in took place during 2012-2014.
- To study the variation in deaths with number of registered vehicle took place during 2012-2014.

4. MATERIALS AND METHODS

4.1 Data Base:

The data base which is used to analysis this study are as follows-

- Population wise distribution of accident for the year of 2012, 2013, 2014.
- Victims wise distribution of fatalities and injuries in Hissar SP office boundary for the year 2012,23013,2014.
- Variation in deaths with number of registered vehicles for year 2012, 2013, 2014.

4.2 Methodology:

The methodology that has been use to prepare this paper from its start to end are as follows-

4.3 Data Collection:

All the required data which have been used to give a structure to this paper are being collected from the SP office of Hissar city, Haryana, India.

4.4 Collection of Map:

The Hissar SP office boundary map and Road network map of this particular area are also being collected from the office or PWD B&R.

4.5 Data Analysis and Presentation:

- Variation in Accidents with Population:

Table 4.1 shows the number of road accidents in Hissar city. It is clearly seen from the table that number of accidents is increasing and decreasing with increase in population every year. From 2012 to 2014 population has increased 312567 to 335645. There were 84 road accidents registered in 2012. In 2013 accident are 92 with 10% increase with the efforts of local authorities’ year 2014 shows a deflection with decrease in accidents. Fig 4.1 shows the variation in accidents with the population.

Table 4.1 Road Accidents in Hissar City

S.No	Year	Accidents	Population
1	2012	84 (00.0)	312567(00.0)
2	2013	92 (10) % increase	323350 (3.33) increase
3	2014	79 (6) % decrease	335645(6.99) increase

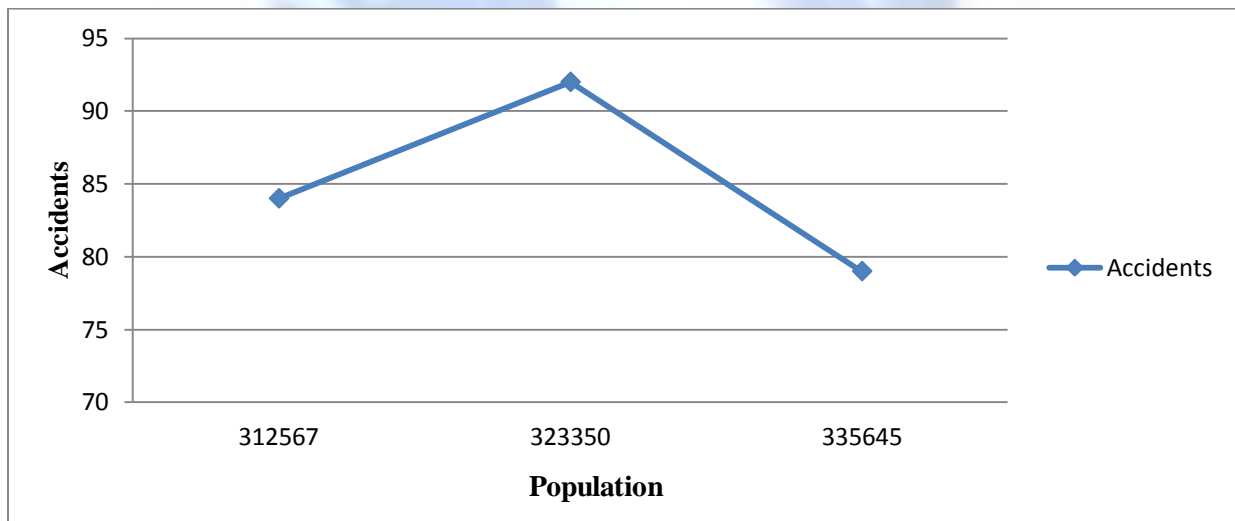


Fig 4.1 Variation in Road Accidents with Population

- Variation in Deaths with number of Registered Vehicle:

Table 4.2 it is clear that deaths due to road accidents are showing an increasing and decreasing with the number of vehicle registered from 2012 to 2014. It is noted here that vehicles registered in hisar city from 2012 to 2014 have g 18190 to 23702 Fig. 4.2 show the of variation in deaths with the number of registered vehicles.

Table 4.2 Deaths due to Number of Registered vehicles.

S.No	Year	Deaths	Registered vehicles
1	2012	15(00.0)	18190(00.0)
2	2013	23(34.7)%increase	20345(10.5)
3	2014	17(26)%decrease	23702(23.2)

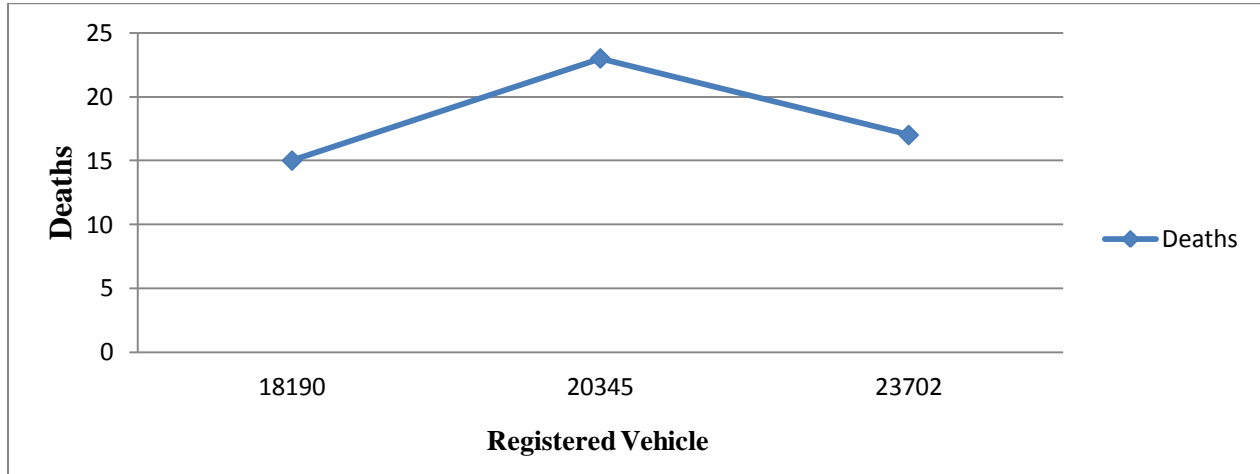


Fig 4.2: Variation in Deaths with Registered Vehicles

5. RESULTS AND DISCUSSION

In this pleasant study in year 2012 (84) accident are happened in year 2013 (92) accident are happened in comparison of both year 10% increase of accident. But in 2014 (79) accident s are happened and 6% decrease in comparison of 2012 year. The study of death with the number of registered vehicle in year 2012 number of 15 people were fatal and in the year 2013, 23 people were fatal in comparison of the both year 34.7% increase in the death rate. Moreover, in the year 2014, 17 people were fatal and 26% decrease in death rate in comparison of 2013 year.



Fig 5.1 Insufficient Public Transport



Fig 5.2 Poor Rules and Regulation



Fig 5.3 Poor Mobility



Fig 5.4 Heavy traffic in the city

CONCLUSION

In this study we conclude that following:

- 1) In this conclude that poor rule is major reason of accidents.
- 2) In this population are increase year wise 2012, 2013, 2014 and accident are in 2012, 84 in Hissar city in 2013 the accident percentage are 10% increase with 3.33% population increase.
- 3) In this conclude that in year 2014 6% accident increase in population are 6.99% increases in comparison of 2012.
- 4) In it conclude that insufficient and proper public transports are also the reason of accident.

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