

# THE CHANGING FACETS OF ROAD SAFETY IN INDIA

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## Abstract

Amidst increasing motorization in India, the infrastructure also needs to be developed at the same pace. The road networks are expanding but the safety has been compromised. Road safety is a highly debated topic in Indian context due to various factors. Reports issued by National Crime Records Bureau and other official reports have stated increasing number of road accidents in the country. More consistent efforts are being undertaken by the government for ensuring road safety. With the developments in technology, new methods are being adopted like use of air ambulances and drones, Automatic Speed Enforcement System (ASES), Automatic Video Incident Detection /system (AVIDS), E-Challan system. Although Government has undertaken numerous efforts like amendments have been proposed in India Motor Vehicles Act by the Ministry of Road Transport and Highways. In this scenario, it is critical to understand that the existing efforts towards ensuring road safety are not sufficient.

**Keywords:** Road safety, roadways, technological development,

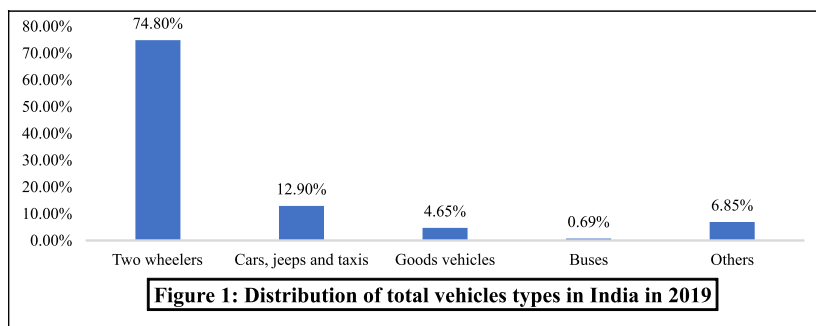
## 1. Introduction

India is home to the second longest road network in the world (54,72,144 kilometres), 4.8% of which are highways. National highways (97991kms) and state highways constitute (167109 kms) 1.79% and 3.05% of all roads in India. In the last decade (2001 to 2011), the road length increased from 2,52,001 kms

to 4,64,294 kms, an increase by 84 %. Nearly 20-22 kms of roads were added daily against stated addition of nearly 40 kms per day. Amidst this road infrastructure expansion, safety parameters have lagged behind as seen by a continuous increase in RTIs and deaths. Road safety can be ensured with 3E framework i.e. engineering, education and enforcement. As a matter of fact, the road engineering has to be a very vital part of road safety.

## **2. Macro factors which have brought a change in road safety scenario in India**

The combination of infrastructure development with technological development has improved the scenario of road safety in India. Even the manufacturers of vehicles are resorting to latest technologies for ensuring best possible safety measures to users. The licensing policy and the road safety is also interlinked. There are various factors which have brought a change in road safety scenario in the nation. Figure 1 shows the distribution of different vehicles in India in the year 2019. As the number of two wheelers is highest in the nation, hence more efforts are to be undertaken for ensuring their safety.



Trade, commerce, industry, urbanisation, migration, and other factors influence macroeconomic and developmental policies and programmes. Over the previous two decades, successive Indian governments' liberalised economic policies have produced major improvements in all of these areas. The size of Indian population and the per capita income has also been rising constantly which indicates that the purchasing power of the citizens has also increased. As the exposure towards transport environment increases, India witnessed high growth in number of vehicles being purchased. The pace at which infrastructure is developing is not same as the pace of motorization. The association between industrialization, road expansion and motorization has been a significant one.

However, these changes and the accompanying growth has not been uniform, with glaring disparities in different parts of the country.

Some initiatives used for development of road infrastructure in India are listed below:

- **Use of Information Technology in ensuring road safety:** The rapid advancements in technology have gained lot of momentum and have played a key role in different industries. In the automobile industry and even in construction industry use of latest technology has helped in ensuring better safety of people.
- **Use of air ambulances and drones:** The golden quadrilateral had been a landmark change in the history of Indian Roadways. But there was need of advancements for providing better medical services. The concept of air ambulances and drones have made the provision of medical facilities to even the remotest corner of the country.
- **Automatic Speed Enforcement System (ASES):** Over speeding is one of the reason for many road accidents in the country. The ASES systems helps in identifying the driver who crosses the speed limit in a particular stretch. The Tamil Nadu government is in process of implementing it in various districts of the state.
- **Automatic Video Incident Detection /system (AVIDS):** For highways and expressways, the Video Incident Detection System (VIDS) delivers accurate and dependable vehicle tracking with automatic incident detection. The system aids in highway safety and generates e-Challans for traffic violators.
- **E-Challan system:** The number of automobiles on the road, as well as traffic offences, in India's major cities is increasing over time. E-challans (electronic receipts) for traffic offences has been adopted as a measure to keep a check on violation of rules in the country.
- **Optical Fibre Cable (FC) Network for Corridor:** Many states have taken an initiative to develop a common corridor for optic fibre cables along roads in the city. It is also one of the major changes taking place in roadways in India.

### 3. Reasons for road safety being a concern

As road safety comes under the purview of many different ministries in India, implementing a well-coordinated approach at both and national level. Few reasons for increasing road accidents are listed below in figure 2.

● Aggressive driving
● Driving on wrong side
● Use of mobile phones while driving
● Not wearing helmets
● Not wearing seat belt
● Overloading
● Wrong use of Zebra Crossing
● Wrong overtaking
● Unauthorised parking

**Figure 2: Reasons for increase in road accidents in India**

The figure 2 shows few reasons due to which the road accidents are increasing in the nation. But all these reasons relate to negligence of drivers only. Another aspect of the road safety issue in the status of infrastructural development in the country (Haghani et al, 2022). Some efforts are required to develop the infrastructure as well.

### 4. Suggestions for improving road safety in India

- **Establishment of a leading road safety agency:** It is required that all aspects pertaining to road safety should be guided by one single agency to avoid dual subordination. As one of the concerns identified in rising concern of road safety is involvement of multiple agencies.
- **Notification of legislations:** Few studies have also stated that lack of awareness is one of the reasons for increasing road accidents in India. Increase in notifications related to seat belts, driving, helmets, road signs, diversions in all Indian states will assist in dealing with the concern.
- **Road safety audit:** The poor conditions of roads can be improved by consistent monitoring (Huvarinen et al., 2017). Road safety audit ensures independent assessment of the potential road safety problems associated with road improvement schemes.

- **Creation of Motor Vehicle Accident Fund:** In India, it is mandatory to get vehicles insured but citizens are not very inclined towards getting themselves insured.
- **Vehicle safety requirements:** In the technologically advanced era, the vehicle safety requirements can be met in a better manner. Some stringent laws should be applicable to ensure safety on individuals.
- **Well-defined road safety policies:** It is needed that the road safety policies are well defined by all sectors including transport, health, education and enforcement. The collaborative effort of all the organisations together will lead to a developed and structured road safety mechanism in the country.
- **Integrated approaches to tackle multifactorial causes and risks:** Experts are deputed by the authorities who identify the dangerous and risk prone areas for driving. Best possible solutions are developed to reduce the risk in those areas or to warning signs are installed for drivers in those areas.
- **Strong and implementable road safety action plans:** A well drafted plan will be of no use if it is not implemented well. The structural engineers are employed in the departments dealing with roadways in India who devise appropriate strategies for ensuring safety of citizens on road. Some more efforts can be undertaken in this direction.

Beyond the abovementioned factors some other measures can be working on intersectoral coordination and convergence of actions, data-driven interventions, adopting safe systems approaches, setting and working towards achievable and measurable targets, scaling up enforcement mechanisms and carrying out education campaigns through community engagement.

## 5. Conclusion

The numerous conversations and debates in India concerning road safety indicate to a critical need for data-driven and implementable methods within a road safety framework. Such a framework can bring experts and policymakers together in order to develop consensus among administrators and political leadership for implementation of a successful programme. Because India is a federal state, the roles and responsibilities for road safety are shared by

the centre and the states. As a result, a framework for central-level activities with equivalent state-level activities is required. The changing scenario of road safety needs to be identified and efforts are to be channelised in a useful direction using latest technological developments.

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