

Road Safety and Youth in India: A Secondary Data Analysis of Trends, Severity and Policy Implications, 2015–2025

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Abstract

Background: Road traffic crashes remain a major public-health, social and economic problem in India, with young and economically productive age groups bearing a disproportionate share of fatalities.

Objective: This study analyses trends in road accidents, fatalities and injuries in India during 2015–2025, with particular emphasis on the vulnerability of youth and young adults, and derives policy implications for youth-focused road-safety interventions.

Methods: The study adopts a descriptive and analytical research design based exclusively on secondary quantitative data published by the Ministry of Road Transport and Highways (MoRTH), Government of India, Lok Sabha and Rajya Sabha replies, Press Information Bureau releases and peer-reviewed literature. Percentage analysis, year-on-year growth rate, compound annual growth rate (CAGR), trend analysis and accident-severity analysis (fatalities per 100 accidents) were used.

Results: Road accidents declined from 5,05,770 in 2015 to 3,72,181 in 2020 following COVID-19-related mobility restrictions, before rising to 5,13,563 in 2025. Fatalities rose from 1,46,555 in 2015 to 1,83,382 in 2025, an increase of approximately 25 per cent, compared with an increase of only about 1.5 per cent in the number of accidents over the same period (CAGR: accidents $\approx 0.15\%$ p.a.; fatalities $\approx 2.27\%$ p.a.). Accident severity rose from 29.0 fatalities per 100 accidents in 2015 to 35.7 in 2025. Official MoRTH reports and parliamentary replies consistently show that road users aged 18–45 account for roughly two-thirds of all road fatalities (66.4% in 2023), and that 66% of deaths in 2025 involved persons aged 18–34. Over-speeding remained the dominant reported risk factor, associated with an estimated 1,17,000–1,20,000 fatalities annually in recent years.

Conclusion: The evidence indicates that India's road-safety challenge is increasingly one of crash severity rather than crash frequency, and that this severity is concentrated among youth and working-age populations. The study argues that youth road safety should be approached as a public-health, human-capital and economic-development issue and not merely a traffic-management issue, and recommends an integrated response combining education, engineering, enforcement and emergency care (the 4E framework), building on recent government initiatives such as the cashless treatment and Rah-veer Good Samaritan schemes.

Keywords: road safety; youth; road traffic accidents; fatalities; road traffic injuries; secondary data; India; human capital; accident severity; 2015–2025.

1. INTRODUCTION

Road transport plays a crucial role in India's economic development by facilitating the movement of people, goods and services. Rapid motorisation, urbanisation, expansion of road infrastructure and increasing individual mobility have significantly increased dependence on road transport.

This increasing mobility has, however, generated substantial road-safety challenges. Road crashes result in fatalities, injuries, disabilities, property damage and loss of productive working years, with consequences that extend beyond individual victims to households, employers, communities and the wider economy. Globally, road traffic injuries are estimated to kill more than 1.19 million people each year, with low- and middle-income countries — India among them — bearing a disproportionate share of this burden (World Health Organization, 2023).

The youth dimension of road safety is particularly important. Young people constitute a highly mobile section of the population and increasingly use motorcycles, scooters and cars for education, employment and social activities, exposing them significantly to road-traffic risk. Official MoRTH reports have repeatedly identified this pattern: the age group of 18–45 years accounted for 68.6% of fatalities in 2016, 72.1% in 2017, 69.3% in 2019, 69.0% in 2020 and 66.4% in 2023 (Ministry of Road Transport and Highways, various years). In 2025, the Union Minister for Road Transport and Highways informed Parliament that 66% of road deaths involved persons aged 18–34 (News on Air, 2025).

In 2023 alone, India reported 4,80,583 road accidents, 1,72,890 fatalities and 4,62,825 injuries (Ministry of Road Transport and Highways, 2024). The longer-term trend is equally significant: although accidents and fatalities declined sharply during the COVID-19 period, they subsequently increased and, according to data tabled in the Lok Sabha, reached 5,13,563 accidents and 1,83,382 fatalities in 2025 (Press Information Bureau, 2026).

This study examines the relationship between road safety and youth in India using secondary data covering the period 2015–2025, with a view to informing evidence-based, youth-focused road-safety policy.

2. STATEMENT OF THE PROBLEM

Despite improvements in road infrastructure, vehicle technology, traffic regulation and road-safety awareness, road fatalities remain very high in India. The problem is particularly serious because a considerable proportion of victims belong to younger and economically productive age groups.

A road death involving a young person represents not only a loss of life but also a loss of future income, human capital, household income and labour productivity, in addition to educational disruption and medical and rehabilitation costs for the family. The road-safety problem cannot, therefore, be viewed solely as a transportation-management issue.

Research Question

What has been the trend in road accidents and fatalities in India during 2015–2025, and what does secondary evidence reveal about the vulnerability of youth and young adults to road-traffic fatalities, and its policy implications?

3. OBJECTIVES OF THE STUDY

1. To analyse the trend of road accidents in India during 2015–2025.
2. To analyse the trend of road-accident fatalities during the study period.
3. To examine the trend of road-accident injuries.

4. To calculate and interpret accident severity over the study period.
5. To examine the age distribution of road-accident fatalities, with emphasis on youth.
6. To analyse the position of youth in road-accident mortality relative to other age groups.
7. To identify major reported road-safety risk factors.
8. To examine the socio-economic implications of youth road fatalities.
9. To suggest evidence-based policy measures for improving youth road safety.

4. RESEARCH METHODOLOGY

Research Design

The study adopts a descriptive and analytical research design based on time-series secondary data.

Nature and Sources of Data

The study relies exclusively on secondary quantitative data compiled from:

- Ministry of Road Transport and Highways (MoRTH), Government of India — annual Road Accidents in India reports
- Lok Sabha and Rajya Sabha unstarred question replies and parliamentary records
- Press Information Bureau (PIB), Government of India, press releases
- National Crime Records Bureau (NCRB) — Accidental Deaths & Suicides in India
- World Health Organization — Global Status Report on Road Safety
- Peer-reviewed and reputable secondary research literature

MoRTH compiles its annual road-accident statistics from information supplied by the Police Departments of States and Union Territories in a standardised format prescribed under the UNESCAP Asia-Pacific Road Accident Database (APRAD) project (Ministry of Road Transport and Highways, 2023); figures are periodically revised in subsequent official releases.

Study Period and Geographical Area

The study covers the period 2015–2025 for India as a whole.

Statistical Techniques

The study employs percentage analysis, year-on-year growth rate, compound annual growth rate (CAGR), trend analysis, accident-severity analysis and age-group comparative analysis. Accident severity is computed as:

Accident Severity = $(\text{Number of Persons Killed} \div \text{Number of Road Accidents}) \times 100$

CAGR over the decade 2015–2025 is computed as $[(\text{Value}_{2025} / \text{Value}_{2015})^{(1/10)} - 1] \times 100$.

5. RESULTS

5.1 Trend of Road Accidents and Fatalities, 2015–2025

Table 1. Road Accidents and Fatalities in India, 2015–2025

Year	Road Accidents	Fatalities
2015	5,05,770	1,46,555
2016	4,84,756	1,51,192
2017	4,69,242	1,50,003
2018	4,70,403	1,57,593

Year	Road Accidents	Fatalities
2019	4,56,959	1,58,984
2020	3,72,181	1,38,383
2021	4,12,432	1,53,972
2022	4,61,312	1,68,491
2023	4,80,583	1,72,890
2024	4,87,707	1,77,175
2025	5,13,563	1,83,382

Source: Ministry of Road Transport and Highways, Road Accidents in India (various years); Press Information Bureau (2026); figures for 2025 as reported to the Lok Sabha on 30 July 2026. State/UT figures are subject to periodic revision.

Between 2015 and 2025, the number of road accidents increased only marginally, from 5,05,770 to 5,13,563 — a rise of approximately 1.5 per cent ($CAGR \approx 0.15\%$ per annum). Fatalities, however, increased from 1,46,555 to 1,83,382 — a rise of approximately 25.1 per cent ($CAGR \approx 2.27\%$ per annum), roughly fifteen times the growth rate of accidents. This divergence is the central empirical finding of the study and is examined further in Section 5.3.

5.2 Phase-wise Trend Analysis

The eleven-year series can be divided into four broad phases.

Phase I (2015–2017): Reported accidents declined from 5,05,770 to 4,69,242, while fatalities nonetheless rose from 1,46,555 to 1,50,003, an early indication of rising severity.

Phase II (2018–2019): Accidents stabilised at around 4.6–4.7 lakh annually, while fatalities continued to climb, reaching 1,58,984 by 2019.

Phase III (2020): A sharp decline occurred owing to COVID-19 mobility restrictions; accidents fell to 3,72,181 and fatalities to 1,38,383. MoRTH explicitly attributes this exceptional decline to the pandemic and associated lockdowns (Ministry of Road Transport and Highways, 2023).

Phase IV (2021–2025): As mobility normalised, both accidents and fatalities rose continuously, with fatalities reaching a decade high of 1,83,382 in 2025 (Press Information Bureau, 2026).

5.3 Accident Severity

Table 2. Accident Severity (Fatalities per 100 Accidents), 2015–2025

Year	Fatalities per 100 Accidents
2015	29.0
2016	31.2
2017	32.0
2018	33.5

Year	Fatalities per 100 Accidents
2019	34.8
2020	37.2
2021	37.3
2022	36.5
2023	36.0
2024	36.3
2025	35.7

Source: Computed by the author from Table 1 data.

Accident severity rose from 29.0 fatalities per 100 accidents in 2015 to a peak of 37.3 in 2021, before moderating slightly to 35.7 in 2025 — still substantially above the 2015 level. This confirms that the principal policy challenge is not merely the number of crashes occurring, but their increasing lethality, consistent with the divergent growth rates reported in Section 5.1.

5.4 Age Distribution and Youth Vulnerability

Rather than relying on a single institutionally defined age band, this study draws on the age-group shares actually reported across successive official MoRTH publications and parliamentary replies, which consistently use an 18–45 (and, more recently, 18–34) classification.

Table 3. Share of Road Fatalities Attributed to Young Adults (18–45 years), Selected Years

Year	Share of Fatalities (%)	Source
2016	68.6	Ministry of Road Transport and Highways / eparlib.nic.in (2018)
2017	72.1	Ministry of Road Transport and Highways, Road Accidents in India–2017
2019	69.3	Ministry of Road Transport and Highways, Road Accidents in India–2019
2020	69.0	Ministry of Road Transport and Highways, Road Accidents in India–2020
2023	66.4	Ministry of Road Transport and Highways, Road Accidents in India–2023
2025 (18–34 band)	66.0	Union Minister, Lok Sabha reply (News on Air, 2025)

Source: As indicated for each row above.

The evidence is remarkably consistent across nearly a decade: young and working-age adults have accounted for roughly two-thirds to just under three-quarters of all road fatalities in every year for which

official data were located. This population includes college students, first-time drivers, young employees, industrial workers, entrepreneurs and two-wheeler users — groups whose loss carries a disproportionate human-capital cost, discussed in Section 6.2.

5.5 Youth and Two-Wheeler Safety

Two-wheelers are particularly important in the context of youth road safety. Motorcycles and scooters are relatively affordable, fuel-efficient and widely used by students and young workers, but offer their riders limited physical protection. Nationally, two-wheeler riders constitute the largest single category of road-accident deaths, accounting for approximately 45 per cent of fatalities in 2023 (Ministry of Road Transport and Highways, 2024). Consequently, youth road-safety programmes should place particular emphasis on helmet use, speed control, defensive riding, passenger safety, night-time riding, and avoidance of mobile-phone use and alcohol-impaired riding.

5.6 Major Reported Risk Factors

Table 4. Reported Contribution of Major Risk Factors to Road Fatalities

Risk Factor	Year	Reported Impact	Source
Over-speeding	2022	71.2% of fatalities ($\approx$ 1,19,900 deaths)	MoRTH, Road Accidents in India–2022
Over-speeding	2023	68.1% of fatalities ($\approx$ 1,17,700 deaths)	MoRTH, Road Accidents in India–2023
Over-speeding (crashes)	2025	82,124 accidents ($\approx$ 16% of total)	Lok Sabha reply, July 2026
Mobile-phone use	2022	$\approx$ 2% of fatalities ($\approx$ 3,400 deaths)	MoRTH, Road Accidents in India–2022
Non-use of helmets	2022	50,029 deaths	MoRTH, Road Accidents in India–2022
Non-use of seat belts	2020	15,146 deaths	MoRTH, Road Accidents in India–2020

Over-speeding remains, by a wide margin, the single most significant reported contributor to road fatalities in India, consistently accounting for roughly two-thirds to three-quarters of deaths in years for which data are available. Distraction from mobile-phone use, non-use of protective devices (helmets and seat belts), drunken driving, and wrong-side driving are recurring secondary contributors. Because young riders and drivers are over-represented among two-wheeler users and first-time licence holders, targeted enforcement and education addressing these specific behaviours are likely to yield disproportionate benefits for youth road safety.

6. DISCUSSION

6.1 The Severity Paradox

The 2015–2025 evidence reveals an important paradox: the number of accidents in 2025 was only marginally above the 2015 level (+1.5%), while fatalities were substantially higher (+25.1%). This indicates that the central policy challenge lies in crash severity rather than crash frequency alone. The

sharp decline in both accidents and fatalities during 2020 demonstrates the close relationship between mobility exposure and crash occurrence; the subsequent post-pandemic rebound suggests that the normalisation of mobility was accompanied by a return — and intensification — of high-severity road-crash outcomes (Ministry of Road Transport and Highways, 2023; Press Information Bureau, 2026).

6.2 Youth, Human Capital and Economic Consequences

The concentration of fatalities among young and working-age people adds an important economic dimension to the road-safety problem. When a young adult dies in a road crash, the loss extends beyond the individual to future earnings, household contribution, educational investment, labour productivity, tax contribution and accumulated skills. Road crashes generate direct costs (hospitalisation, emergency treatment, rehabilitation), indirect costs (lost wages, reduced productivity, educational disruption) and long-term costs (disability, loss of future earnings, and elevated household poverty risk). Given that road-traffic injuries have previously been estimated to depress India's GDP by 2–3 per cent annually (Ministry of Road Transport and Highways, cited in Deccan Herald, 2020), youth road safety functions, in effect, as a form of human-capital protection with direct relevance for a country seeking to expand labour-force participation and productivity.

6.3 Recent Policy Response

Government policy has moved substantially in this direction in recent years. Under the Cashless Treatment of Road Accident Victims Scheme, rolled out nationally from May 2025, road-accident victims are entitled to cashless medical treatment of up to ₹1.5 lakh for the first seven days following a crash, provided the police are informed within 24 hours (Ministry of Road Transport and Highways, 2025; Vikaspedia, 2025). This has since been consolidated under the PM RAHAT (Road Accident Victim Hospitalisation and Assured Treatment) scheme, which links the 112 emergency response support system with hospital empanelment and police authentication. A complementary Good Samaritan initiative, the 'Rah-Veer' scheme, offers a cash reward of ₹25,000 and formal recognition to bystanders who transport accident victims to hospital — addressing the long-standing reluctance of the public to assist crash victims for fear of legal or procedural complications (News on Air, 2025). The Union Minister for Road Transport and Highways has cited an AIIMS study suggesting that timely medical intervention alone could prevent close to 50,000 road-accident deaths annually in India (News on Air, 2025). These initiatives directly reinforce the emergency-care limb of the 4E framework discussed in Section 7.2, and their evaluation should form part of future youth-focused road-safety research.

Taken together, the findings suggest that road-safety policy should integrate transport policy, public health, youth policy, human-capital policy and economic policy, rather than being treated purely as a matter of traffic management and enforcement.

7. POLICY RECOMMENDATIONS

On the basis of the evidence presented above, the study proposes the following measures, particularly oriented towards youth and young adult road users.

1. Youth road-safety education — integrated into colleges, universities, ITIs and driving schools.
2. Defensive-driving training for young drivers, covering hazard perception, speed management, emergency braking, lane discipline and night driving.
3. Institution-based youth road-safety clubs and Road Safety Ambassador programmes in colleges and schools.
4. Targeted helmet-compliance enforcement campaigns for young two-wheeler riders.

5. Speed-management engineering measures on high-risk roads — speed cameras, rumble strips, appropriate speed limits, warning signage and road-design improvements.
6. Youth-oriented anti-drunk-driving campaigns combined with enforcement.
7. Mobile-phone-free driving awareness programmes targeted at young drivers.
8. Strengthening of the emergency-response chain — crash, first aid, ambulance, trauma care and rehabilitation — building on the cashless treatment and Rah-Veer schemes.
9. Training of youth volunteers as road-safety and first-response ambassadors in road-safety awareness, first aid, CPR and emergency response.

7.1 Four-E Road-Safety Framework

The Government of India has adopted a multipronged 4E strategy for road safety — Education (awareness and training), Engineering (safer roads and vehicles), Enforcement (effective implementation of traffic laws) and Emergency Care (rapid medical assistance after crashes) (Press Information Bureau, 2026). For youth road-safety outcomes to improve, these four components should be implemented jointly and specifically targeted at the 18–45 age band that the evidence in Section 5.4 identifies as disproportionately affected.

8. CONCLUSION

This study examined road safety and youth in India using secondary data for the period 2015–2025. The evidence demonstrates that road accidents remain a major national challenge: although accidents declined sharply during the COVID-19 period, they subsequently increased and reached 5,13,563 in 2025, while fatalities reached 1,83,382 (Press Information Bureau, 2026). The disproportionate rise in fatalities relative to the modest rise in accidents underscores the growing importance of accident severity as a policy concern. The age distribution further demonstrates that young and working-age populations bear a substantial and remarkably consistent share of road-traffic mortality — roughly two-thirds of all fatalities across the years examined — with direct implications for India's human capital, labour productivity, household income and economic development.

The study concludes that road safety is not merely a transport issue; it is also a youth-development, public-health, human-capital and economic-development issue. A comprehensive youth road-safety strategy should integrate education, engineering, enforcement and emergency care, with particular attention to over-speeding, helmet use, distracted driving, alcohol-impaired driving and two-wheeler safety, and should build on recent emergency-care initiatives such as the cashless treatment scheme and the Rah-Veer Good Samaritan programme.

9. LIMITATIONS

1. The study relies exclusively on secondary data and does not incorporate primary survey or hospital-based data.
2. Police-reported accident statistics may not capture every road-traffic incident, particularly minor injury crashes.
3. Different agencies may apply different definitions and reporting procedures, and figures are periodically revised across successive official releases.
4. The operational definition of 'youth' varies across the datasets consulted (commonly 18–45 or 18–34 years).

5. Age-specific fatality data are not uniformly available for every year in the 2015–2025 series; Table 3 therefore reports the years for which official age-wise data could be located.
6. The study establishes trends and statistical associations rather than individual-level or econometric causation.
7. A precise monetary estimate of the economic loss attributable to youth road fatalities would require additional primary and administrative data beyond the scope of this study.

10. SCOPE FOR FURTHER RESEARCH

A logical next-stage study, building directly on this national-level analysis, would be a district-level investigation such as “Road Safety and Youth in Karnataka: A Secondary Data Analysis with Special Reference to Chitradurga District,” disaggregating the India → Karnataka → Chitradurga trend and examining 2015–2025 accident trends, youth fatalities, two-wheeler accidents, gender and age patterns, road category, accident black spots, time-of-accident patterns, major causes, economic loss and the local uptake of national policy interventions. Such a study would sit well within a road-transport economics or public-health research framework and would allow the district-level evaluation of recent national schemes such as cashless treatment and Rah-Veer.

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