



# **BUCKLE UP!**

An assessment of helmet and seatbelt law compliance in Tirunelveli district.

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#### Authors

Varsha Vasuhe.V, Researcher, CAG

Sumana Narayanan, Senior Researcher, CAG

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## About CAG

CAG is a 36-year-old non-profit and non-political organisation that works towards protecting citizens' rights in consumer, civic and environmental issues and promoting good governance processes including transparency, accountability and participatory decision-making.

CAG has been working on road safety issues since 2015. We have conducted several training and awareness programmes for the general public in collaboration with various stakeholders including the relevant government agencies. CAG has created various IEC materials for building awareness among the public on road safety rules. CAG also regularly carries out research on road safety such as helmet and seatbelt compliance studies, the results of which are shared with enforcement agencies for their consideration.



Citizen consumer and civic Action Group

No.103 (First Floor),

Eldams Road, Teynampet,

Chennai, Tamil Nadu 600 018

India.

+91(44) 2435 4458

+91(44) 2435 0387

Email: <u>helpdesk@cag.org.in</u>

## **Executive Summary**

Usage of safety gears i.e. helmets and seatbelts continue to remain at unsatisfactory levels among road users despite existing national laws that stress their significance and need. According to the Ministry of Road Transport and Highways (MoRTH), in 2020, Tamil Nadu recorded 2011 and 332 fatalities that were attributed to non-wearing of helmets and seatbelts respectively. These numbers cannot be overlooked. Tamil Nadu has shown commendable improvement in other aspects of road safety management such as post-crash care and optimising the use of technology in maintaining a crash database; however there is still scope for road safety improvement through stricter enforcement. Global research evidence showing that the risk of a crash leading to a fatality reduces with the usage of a safety gear gives us solid ground to tighten enforcement through increased penalties as per sections 194B and 194D of the Motor Vehicles Amendment Act, 2019.

This study is a first step to understand the trends and practices of using safety gears at the district level in Tamil Nadu and help streamline an action plan to improve compliance through strategic road safety enforcement measures. It also aims to bridge the prevailing data gap on usage of safety gears at the district level. Ten identified intersections of Tirunelveli district were surveyed during morning and evening peak hours during the week. Two volunteers stationed at each junction recorded observations on the level of compliance among two-wheeler and car users. Compliance levels among drivers, pillion riders and all car passengers were studied.

The findings from the district of Tirunelveli reveal an average compliance level of 45% in wearing helmets among drivers and a seriously low 3% average compliance among pillion riders. In the case of seatbelts the average compliance levels stand at 43% among drivers, 36% among front seat passengers and an acute 18% among rear seat passengers. The findings of the study strongly recommend an immediate introspection on existing enforcement measures. Optimal use of manpower that allows for monitoring and surveillance of non-compliance, increased visibility of police operations, check points at unpredictable intersections at different times of the day or week, strengthened methods of data collection of road crashes and increased severity of punishments as per MVAA 2019 are possible solutions. Road users are more likely to respond to the threat of being caught off-guard, which in turn will increase compliance rates. This data is the start to creating a safer road environment by enabling policy makers to understand road users' behaviour and match it with effective policies.

## 1 Background

Tamil Nadu observed 57228 road crashes and 10525 fatalities in 2019 continuing to be on top of the leaderboard with respect to number of crashes.<sup>1</sup> Tamil Nadu has come a long way in tackling its road safety challenges, reducing its annual road crashes by over 25% in 2019 when compared to its road crash scenario in 2014.<sup>2</sup> However, this declining trend did not sustain post COVID as Tamil Nadu observed a sharp 41.7% increase in its road fatalities in 2021 compared to 2019 as per data from the state's transport department.<sup>3</sup> The drop in road crashes and fatalities for a brief period in 2020 is largely attributable to the COVID19 lockdowns when vehicular traffic was curbed. Thus the present road safety scenario is clearly worrisome and has to be focused upon.

| Year | Total no. of road crashes | Total no. of road fatalities |
|------|---------------------------|------------------------------|
| 2017 | 65262                     | 16157                        |
| 2018 | 63920                     | 12216                        |
| 2019 | 57228                     | 10525                        |
| 2020 | 45484                     | 8059                         |

Table 1: Changes in the road crash scenario in Tamil Nadu, 2017 – 2020, MoRTH

Road crashes are attributed to various causes such as poor road infrastructure, rash or aggressive driving behaviour, drunken driving, violation of traffic rules such as jumping red lights, lane indiscipline, and distracted driving. One of the factors that contributes significantly to road safety, but has been subject to a lackadaisical attitude by citizens is the use of safety gear such as helmets, seatbelts and child seats. The state of Tamil Nadu observes a high percentage of two-wheelers involved in road crashes every year. The majority of two-wheeler fatalities are attributed to non-wearing of helmets. 52% of the road deaths involving two-wheelers happened due to non-wearing of helmets as 60% of two-wheeler road fatalities in Tamil Nadu have been attributed to non-wearing of helmets in 2020.<sup>5</sup>

Retrieved from [https://morth.nic.in/sites/default/files/RA\_Uploading.pdf]

<sup>&</sup>lt;sup>1</sup> Ministry of Road Transport and Highways (MoRTH), 2020. Road Accidents in India 2019. Transport Research Wing, Government of India, New Delhi.

<sup>&</sup>lt;sup>2</sup> Markland, J., Bose, D., Haazen, S.D., 2021. Road safety: How a state in India is leading the way to lower road crash deaths. World Bank Blogs.Retrieved from [https://bit.ly/3P2rcLM]

<sup>&</sup>lt;sup>3</sup> Anbuselvan, B., 2022. Road accident deaths in TN up by 42% compared to 2019 as private vehicle use rises, The Indian News Express, February Edition. Retrieved from [<u>https://bit.ly/3ok4ByP</u>]

<sup>&</sup>lt;sup>4</sup> Krishnan, S., Geetha, K., Basri, Rabiya., 2017. Road Accidents and Road Safety Measures in Tamil Nadu - An Analysis, Transport and Road Safety Commissioner, Chennai. Retrieved from [https://tnsta.gov.in/pdf/ra5.pdf]

<sup>&</sup>lt;sup>5</sup> Ministry of Road Transport and Highways (MoRTH), 2022. Road Accidents in India 2020. Transport Research Wing, Government of India, New Delhi. Retrieved from [https://morth.nic.in/sites/default/files/RA\_2020.pdf];

Several evidence-based research studies state that efforts by governments to reduce Road Traffic Injuries may be facilitated by increasing helmet usage by motorcyclists (Liu et al, 2004). There are studies that also demonstrate the effectiveness of seatbelts in reducing the severity of road crash injuries using medical and epidemiological data (Marine et al, 1994). Data-driven research points towards the need for legislation that encourages increased compliance with safety gear norms. As per Section 129 of the parent Motor Vehicles Act of 1988, only two people are permitted on a two-wheeler; and both the driver and the pillion rider must wear helmets. Failure to do so results in a fine of Rs.100 for the first offence and goes up to Rs.300 in case of repeat offences. Non-compliance with wearing seatbelts by drivers and front seat passengers also received similar fines. Further in 1999, the Central Motor Vehicles Rules were amended to include the rear seat passengers to comply with the rule of wearing seatbelts. Tamil Nadu has not enforced this amended rule yet.

Another significant progress at the national level was the Motor Vehicles Amendment Act of 2019 (MVAA 2019), which came up with serious penalties under Sections 194 D and 194 B by increasing the fines for non-compliance with wearing helmets and seatbelts to Rs.1000. Non wearing of helmets resulted in an additional disqualification of the driving licence for three months. The increased penalties came into effect from September 01, 2019, with a strong motive to deter careless behaviour by road users. Several states adopted the increased penalties immediately, whereas a handful of states have taken a more cautious approach. In the last two years most of the states have implemented the increased penalties. Tamil Nadu, however, has not yet adopted the amendments regarding increased penalties (Sec 200 of MVAA 2019) and the fines as per the parent act are valid till date. In addition to the state's intensive measures such as strengthening post-crash care through various schemes (Innuyir Kaapom); education and enforcement through campaigns and drives with a special focus on traffic rules violations, juvenile driving and safety of school children, it is vital to improve enforcement to enable increased compliance to road rules.

Though city level data on road crashes (fatal and non-fatal) due to non-compliance with wearing helmets and seatbelts are being duly recorded, at district levels there is a prevailing data gap and statistics under these areas are not readily available in the public domain. Therefore, as a first step, two focus districts namely Tirunelveli and Thiruvarur were selected from Tamil Nadu to gauge the existing trends in the practices of wearing helmets and seatbelts. This report records the data analyses and findings for Tirunelveli district in detail.

| Indicators                                      | Tirunelveli |      |      |
|-------------------------------------------------|-------------|------|------|
|                                                 | 2018        | 2019 | 2020 |
| Total no. of road crashes                       | 2442        | 2295 | 1001 |
| Total no. of fatalities                         | 498         | 502  | 197  |
| No. of fatalities due to non-wearing of helmets | NA          | 70   | 27   |

Table 2: Road crash scenario and fatalities due to non-wearing of helmets, Tirunelveli<sup>6</sup>

## 2 Aim and methodology

The study aimed to gauge compliance with wearing helmets and seatbelts in the district of Tirunelveli. The methodology included an observational audit at 10 identified intersections across the district. The intersections were selected based on the following criteria:

- Daily traffic volumes observed in the particular stretch
- Category of roads (Arterials, Sub-arterials, Collectors, State Highways and Rural Roads)
- Crash history or road safety concerns associated with a particular stretch.

Care was taken to ensure that there was a balanced mix of the different categories of roads in order to gauge the compliance levels across all towns of the district. The list of the 10 identified intersections are as follows:

- 1. Cheranmahadevi Papanasam Road
- 2. Mukoodal bus stop
- 3. Suthamalli Police Station Junction
- 4. Nanguneri Main Road
- 5. Palai bus stand, Palayamkottai
- 6. Abhishekapatti
- 7. Ettankulam bus stop
- 8. Thachanallur four way junction
- 9. Town Arch
- 10. KTC Nagar

<sup>&</sup>lt;sup>6</sup> Government of Tamil Nadu Home (Transport) Department, 2019. Road Accident Analysis in Tamil Nadu, Transport and Road Safety Commissioner, Chennai. Retrieved from [https://tnsta.gov.in/pdf/analysis\_jan2019.pdf] Government of Tamil Nadu Home (Transport) Department, 2020. Road Accident Analysis in Tamil Nadu, Transport and Road Safety Commissioner, Chennai. Retrieved from [https://tnsta.gov.in/pdf/analysis\_december2019.pdf] Government of Tamil Nadu Home (Transport) Department, 2020. Road Accident Analysis in Tamil Nadu, Transport and Road Safety Commissioner, Chennai. Retrieved from [https://tnsta.gov.in/pdf/analysis\_in Tamil Nadu, Transport and Road Safety Commissioner, Chennai. Retrieved from [https://tnsta.gov.in/pdf/analysis\_in Tamil Nadu, Transport and Road Safety Commissioner, Chennai. Retrieved from [https://tnsta.gov.in/pdf/analysis\_december2020.pdf]



i Intersections selected for compliance audit, Tirunelveli Photo: Road Safety | CAG

The observational audit was carried according to the following considerations:

- A small team of 2 volunteers were deployed at each location to observe the incoming traffic for wearing of helmets by two-wheeler drivers and pillion riders; and seatbelts by drivers and all passengers of cars.
- Observations on helmet usage pattern (whether the helmet was firmly fastened or not) were also taken into consideration. If the driver or the pillion rider had an unfastened helmet on, it was considered as non-compliance with wearing helmets as only a firmly fastened helmet helps in reducing the chances of crashes resulting in grievous injuries or death.

The study was carried out on weekdays during the morning and evening peak hours that were specific to the selected locations.



**Compliance audit at Tirunelveli** Photo: Road Safety | CAG

#### 2.1 Limitations

Due to practical difficulties, gender and age characteristics of violators were not audited quantitatively.

## **3 Results and discussion**

#### 3.1 Helmet compliance

The study surveyed 16,858 two-wheelers and revealed that non-compliance levels among drivers vary with the intersection and also with the time of day. For example, in the Town Arch intersection one can observe a high 81% non-compliance with wearing helmets during the

morning peak hours, whereas the evening peak hours witnessed only 22% non-compliance. Similarly, the intersection identified on Cheranmahadevi-Papanasam Road also witnessed 62% non-compliance with wearing helmets during the morning peak hours, whereas the evening peak hours witnessed 36% non-compliance.

Overall, the analyses reveal an average compliance of 45% in wearing helmets among drivers and a 3% average compliance among pillion riders. These findings emphasise the need to focus on stringent enforcement measures to increase compliance among drivers and especially among pillion riders.



Figure 1: % Non-compliance with wearing helmets by two-wheeler drivers





#### 3.2 Seatbelt compliance

The study surveyed 4019 cars and found non-compliance with wearing seatbelts by drivers to be high (ranging between 50 and 86%) across most of the locations. The intersection at Cheranmahadevi – Papanasam Road however showed the highest level of compliance among drivers in the evening hours. Other locations that show a relatively higher level of compliance in the evening compared to the morning peak hours are Town Arch and KTC Nagar intersections. Overall the compliance with wearing seatbelts were found to be quite low among drivers, with the average compliance standing at 43%.



Figure 3: % Non-compliance with wearing seatbelts by car drivers

Assessing the non-compliance with wearing seatbelts among front and rear seat passengers, the study reveals similar morning and evening peak hour statistics at almost all locations. Seatbelt compliance levels are very poor among passengers in general, irrespective of the time. The average compliance level among front seat passengers stands at 36% and a poor 18% in the case of rear seat passengers.



Figure 4: % Non-compliance with wearing seatbelts by front seat passengers



Figure 5: % Non-compliance with wearing seatbelts by rear seat passengers

## **4 Recommendations**

With statistics showing rampant non-compliance with wearing helmets and seatbelts by drivers and riders of the respective vehicles, it is important to review the current road safety measures taken by the district authorities. The varying non-compliance levels during morning and evening peak hours in a few intersections might possibly point towards increased visibility of enforcement during a particular time of the day that has led to increase in compliance levels during that period. Future studies could be used to further verify (through observations and discussions with the police officials) if this is so.

This also puts into spotlight a strong reason to review and evaluate the existing road safety measures and the impact of each enforcement type on ground so that the existing resources, capacity and manpower can be optimally channelised to enable effective enforcement.

Though the district authorities have been continuously engaging in sensitising the public with various awareness campaigns at the district level, translation of those campaigns into a visible behavioural change among the road users has perhaps not been as hoped for.<sup>7</sup> Anecdotal evidence also suggests that the enforcement on ground has not been effective in terms of collection of fines. This has led to the continuation of poor behaviour among the road users in terms of not using safety gears.

To combat this behaviour and to reap a visible increase in the compliance levels and a reduction in road crash deaths and injuries due to non-wearing of helmets/seatbelts the following recommendations may be considered by the district authorities:

#### 4.1 Enforcement

Global best practices in road safety suggest that enforcement be as random as possible so as to drive home the point that a road user may be checked for several violations at any time, and at any place. For example, every day randomly select traffic junctions to check for compliance. A daily exercise of drawing lots to select a particular junction for the day can be brought into practice to avoid bias. Enforcement drives can also be conducted targeting a selective cohort of high risk drivers such as youth drivers. In addition to this, the frequency of enforcement drives should be increased to induce a sustained impact among road users.

#### 4.2 Capacity on ground

Increasing the number of police personnel employed and the number of hours for surveillance can help in catching a higher number of cases of non-compliance. The police personnel employed on ground should also be furnished with a Standard Operating Procedure to collect data regarding non-compliance and investigate road crash injuries and fatalities due to the

<sup>&</sup>lt;sup>7</sup> Sudhakar.P , 2022. Traffic rule violations make Tirunelveli roads unsafe.The Hindu, April Edition. Retrieved from[<u>https://www.thehindu.com/news/cities/Madurai/traffic-rule-violations-make-tirunelveli-roads-unsafe/article 65360207.ece</u>]

non-usage of safety gears as per the levels of injury tolerance and severity, in addition to the other primary causal factors.

#### 4.3 Visibility of police operations

The visibility and awareness of monitoring and surveillance also proves useful in changing the behaviour of road users. Use of physical infrastructure, warning signs, check points including barricades etc. can help inculcate appropriate road behaviour.

#### 4.4 Severity of punishment

Legal punishments such as fines, impounding vehicles, and licence suspensions (virtual courts/roadside suspensions). act as significant deterrents. Global experience suggests that increasing fines has a deterrent impact as it encourages the public to think before violating the law. However, road users' perspective that increased fines are a tool of harassment by the Police needs to be changed through awareness. Tamil Nadu has not notified the increased penalties under MVAA 2019 yet, and fines are collected as per the parent act (Motor Vehicles Act, 1988). It is important that the MVAA 2019 and the increased penalties as per sections 194 D and 194 B are implemented.

An added dimension that would reap improved compliance would be the immediacy of these legal punishments. The follow-up mechanisms the district can adopt could include defining the time period within which the penalties should be paid by the public and the length of other legal procedures that are deemed necessary.

#### 4.5 Strengthening data collection

It is important that daily situational summaries of cases booked for not wearing safety gears (two-wheelers and cars), total number of people checked for compliance, road crash fatalities and injuries because of not wearing safety gears, identifying repeat offenders etc, be recorded. This would enable data-driven decision making, help track visible changes and identify areas that require improvement.

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