Crashfree India

When Risks Become Routine

The Road Safety Risks of Gig Riders

Crashfree India Research Brief, February 2026

Credits

Crashfree India

A national movement committed to making mobility safer. Our vision is a future where no life is lost on our roads—a nation with zero road fatalities by 2040.

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This brief draws on secondary research, publicly available data, and firsthand insights from gig workers. Sources include academic articles, policy reports, and media coverage from India and abroad on platform-based gig work and road safety, along with publicly reported challan and crash data.

The analysis also incorporates exploratory, hour-long telephonic consultations conducted between November 2025 and January 2026 with platform-based delivery workers and bike taxi pilots. All participants were kept anonymous to protect their safety and privacy. Although limited in number (7), the consultations aimed to surface recurring themes and lived experiences to complement existing data and literature.

Acknowledgments:

We acknowledge and appreciate Prof. Richa Ahuja (IIT Kharagpur) for her thoughtful review and guidance in strengthening the narrative of this brief and refining the recommendations. Her inputs helped ensure a more balanced framing of the analysis. We are also grateful to Deepannita and Nishaant from the Crashfree India team for their valuable inputs, editorial suggestions, and support during the development of this brief.

Disclaimer:

The information in this brief is general in nature and does not address the circumstances of any specific individual, organisation, or platform, nor should it be relied upon as legal, regulatory, or operational advice. While reasonable care has been taken in compiling the analysis, Crashfree India makes no representations or warranties regarding its completeness, accuracy, or applicability. The findings reflect an initial synthesis of available evidence and may evolve with further research.

This brief constitutes the first phase of a larger body of work. Subsequent phases will involve greater, structured consultations with a broader range of gig workers and ecosystem stakeholders, including enforcement agencies, policymakers, and platform representatives.

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Executive Summary

India's road safety crisis has intensified over the last decade, culminating in an estimated 1.77 lakh road crash fatalities in 2024. **Two-wheeler users account for nearly half of these deaths** and remain a major vulnerable road user group for whom fatalities continue to rise.

Within this group, gig riders—delivery partners, couriers, and bike-taxi pilots—form a smaller but disproportionately high-risk cohort. **Unlike most two-wheeler users, gig riders spend a large share of their working lives on the road, under time pressure and economic constraints that shape their riding behaviour.** With India's gig workforce projected to exceed 23 million by 2030, gig riders have become a permanent feature of urban traffic.

Crucially, they also represent a strategic entry point into the wider challenge of two-wheeler safety: gig riders concentrate multiple risk factors within **a single, identifiable, data-rich group, and operate within platform systems that generate detailed trip and operational data.** The presence of this clear institutional actor—the platform—creates rare opportunities for accountability and scalable interventions for safety. Solving for gig rider safety could therefore function as a practical case study for reducing two-wheeler crashes more broadly.

Evidence reveals that road safety risk for gig riders is not incidental; it is systematically produced through the interaction of work design and on-road decision-making. Two interlinked domains shape this risk:

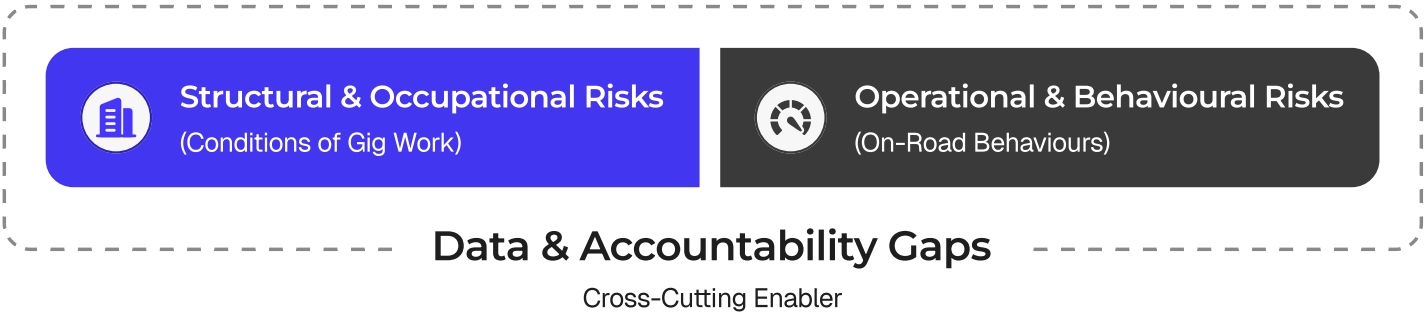
Structural and occupational conditions that determine exposure and constraints before a ride begins.

- **Delivery timelines, pay-per-piece earnings, and incentive structures** prioritise throughout and speed over safety, with most riders in a survey reporting stress under 10–15 minute delivery timelines.
- **Algorithmic management** constrains rider choice and increases risk. Opaque systems governing task allocation, ratings, penalties, and deactivation discourage riders from slowing down or rejecting orders, while international evidence links such management to burnout–a factor linked in the literature to greater crash risks.
- **Long hours and fatigue amplify exposure:** Most full-time gig riders work more than eight or ten hours per day, often without rest days, reducing attentional capacity and reaction time in complex traffic environments.

- **The city functions as a hazardous workplace:** Congestion, poor road conditions, heat, pollution, and inclement weather impose continuous physical and cognitive demands, compounded by frequent app notifications and customer communication.

Operational and behavioural practices that influence crash occurrence and injury severity on the road.

- Enforcement data across cities **consistently shows helmet violations**—by riders and pillion passengers—as the most frequent offence among gig riders.
- Correct helmet use remains low despite high reported compliance: An observational study indicates correct helmet use at only about 38% in Bengaluru, sharply reducing protective benefits.
- **Training and licensing gaps** leave riders unprepared. India's licensing system places limited emphasis on riding competence, while low-speed electric two-wheelers require no licence, enabling untrained riders to enter traffic.
- **Rapid electrification has introduced new enforcement gaps.** Weak regulation of low-speed e-bikes has led to helmet non-compliance and illegal speed modification, often beyond effective enforcement under the Motor Vehicles Act.



Many of these solvable risks are further **multiplied due to the challenge of data silos.** Relevant data on gig rider risk already exists across platforms, traffic police, emergency responders, and trauma centres, but remains fragmented across institutional silos. In the absence of integrated crash and injury data specific to gig riders, **challan data from special enforcement drives serves as a limited but revealing proxy**, highlighting recurring violations, repeat non-compliance, and city-specific risk patterns.

Two immediate priority areas for immediate intervention are identified: patterns in challan violations, secondary evidence, and rider accounts point to **helmet non-compliance** and **inadequate rider training** as high-impact, evidence-backed starting points for intervention. Both issues cut across the two interacting domains of risk identified in this report, and targeting them could reduce crash severity and incidence in the interim while broader data sharing improves and systems of accountability mature.

All in all, this brief seeks to start a structured conversation around the road safety of gig workers and evidence-driven interventions for the same. By highlighting the challenges and systemic gaps, it aims to guide policymakers, platforms, and enforcement agencies toward practical, coordinated interventions to improve safety. As a next step, Crashfree India is conducting a research study of these touchpoints of risk across the gig work lifecycle, with the aim of informing evidence-based interventions, and welcomes collaboration for interventions that will enhance the road safety of gig workers meaningfully.

Introduction

~45% of all road crash fatalities are two-wheeler riders.

1. Introduction

1.1 Two Wheels, Many Lives

Over the past few decades, the burden of road crashes in the nation has grown steadily and exponentially–**now, with over 1.72 lakh lives being lost each year, economic losses estimated at nearly 3% of our GDP, and the psycho-social toll on victims' loved ones being immeasurable**. In just four decades, the number of fatalities has increased by **13.2 times [1].**

Within this broader crisis, **the need to focus on two-wheelers is as pressing as it is stark**. Comprising **more than 70% of all registered vehicles [2]**, two-wheelers have a significant presence on the roads. As vulnerable road users (VRUs), two-wheeler riders face significantly higher exposure and resultantly greater risk of fatal crashes compared to occupants of larger vehicles, who are protected from harsh weather and better insulated from road deficiencies — and India's numbers reflect this starkly. **Almost half of all crashes and fatalities recorded in 2023 were in the two-wheeler category [3]**; from 2014 to 2023, all vulnerable road users (bicycle users, pedestrians, etc.) saw an increase in deaths yet two-wheeler users saw the most substantial rise [4]. Such a trend can be partly attributed to increasing two-wheeler ownership [5], which remains the most affordable route to realizing Indians' aspirations of vehicle ownership. At higher risk of being victim to crashes, two-wheelers are also often the offending vehicle.

The recent Supreme Court Order highlights this reality: two-wheelers topped the list of offending vehicles in pedestrian crashes [6]; while cases such as the Kurnool bus tragedy showed how one two-wheeler rider's driving could result in mass tragedy.

India's unique mobility landscape further complicates things for two-wheeler riders: **mixed traffic environment, inconsistent road design, inadequate lane segregation, and the prevalence of substandard or counterfeit helmets which are cheaper and appeal to the mass market**, all heighten the risks two-wheeler riders face daily.

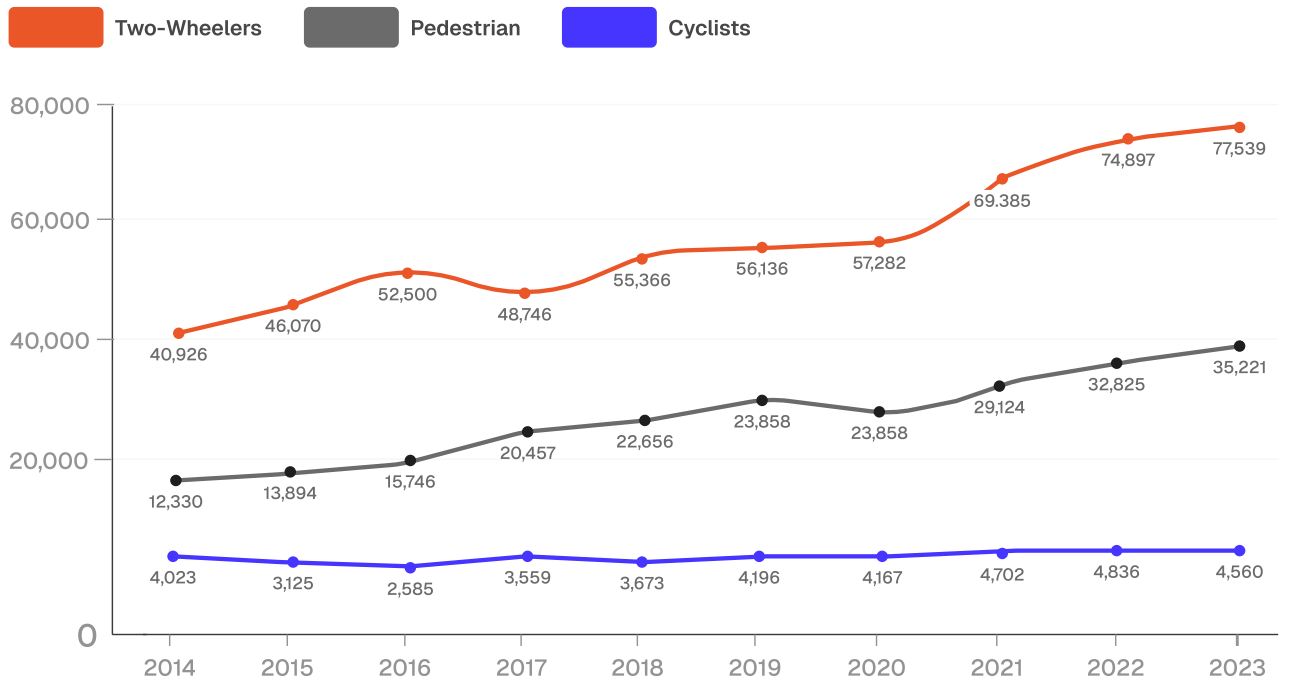
1.2 The Gig Rider Equation

Many two-wheeler riders use their vehicles for personal-use, often riding to get to work, but some have turned to these vehicles as tools for their profession: gig riders. Whether they register as delivery partners, couriers, or bike taxi pilots, these riders use their vehicles as a means of both social and physical mobility.

With food delivery, hyperlocal delivery and ride-hailing platforms reporting lakhs of riders in their fleets [7] and India's gig economy set to encompass over **23 million workers by 2030 [8]**, the number of gig riders on the streets has grown sharply and continues to increase. The demand for online delivery, quick commerce, and app-based services skyrocketed during the pandemic and has maintained steadily since. Resultingly, their fleets have grown, but so have the number of two-wheeler fatalities—as highlighted in the figure below, a sharp increase can be observed between 2020 and 2023:

Trends in India's Road Crash Fatalities (2014-2023)

Source: MoRTH, Adapted From: IndiaSpend [3]



In the midst of this rise in two-wheeler crashes, across cities, gig riders have made headlines for all the wrong reasons.

- **In Kochi, authorities have stated that on average, nearly 5 accidents caused per week involved food delivery personnel (2021) [9].**
- **Just in 2019, cases levied by Mumbai traffic police against delivery partners associated with various aggregators were estimated at almost 16,000 [10].**

- **Making several headlines, Bengaluru police registered 17,218 cases against gig riders within a week in November 2024 from a special drive conducted after they noticed rise in traffic violations when 10 minute delivery service was introduced by a popular food delivery platform the month prior [11].**
- **More recently, official figures indicate an average of approximately one gig worker crash every 3 days—with 91 crashes in 2025 officially reported till September—across Hyderabad, Cyderabad and Rachakonda commissionerates [12].**

Yet, the reality is more complex. **Riders spend long hours on the road under certain constraints, making them both contributors to and victims of heightened road risks.** As a result, many cases also spell tragedy for gig workers: riders dying within a few days of joining work [13], injured riders being left unable to work for weeks with no financial support [11], both bike-taxi pilot and pillion being killed by speeding cars [14]. In the latest case on road-rage that caught the attention of many, a couple chased a delivery rider down after he reportedly brushed past their car to ram into his vehicle. Succumbing to his injuries, it's been reported that passerbys did not pay attention to him or try to assist–had intervention taken place earlier, he may have survived [15]. The incident highlighted the sheer lack of empathy that is afforded to gig workers on the roads.

Other VRUs such as pedestrians [16] are also often affected by road crashes involving gig riders, injured as a result of speeding, wrong lane driving and more—with citizens in certain localities in Mumbai being so aggrieved by such instances that they took to monitoring violations themselves [17]. **While comprehensive gig-worker specific road crash data doesn't exist, the scale of the issue is clearly substantial.** Millions of gig workers nationwide, thousands of traffic violations recorded in major cities, and stories that echo similar international patterns of heightened crash risk—in countries from across the globe, such as Vietnam, Singapore, China, Malaysia, Morocco, Greece, and Australia.

Challenges To Road Safety

How Risks Become Routine

- 2.1 Structural & Occupational Risks
- 2.2 Operational & Behavioural Risks
- 2.3 Data & Accountability as a Risk Multiplier

Global research suggests

1 in every 4

delivery riders have been involved in a crash*

* K. Kavta, S. S. Azadeh, Y. Maknoon, Y. Wang, and G. Homem de Almeida Correia, "Estimating the value of Safety Against Road crashes: A stated preference experiment on route choice of Food Delivery Riders," Transportation Research Part C: Emerging Technologies, vol. 179, p. 105272, Oct. 2025. doi:10.1016/j.trc.2025.105272

2. Challenges To Road Safety

How Risks Become Routine

A comprehensive assessment of gig riders' road safety shows that risk is neither accidental nor isolated, but systematically produced through two distinct yet interacting domains. **Structural and occupational risks** are embedded in how gig work is organised and governed, shaping the conditions under which riders operate even before they enter traffic. **Operational and behavioural risks** arise from how individual riders navigate the road in practice, directly influencing crash occurrence and injury severity.

These risks do not arise from a single source; **they reinforce one another, compounding both the likelihood and consequences of crashes involving gig workers.** Together, they reflect a convergence of structurally elevated exposure and constrained on-road choices. The sections that follow examine each domain separately to clarify its nature and drivers. While analytically distinct, they are closely interlinked in practice and together provide a comprehensive framework for understanding the road safety of gig riders.

Structural & Occupational Risks

(The conditions under which gig riding occurs)

Structural and occupational risks arise from how gig work is organised, governed, and spatially embedded. These risks are systemic in nature: they exist independently of individual riders and are present before any specific act of riding takes place. Platform-driven time pressures, economic incentives, long hours, and the city functioning as a workplace increase exposure to crashes, while gaps in regulation, documentation, and enforcement, particularly for e-bikes, adversely affect oversight and the reliability of data recorded. This domain raises critical diagnostic questions, including:

- **Are gig riders structurally enabled to prioritise safety over speed?**
- **Do existing regulatory and enforcement mechanisms deter unsafe conditions, or primarily respond after violations occur?**
- **To what extent is road safety risk embedded in the design of gig work itself?**

Operational & Behavioural Risks:
(How riding is performed on the road)

Operational and behavioural risks arise from how individual riders operate vehicles in traffic. These risks are rider-specific and exist only when a vehicle is in use. The average gig worker mirrors the profile of the typical breadwinner in India, which is young and male—a demographic that is more likely to engage in risky behaviours and is unfortunately overrepresented in road crash statistics. The on-road behaviour of riders and their readiness to drive directly influence crash occurrence and injury severity through observable on-road behaviour. Key diagnostic questions raised by this domain include:

- **Are gig riders adequately prepared—through training and licensing—to navigate complex traffic environments?**
- **Which unsafe behaviours are most recurrent, and why do they persist despite enforcement?**
- **How do workforce demographics and experience levels concentrate or amplify on-road risk?**

Data & Accountability as a Risk Multiplier
(Why risks persist and scale)

The information needed to reduce crashes involving gig riders already exists. Platforms collect telematics and trip data; traffic police record challans and violations; unions document occupational safety hazards. Publicly available sources such as challan data, in particular, offer actionable insight into recurring risk patterns.

However, this information remains fragmented, inconsistently recorded, and poorly integrated. Data is held in institutional siloes across platforms, enforcement agencies, emergency response systems, and healthcare institutions, limiting visibility into cumulative risk and weakening accountability. **While data gaps do not create road safety risk directly, they magnify its persistence**. Fragmentation prevents timely correction, allows repeat unsafe behaviour to go unaddressed, and constrains the design of coordinated, evidence-based safety interventions.

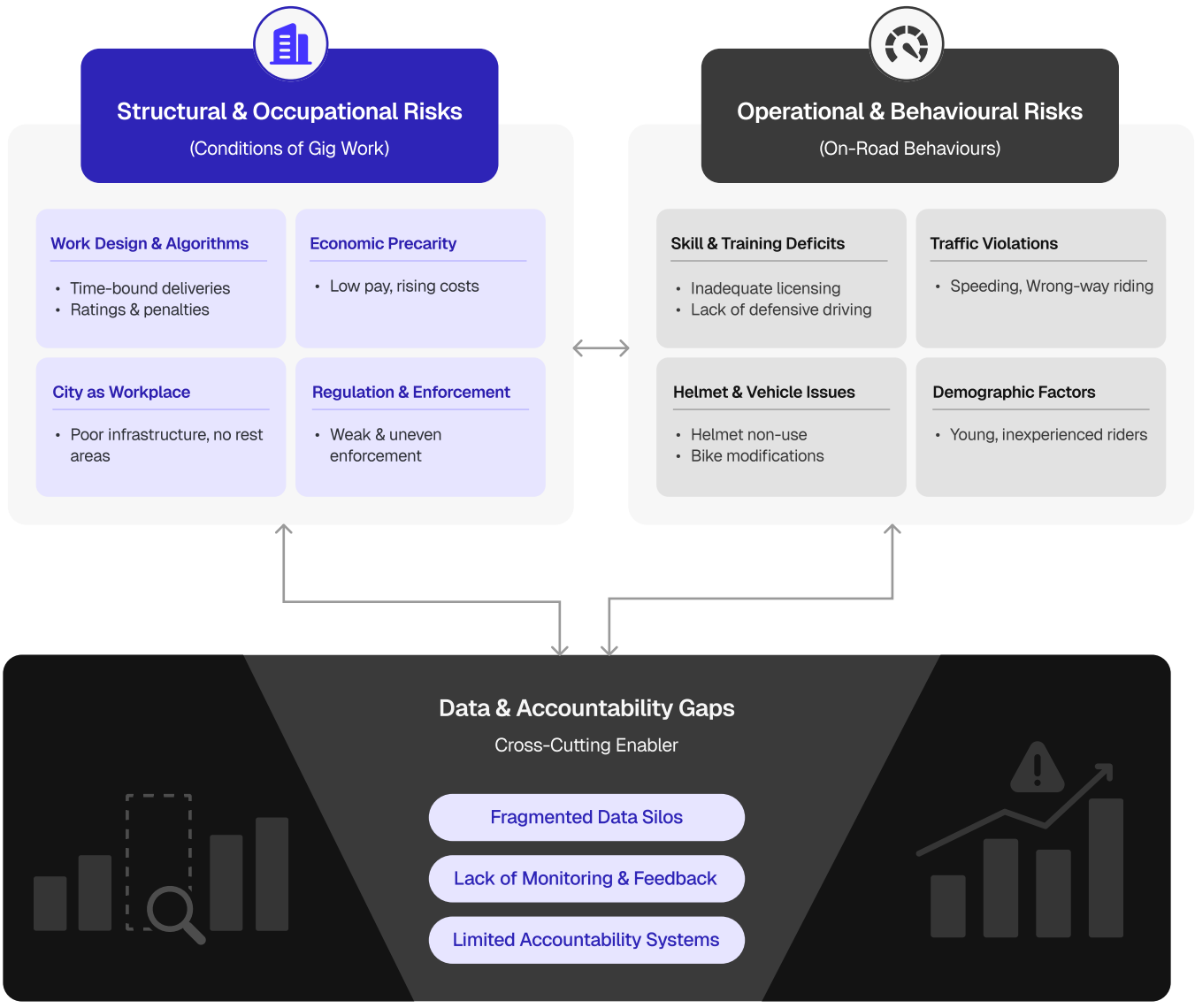
This cross-cutting failure raises critical diagnostic questions, including:

- **Who has visibility over cumulative risk across the gig work lifecycle?**

- **How are recurring violations, crashes, or injuries translated into corrective action or retraining?**
- **Where does accountability break down when risk signals are visible but not acted upon?**

Taken together, these distinctions show that gig rider road safety challenges stem from structurally elevated exposure, constrained behavioural choices, and weak feedback mechanisms. Addressing crashes and injuries therefore requires moving beyond individual blame toward a clearer understanding of how work design, on-road behaviour, and accountability systems interact to produce risk at scale.

How Gig Riders' Road Safety Risks Are Produced



Challenge 1:
Structural & Occupational Risks

Structural and occupational risks take the form of occupational hazards, regulatory gaps and enforcement challenges across the gig work ecosystem—challenges that gig workers encounter day-to-day.

Time Pressures:

- For delivery persons, quick-commerce partners and couriers, platforms assign timelines for completion of an order. These timelines are determined algorithmically on the basis of numerous factors such as the distance, traffic and weather conditions; however, some platforms do not take into account on-ground challenges (being stopped by enforcement authorities, road closure due to a sudden crash, etc.) that arise during the course of delivery in updating timelines.
- **A survey by Borzo of 10,900 gig workers across 20+ cities found that 57.3% of riders felt stressed completing 15 minute deliveries.** Time pressures compel them to engage in riskier riding behaviors—80.6% believed 60 minute timelines promoted safer driving while only 19.4% believed the 15 minute timeframe is conducive to safe driving [18], [19]. Similar patterns were observed in another survey, with 85% of the 5000+ delivery partners surveyed stating they found the issue of ten minute delivery unacceptable [20].
- Wait-time also adds to time pressures, both during busy and idle periods. During peak order periods, especially at high-volume restaurants, delivery partners can spend long periods of time waiting, despite the introduction of features such as the “food ready” option for restaurants [21]. Wait-times for orders/rides also result in lost wages, with a survey of more than 5000 delivery riders showing that 34% spend 2 hours a day waiting—in Delhi, the percentage was 50% [20].

Algorithmic Management:

- **Unlike traditional forms of employment, platform workers are not assigned work by a human manager, but an algorithmic one.** Several studies, international and Indian, have noted the problems this causes for gig riders: inadequate grievance redressal, unclear incentives, and opaque payment structures per order/ride.

- Complaints, poor ratings and even delayed deliveries can result in less work being assigned or even suspension of ID—adversely affecting their earnings [20]. Research based on 25 months of fieldwork in Hyderabad that studied the practices of algorithmic management of food delivery platforms and their workers shed light on how workers feel compelled not to reject/ delay orders to avoid such penalties; one worker shared how repeat delayed deliveries resulted in warnings and eventual deactivation of ID with no recourse for grievance redressal & reactivation [21]. The same research also highlighted how delivery partners noticed that they were being assigned less orders when closer to meeting targets for additional incentives; meanwhile, another report found workers expressing frustration over how "machines can't understand human labour" over allocation of work and payment calculation [22]. Such musings reveal a degree of frustration over such methods of algorithmic management.

- A study of close to 1000 food delivery workers across various regions of China studied the impact of algorithmic management on delivery workers; less than 5% of workers were experiencing low burnout while the vast majority experienced moderate or high burnout as a result of factors associated with algorithmic management; customer feedback, merchant preparation time, rigid work rules and ranking systems emerged as some of the factors that showed high positive correlation with burnout [23]. **Burnout has also been linked to increased risk of crash for food delivery riders by multiple studies [24] [25], suggesting that algorithmic management may indirectly contribute to unsafe riding conditions.**

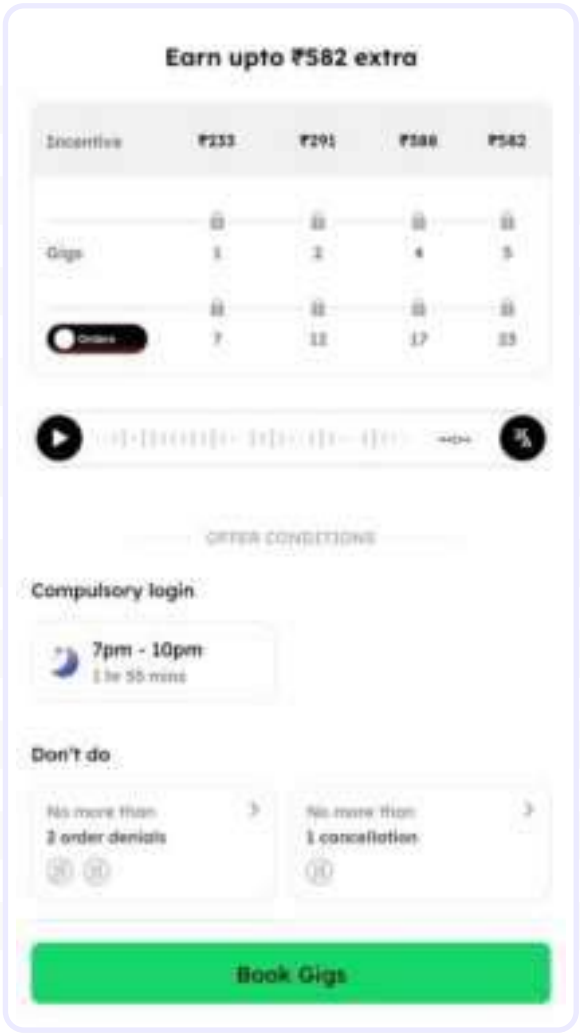
Economic Incentives:

The economic architecture of gig-work is structured around incentives that reward volume and, therefore, speed. Earnings are not very fixed, and riders must optimize for greater order/ ride completion to secure sufficient income if this work is their primary source of income. While this makes sense from a business standpoint, it produces behavioral pressures that can conflict with safer riding behaviours. These incentives operate through two pathways—the first being income pressure and volume-maximization, and the second being bonus incentives that increase exposure to high-risk conditions.

Income Pressures & Volume Maximization:

- With gig work in India across platforms operating on a pay-per-piece model, there's a great deal of variation in earnings for gig workers and, therefore, ambiguity involved: while platform data shows that average payouts per hour have increased over the years, rider accounts often describe lower base pay per order and a growing reliance on completing more tasks to maintain earnings [26]. The aforementioned Borzo survey reflects this ambiguity around what "maximizing earnings" entails: 56.5% of riders viewed 60-minute deliveries as more profitable, while 43.5% preferred 15-minute deliveries, indicating the absence of a single, predictable earnings model for those in the sector [18], [19].

- Incomes vary by geography. In metros, full-time delivery riders may earn upwards of ₹25,000-30,000/month. However, earnings below 15,000 have been reported in tier-2 and tier-3 cities such as Nagpur, even for full-time riders [27]. **Under pay-per-piece models with penalties for rejecting tasks, income depends on completing more orders, not better-paid ones.**

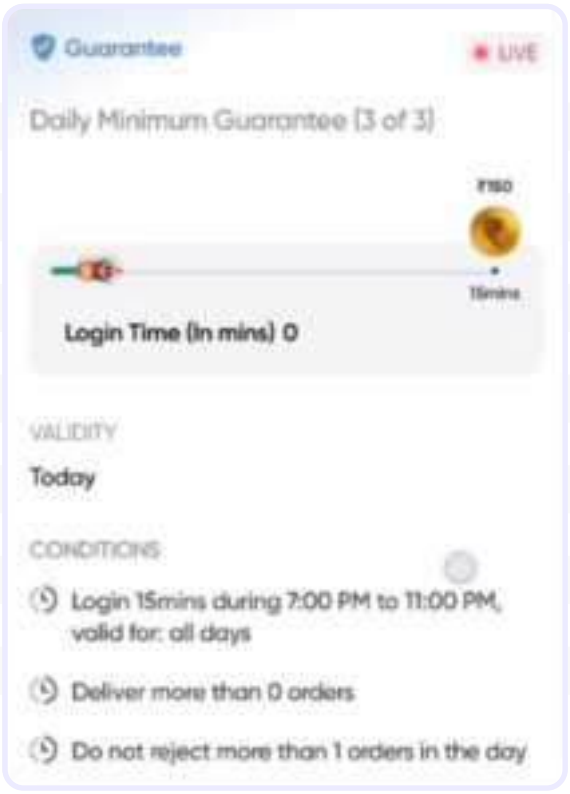


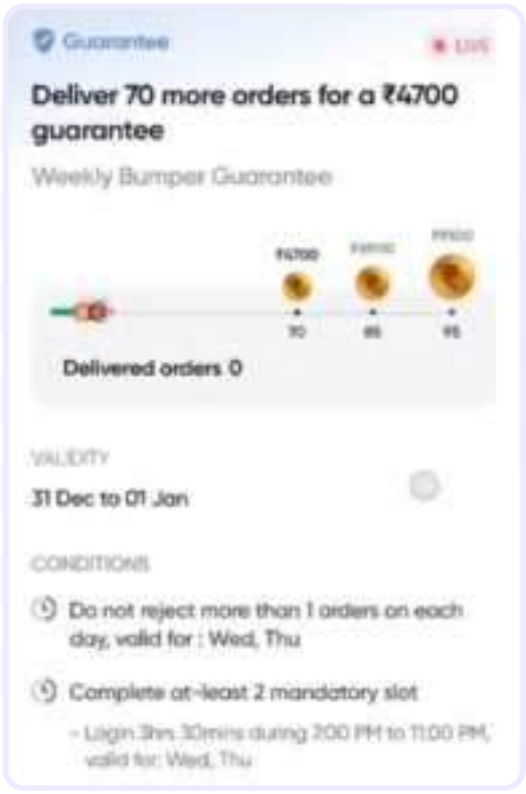
- Fuel/charging, maintenance, and required equipment such as phones and safety gear are financed entirely out of pocket for riders, be it through financing in full, rental or EMI plans. Riders easily travel 100+ km per day if working full time; for petrol two-wheelers with good mileage, this can translate into 1.5 – 3 litres of fuel daily (depending on the kind of work gig workers engage in), while EV rental plans can cost riders a total of ₹200–₹250/ day [28]. These factors can significantly erode take-home pay for riders [27], unless they're able to meet their daily incentive targets; a few platforms offer incentives upwards of ₹ 500 for completing more than 20 orders, depending on the day.

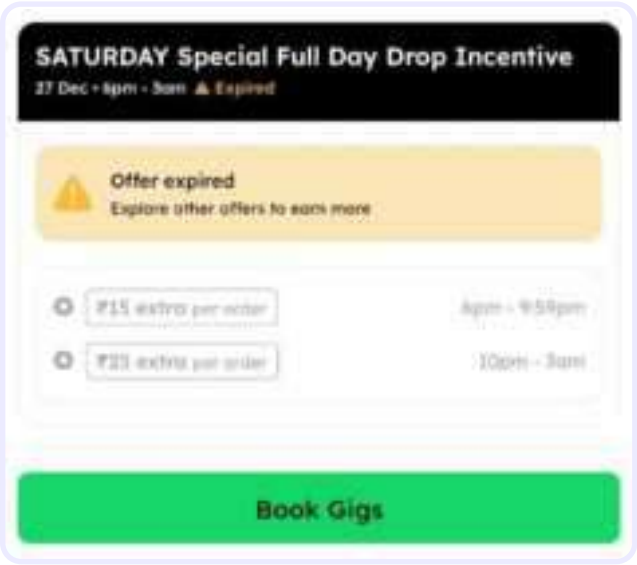
- A similarly populous region with high-density and mixed traffic, **research in Taiwan found that on demand food delivery workers exhibited more risky-riding manoeuvres during bonus hours (around lunch and dinner) compared to regular hours,** indicating that incentives can shift on-road behaviour adversely in a pay-per-piece model [29].

Incentives Creating Exposure to High-Risk Conditions:

In addition to daily bonuses for completing a higher volume of orders, platforms also employ targeted incentives during periods of high demand to maintain serviceability. These periods often coincide with late-night hours or inclement weather, which are times when orders typically surge and rider supply would otherwise decline. While these incentives can improve earnings, they also increase riders' exposure to road environments with reduced visibility, poor surface conditions, and higher crash risk.







City as a workplace:

With gig riders performing most of their work on the roads, the city effectively functions as their workplace: mobile rather than fixed, characterised by uncertainty and infrastructural constraints. Studies employing frameworks such as the Job-Demands Resource model provide some credence to the notion that workplace environment as well as time pressures directly affect riders' road safety compliance [30].

Road Infrastructure & Urban Congestion:

Poor road infrastructure and dense traffic conditions increase crash risk directly and indirectly. Waterlogging and potholes destabilize riders during monsoons [31], [32], while uneven surfaces, narrow lanes, and high traffic density lacking effective lane segregation complicates navigation for two-wheelers. In the midst of navigating difficult routes and traffic conditions, riders are expected to entertain calls, continuous notifications and messages from customers, fleet managers, passengers and the app; as a result, riders' attention is repeatedly fragmented, which elevates on-road risks.

Weather and Other Environmental Stressors:

Externalities such as weather and air quality impose an additional load on riders, affecting concentration, fatigue, and endurance during long workdays. High pollution levels and extreme heat, which are common across most serviceable areas in the summers, have been linked in global research to increased crash severity and risk [33], [34]. A Taiwanese study further observed that heat exposure compounded the effects of financial incentives on risky riding among on-demand food delivery workers [35]. **Seasonal variations and traversing unknown routes for rides/collecting orders add further unpredictability**: during monsoons, sudden rainfall and wet roads reduce maneuverability and increase chances of skidding [36], while winter fog and smog combine in regions such as NCR, reducing visibility and heightening crash risk.

Supporting Infrastructure Deficits:

Beyond environmental and road conditions, **the absence of basic support infrastructure, such as publicly accessible washrooms or rest areas, adds to the physical and logistical demands of the job [37].** Parking constraints in gated communities, office parks, and commercial buildings further extend delivery times. These deficits lengthen working hours, constrain route choice, and limit recovery time, interacting with the other occupational pressures to shape rider decision-making on the road.

Long hours, fatigue & physical ailments:

- In a research study conducted with 10,000 cab drivers and delivery persons across 8 cities, it was found that more than 80% work for more than 10 hours a day–with over 31% working for 14 hours or longer [20]. A study of 5000+ platform workers across 32 cities yielded similar results—**over 85% work more than eight hours a day [38].** As highlighted before, daily earnings differ day-to-day, and many gig workers work long hours to support themselves and their families.
- In comparison, China–a country where a quarter of the workforce is reported to engage in gig work–reports similar working hours and increased crash risk. A study in Shanghai and Nanjing showed that riders' daily work schedule averaged 9.1 hours—those working longer than 10 hours reported high fatigue and stress levels. Only 22 % reported taking at least one rest day, while over 35 % worked over 10 h daily, resulting in high fatigue and stress levels [39]; both cities observe high numbers of crashes involving delivery personnel, with Shanghai averaging one crash involving delivery partners every 2.5 days [40].
- Long working hours and carrying heavy loads is also shown to cause physical ailments such as musculoskeletal disorders (MSD); **a survey of delivery partners in Chennai found that 67% of those surveyed reported some form of MSD [41].** Such physical ailments serve as a "job strain", and inevitably impact riders' driving [30].

Documentation Issues:

- Despite verification measures such as rider selfies taken by platforms, police have also raised concerns to aggregators that more needs to be done to ensure that riders are actually operating vehicles registered under their name. Although some riders operate on rented models, many registered riders furnish their own vehicles and have been found to be riding someone else's vehicle [42]. This presents additional hurdles for enforcement authorities in cases involving riders, and recording data accurately.

- Background verification is another issue that has been highlighted by traffic police; in response to a recent uptick in criminal and traffic cases involving delivery partners, platforms claimed they conduct thorough background checks, verify documents, screen for impersonation, and provide extensive training. In practice, however, riders report that onboarding often requires little more than a government ID and a driver's licence, with far less scrutiny than platforms claim [42]. **While testing out the rider onboarding features for one platform, our team was even encouraged to finish the process despite mentioning that the vehicle we were registering was that of someone else's and that the license plate does not match.**

E-Bikes & a Regulatory Lacuna:

- Driven by regulatory mandates in regions like Delhi NCR, delivery platforms, ride-hailing aggregators, and their gig riders are increasingly shifting to affordable electric bikes [43]. As per a GRSF report, in 2025, an estimated 25-30% of last-mile fleets in India are now electric [44]; however, weak regulations and minimal compliance requirements have made them difficult to police—resulting in under-reported challans, authorities having to innovate to regulate, and an incomplete picture of the problems posed.

- In Mumbai, e-bikers—mostly delivery partners associated with platforms—have faced the ire of traffic police for reckless riding and other violations, often resulting in e-bike seizures [45]. However, e-bikes do not require license or registration plates to operate if below 250 watts or 25 km/h, and exclusion of such vehicles from the Motor Vehicle Act renders the application of helmet rules to riders virtually impossible [46].

- This has made it difficult for platforms to ensure compliance or screen for any sort of training on the part of the riders, as well as police to register cases, with police and RTO officials stating that their hands are tied unless there are traffic disruptions [46]; police find themselves having to rely on regulations aside from the Motor Vehicle Act–such as the BNS and local regulations. Within just four months in Mumbai, this led to 211 FIRs under the Bharatiya Nyaya Sanhita and 3,155 cases under other local laws [47]. Since most traffic challans are ordinarily recorded under the Motor Vehicles Act, these workarounds fragment record-keeping efforts, making it harder to build a comprehensive and uniform database.

Gaps in the Two-Wheeler Licensing System:

- As highlighted by Piyush Tewari of SaveLIFE Foundation, India's two-wheeler licensing system emphasizes paperwork over the actual competence of riders. Unlike countries such as Singapore which have graded, multi-level licensing, **India's one-size-fits-all model leaves many new riders unprepared and highly vulnerable on the roads [4]**. Most riders receive no formal training, and current tests cover only basic manoeuvres in controlled settings; in fact, to acquire a license, the most complex maneuver two-wheeler riders are required to perform is the figure eight in a controlled setting [48], with some citizens highlighting that recent requirements do not even require a full eight maneuver [49].

- With the push for electrification of fleets in many states and UTs such as Delhi NCR, many gig workers are turning to electric two-wheelers and many platforms are partnering with EV providers to provide an option to rent for riders if they don't have a vehicle of their own; **however, low-speed EVs do not require a license to operate**. Gig workers with no license or prior riding experience are therefore more vulnerable, left unprepared to face the roads.

Most Riders Receive No Formal Training, Current Tests Only Cover Basic Maneuvers.

Challenge 2:
Operational & Behavioural Risks

While the preceding section focused on structural and occupational vulnerabilities, road safety outcomes are shaped by both systemic conditions and individual behaviour. Although this dimension is less extensively documented, given the stronger research focus on precarity and victimisation of riders, it remains important to understanding overall crash risk. In a bid to maximize earnings, certain riders drive without a license for their vehicle, engage in behaviors such as overspeeding and illegally modify vehicles that generally require less oversight.

Exploitation of Gaps in Two-Wheeler Licensing System:

- In comparison to international standards, India's two-wheeler licensing system leaves much to be desired—training is comparatively minimal, verification is weak, and licences are easy to obtain or fake. It is relatively inexpensive to procure a fake RC & license. In his bid for the Motor Vehicles (Amendment) Act (then Bill) 2019, Hon'ble Minister Nitin Gadkari highlighted that about 30% of all licenses are fake [50]. **Though highlighted by Mr. Gadkari six years ago, the problem persists; riders reported to us that a fake licence can cost just a few thousand rupees, a small price compared to the prospect of higher earnings through gig work for some.**
- Without a license, these riders are woefully unprepared to face Indian roads: with little awareness of traffic laws, little willingness to spend time and hard-earned money to learn, and incentives to make more orders per-day to meet daily targets.

E-Bikers: Often Helmetless, Sometimes with a Need for Speed

- As highlighted, certain low-speed models do not require wearing a helmet [51]. This leads to many e-bikers not wearing a helmet or providing the pillion rider with one, being unaware or uncaring of requirements to wear one.
- **To skirt regulations, delivery partners have also been found to modify e-bikes that are registered under 25 km/h to go upwards of 40 km/h**; in Dec 2024, cases were registered against 4 delivery partners for tampering with the speed limits of their vehicles [52].

Demographic Correlates:

- Large-scale surveys of gig workers indicate that this workforce is largely youth and male dominated—a demographic profile associated with riskier driving behaviours.

94% of 5,000+ delivery partners surveyed were between the ages of 21-40 [20].

While another survey of 5000+ gig workers found the average age to be 28 years [38].

- This demographic of young males shows a higher propensity for engaging in risky-riding behaviours in India and abroad:

  a. In India, studies have found correlation between this demographic profile and over-reported helmet use [53], poor road safety awareness and behaviors [54]. One study employing a modified version of the Motorcycle Rider Behavior Questionnaire (MRBQ) for food delivery riders in Mumbai found surrounding traffic and rider's own aberrant behaviours as the chief factors for crashes involving gig riders—with younger riders with experience of less than 2 years being more likely to engage in risky behaviours [55].

  b. In other LMICs such as Nigeria and Malaysia, studies found younger two-wheeler riders engage in riskier on-road behaviours, had poorer traffic awareness and were more involved with crashes [56], [57]. A comprehensive, cross-country systematic analysis of research on the risk factors of food delivery riders' road crashes found that younger, male individuals were more likely to engage in road safety violations [58].

Challenge 3:
Data Scarcity & Siloes

There are several touchpoints across the gig work lifecycle that can increase or reduce crash risk for gig workers, and a significant volume of relevant data is already being generated across these touchpoints:

- **Platforms collect detailed telematics data, track gig workers' trips, and often maintain internal records of crashes or incidents,**
- **Traffic police collect and report challan data that reveals the kinds of violations gig workers engage in that increase risk of crash and its severity, often through time-bound, special enforcement drives,**
- **Personnel manning PCR vans serve as first responders to crashes, arriving on-scene to provide emergency aid, secure the site, and file an FIR to capture victim and vehicle details, and**
- **Trauma centres routinely treat gig workers in critical condition following road crashes, recording critical data on the nature of injury and severity [59], [60].**

However, this data is collected for distinct operational purposes, remains siloed across institutions, and is not comprehensively or consistently available in the public domain. There is little integration across platform, enforcement, and healthcare datasets, making it difficult to trace risk across the entire lifecycle of gig work or to establish accountability for the conditions under which riders operate. This fragmentation underscores the need for concerted action to enable more systematic, standardised, and transparent data collection that can meaningfully inform on-ground safety interventions.

In the absence of comprehensive crash data for gig riders, **challan data** from special drives have emerged as an important metric that offers a degree of actionable insight into risk patterns and non-compliant behaviour in the interim.

The Scale of the Problem:

While regional challan data is still scattered and limited, figures reported by authorities indicate the extent of the problem.

- Challans recorded against delivery partners reach thousands year-on-end across metropolitan areas. As highlighted earlier, in 2019, estimates of cases against delivery partners in Mumbai reached almost 16,000 within the year; in November 2024, Bengaluru saw even more cases within a single week of a special drive conducted against delivery partners.
- In Bengaluru, challans recorded against delivery riders rose from 30,968 in 2023 to 52,153 in 2024, hitting a record high 63,718 within the first nine months of 2025.

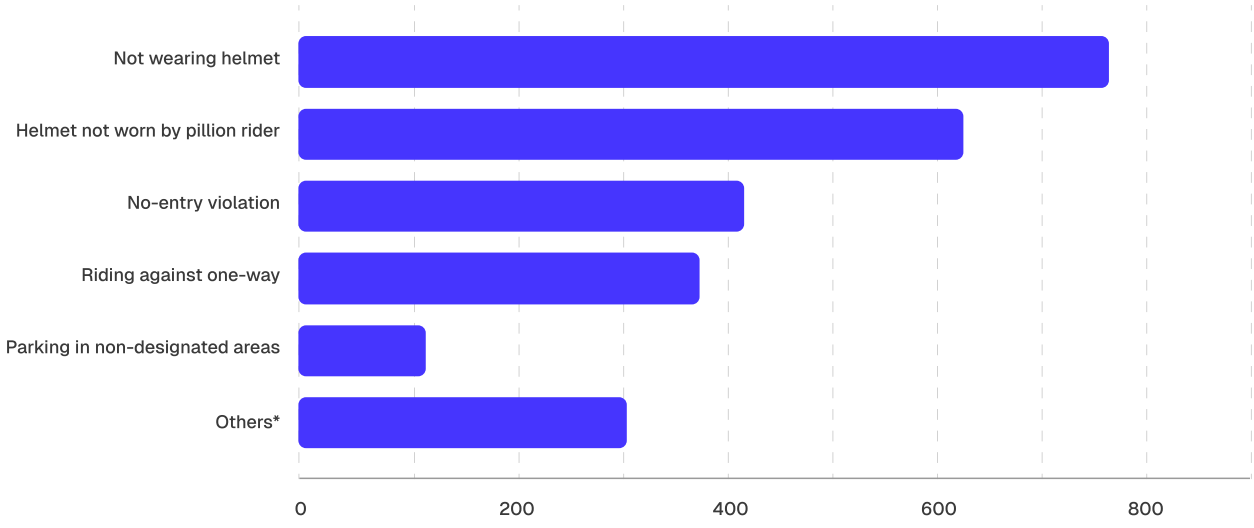
The Nature of Cases:

Even through the limited lens provided by just two cities, a closer look at the cases recorded in Mumbai and Bengaluru–major hubs for platform operations–shows that the devil lies in the details. The nature of challans recorded yields a great deal of insights.

- During the week-long special drive conducted by Bengaluru Traffic Police (BTP) in 2024, over 2.67K cases were registered against delivery partners on November 9th alone:

Violations Recorded Against Delivery Partners
Bengaluru Traffic Police - Nov 9 2024

+2.67K cases
Registered against delivery partners in Nov 9th alone



*Other violations included footpath offences, mobile phone usage, etc.

- Despite helmet non-compliance topping the list of offences, as per BTP, footpath riding was the most common complaint received–an indication that actual, recorded offences through challan data are a vital indicator of the kinds of harmful non-compliance delivery partners are engaging in.
- Notably, just two days after, 5,979 violations were recorded against delivery partners–this time, with pillion riders' helmet non-compliance and no-entry violations topping the list [61]. **Within just a few days, while the broader trends and patterns observed in types of challans remained the same, the order of most-observed violations changed.**

Even a cursory examination of data from these special drives highlights city-specific trends in violation frequency, suggesting that rider training could be tailored to local risk patterns rather than relying on generic road safety awareness programmes. This underscores the need for consistent data-sharing across enforcement agencies, platforms, and healthcare institutions to generate actionable insights on risk.

In contrast to the piecemeal information currently available, comprehensive, year-round recording and public reporting of data on delivery partners and bike-taxi riders would enable a more robust assessment of risk patterns, including traffic violations, crash frequency, and injury severity. Such granular data would support clearer identification of high-risk behaviours, repeat offenders, and risk contexts, ensuring that interventions are evidence-based and effective.

Foundational Interventions:

Two immediate priority areas

- 3.1 Inadequate Training
- 3.2 Helmet Non-Compliance

39% of crash fatalities in 2024 due to helmet & seatbelt non-compliance*

* D. K. Dash, “Speeding killed nearly 1.24 lakh people, non-wearing of helmet & seatbelt caused 39% deaths,” Times of India, Dec. 11, 2025

3. Foundational Interventions:

Two Immediate Priority Areas

Data scarcity and siloes continue to limit clarity on which risks within the systemic and individual categories warrant immediate prioritisation. **However, drawing on secondary literature, challan data, and conversations with gig riders, two interlinked issues emerge as clear and actionable starting points: helmet non-compliance and inadequate rider training.** Both reflect deeper gaps in enforcement, licensing, and on-the-job protections; addressing these challenges would reduce crash risk and injury severity in the absence of comprehensive data for more targeted interventions. Prioritising these issues therefore offers a pragmatic way to mitigate core occupational hazards while more concerted data collection and sharing mechanisms are developed.

3.1 Inadequate Training

- With gig riders spending so much time on the roads along with the greater vulnerability they face due to choice of vehicle, the training they receive is inadequate in ensuring road safety compliance as well as preparation for situations that arise on the road.

Why?

- In response to the rising number of cases against delivery partners in Bengaluru in 2024, BTP organized a meeting with 9 e-commerce companies, only to learn that, post-pandemic, many delivery workers had been arriving from neighbouring rural areas to engage in this gig work and were unaware of traffic laws. This led to BTP conducting targeted training for delivery partners in collaboration with platforms [62]; however, this is not an issue that is specific to Bengaluru alone and must be addressed at scale.

- With a sample of 431 food delivery riders, a study conducted in Mumbai revealed that 54.06% had been involved in a crash and 75.64% had been involved in one or two near-crash incidents. **The same study reveals that crash risk was determined significantly by surrounding traffic and rider's own riding behaviors–factors which can be mitigated by proper rider training [55].**

- In recognition of the need for enhanced training of drivers, the Motor Vehicle Aggregator Guidelines 2025 require that “Aggregators” provide 40 hours of training (including 6 hours of first-aid training) in place of the 30 hours prescribed in the 2020 version that preceded them–a recognition of the increased need for providing training to gig drivers and riders to ensure the road safety of all road users. However, these guidelines only apply to ride-hailing platforms.

- Aside from bike-taxis that already operate in the grey in most states (despite the go-ahead provided at the Union level by the recent guidelines), there is no regulatory requirement for delivery and e-commerce apps to provide such training to their riders. Moreover, these guidelines are not binding and subject to state adoption. Since the ambit of these guidelines do not extend to other “aggregator” platforms beyond ride-hailing apps, training (induction, refresher and/or remedial) for riders is sparse, not comprehensive and varies across states and employers. Moreover, while the guidelines recommend online as well as offline training, training remains mostly online and barely offline.

- Road safety training on delivery and ride-hailing platforms is largely limited to a few basic video modules–most of which are generally not a compulsory watch to get onboarded. In-person training, be it first-responder training or preventative training such as defensive driving, is taught sporadically in a handful of cities to a few batches of gig riders, rather than being implemented nationwide. **However, it is important to note that research suggests that training on its own has limited impact on sustained behaviour change & crash reduction [63]. Its effectiveness is significantly enhanced when combined with complementary measures such as enforcement and interventions to improve helmet use and compliance [64].**

3.2 Helmet Non-Compliance & Non-Use

- Being on the roads for longer periods of time than most other workers who use it for transit and personal reasons, gig workers are acutely affected by helmet non-compliance. City-specific challan data from Mumbai and Bengaluru during special drives further substantiate the problem, with helmet non-compliance being a chief reason for challans.

Why?

The Most Proven Safety Intervention:

- With non-usage being identified as one of 5 risk factors for two-wheeler road crash fatalities [65], wearing a helmet correctly can reduce the risk of severe injury by 70% and that of death by almost 40% [66].
- As per Dr. Geetam Tiwari, **the correct usage of a good quality helmet is the only internationally recognized safety measure for two-wheeler riders [4].**

Non-Compliance Persists:

- Despite the clear and potentially life-saving benefits, helmet usage remains persistently low amongst two-wheeler riders and their pillion passengers; Acko's platform data between December 2024 and June 2025 revealed that 10.5 million plus helmet-related offenses were recorded across India and made up more than one-third of all traffic challans issued–with two major e-commerce hubs, Bengaluru (#1 in repeat offenses) & Delhi (#1 in incidence rate), leading the way [67].
- Moreover, correct helmet usage still poses a huge issue across the nation. A recent study of close to 100K motorized two-wheelers across 15 intersections in Bengaluru showed that while prevalence of helmet usage was high, correct helmet usage was only observed in 38.4% of riders [68]. Over a quarter of riders used non-standard helmets—stats that indicate that there has not been much improvement since a similar study in 2019 [69]. Similar numbers were observed in the neighbouring Mysuru city in 2020 [70].

The Hows and Whys of Faltering Helmet Use for Gig Riders:

- With EVs making up a significant proportion of last-mile delivery and bike-taxi fleets, helmet usage in this segment is lacking particularly due to weak regulatory requirements and subsequently lax enforcement—just a few months ago, the Hindu's reporting revealed that several bike taxi riders in NCR operate battery-fitted bikes without helmets [43]. **With aggregators pushing for 100% electrification of their fleets in different states [71] and gig workers increasingly turning to EVs as a result, there needs to be a greater emphasis on helmet compliance through enforcement and awareness drives.**
- In general, pillion-rider helmet compliance remains lower than it does for drivers. For bike taxis, usage of helmets by their pillion passengers remains an issue of passenger and/or pilot willingness.

Pilot's Non-Provision of Helmets:

- Several passengers across metro cities have reported that helmets are rarely offered and sometimes refused to them by bike taxi pilots. In Chennai and other metro cities, citizens report rarely having been offered a helmet–in cases where a helmet is offered [72], [73], they're sometimes instructed to put it on for show when traffic police appear [74]. This is especially problematic considering Tamil Nadu was the state that saw the highest number of two-wheeler crashes in 2023.
- Even in instances of passengers requesting a helmet, issues arise. In a recent case in Delhi, a woman whose requests were repeatedly refused by a bike taxi pilot sustained injuries after a crash during this ride. Despite the crash taking place near traffic police, it was reported that no action was taken against the bike taxi pilot. [75]

Passenger Non-Compliance:

- Bike taxi pilots have cited facing issues in encouraging their passengers to use helmets, even when provided by them.
- Even a year post-pandemic, fear of infection drove passengers away from helmet usage and dissuaded pilots from carrying them [72]. Beyond the general hesitance concerning spread of disease, customers have cited hygiene and smell as a reason for refusing helmets [73].
- While a solution for last-mile connectivity and beating congestion during peak office hours, this has also turned into an excuse for helmet non-compliance–with passengers citing the short distance, discomfort and being unable to use phones during the ride as cause to not wear helmets [76]. Other reasons for declining helmet usage by customers are more cosmetic–with a Rapido Manager asserting that passengers refuse them to avoid hairfall and to beat the summer heat [77].
- **Riders are often instructed to cancel the ride if passengers refuse helmets, but risk losing business greatly.** In light of hygiene issues with helmet sharing, a rider in Bengaluru felt compelled to exchange helmets every week at a local store for 100 INR to avoid cancellation. Yet, riders inevitably complained about the smell after a couple of days [78].
- Insisting on helmet usage by passengers also puts bike taxi riders at risk—a recent case in Ahmedabad involving an uncooperative passenger resulted in a fractured wrist for one rider who insisted the passenger wear one or cancel the ride [79].

Regulatory Requirement, Yet Lack of Awareness & Safety:

- Even in states where the centrally mandated 1000 rupee fine and three month license suspension applies, practically speaking, enforcement is often diluted by traffic police who decide to engage in reducing the amount through a collection of spot-fines (deciding not to officially record the challan, but simply collecting the money on the spot) and sometimes pocketing the fines themselves—with cases of staff without the rank or authority to do so engaging in spot-fine collection and being penalized for the same [80]. Female and disabled gig riders have also mentioned that they're often let off with a warning rather than a challan.
- **Introduced as a more efficient means of ensuring enforcement of traffic laws, automated enforcement still lags in ensuring helmet compliance.** It may result in stricter compliance when detecting the lack of helmet usage [81], but struggles to detect incorrect or substandard helmet usage–for example, cameras are unable to detect the difference between half-helmets and those that are ISI-certified [82].
- Despite increased fines under the Motor Vehicle Amendment Act 2019, police have faced political pressure to reduce fines and relax enforcement in states such as Karnataka, Gujarat and Maharashtra [83], [84].

A Call To Action

4. A Call To Action

Large-scale, inter-city surveys conducted in partnership with unions and associations representing platform workers reveal that **the profile of the average gig worker is that of a young breadwinner–male, aged 18-30**; this is the same demographic that is **most affected by road crashes in the country**. Solving for the reduction of road crashes involving gig workers could therefore lead to great impact—creating a roadmap for all two-wheeler users, and improving the safety of all road users.

What makes gig rider safety distinct, and more solvable, than general two-wheeler safety is the presence of another institutional actor: the platform, or aggregator. Aggregators collect real-time telematics data and exert operational control, uniquely positioning them to identify patterns of risk and implement preventive safety interventions in partnership with road safety experts, law enforcement and civil society actors such as Crashfree India. The Motor Vehicle Aggregator Guidelines 2025 place responsibility of challan accountability on aggregators as well–of ensuring that onboarded riders' vehicles do not have any pending challans, and maintaining documentation through the Vahan portal of pending e-challans.

Government officials, law enforcement, gig workers themselves and citizens across the nation have also taken note of this growing concern, and begun acting on the same. Of note are the proactive responses in Kerala, Odisha, Bengaluru, and Mumbai by the authorities in light of this issue. In response to a recent letter from the Prime Minister on the subject and rising complaints, officials in Odisha declared upcoming advisories targeted at delivery companies to ensure better road safety compliance of their partners [85]. Under the leadership of IFAT and TGPWU, delivery partners across the country observed strikes on the peak-order days of Christmas and New Year's eve in 2025—with one of their demands being improved safety measures, including safety gear [86]. A concerned advocate in Delhi NCR recently filed a PIL for the "unchecked violations by delivery agents" to the High Court [87]. In 2019, citizens in the locality of Orlem in Mumbai began keeping extensive track of violations conducted by delivery partners in their region for years on end [16]. Calls for gig worker safety have taken the Parliament and social media by storm.

The missive, cases being heard in the courts, and anticipated regulatory actions from the state authorities indicate two things: first being the sheer scale of this issue, and second being that reigning in this issue will require shared accountability across the ecosystem—gig riders who engage in traffic violations, platforms who need to utilize challan and telematics data to manage this, and traffic police who must ensure concerted efforts and comprehensive challan data collection.

Riders can be held accountable while maintaining their means of livelihood. Platforms, enforcement agencies, civil society, and stakeholders across the ecosystem stakeholders must work together to achieve this through monitoring, rewarding compliance, continuous training, and proportionate action against unsafe riding practices, supported by the use of telematics and challan data.

At **Crashfree India**, we're approaching the challenge of ensuring gig rider safety through the lens of shared responsibility and working across the ecosystem to:

- **Study the issues the road safety challenges faced and posed by gig workers**
- **Collaborate with gig workers, platforms, and traffic police to pilot practical, on-ground safety interventions**
- **Examine existing policies and regulations to identify gaps that need to be addressed**

We welcome partnerships with platforms, policymakers, researchers, and civil society organizations to co-create, test, and scale solutions that meaningfully reduce crash instances involving gig workers.

For any queries or for partnerships, please reach out to:
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