July 2025

# What drives red light running in London cyclists?

A report produced for Lime by Thinks Insight & Strategy

Thinks
Insight & Strategy

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## Foreword from Pete Dyson

The first 'three-colour' traffic lights appeared in Britain in 1926, used to control a busy junction at Piccadilly Circus. Nearly 100 years later and the fundamental principles of waiting at a red light endure, but the number of people using them, types of road users and safety standards have evolved considerably.

We all agree cities need more efficient, healthy, affordable and equitable ways of moving around, but for cycling to get more popular, safer and become more inclusive, we need more people to respect the rules. Red light running is a dangerous and illegal behaviour, putting cyclists and other road users at risk, undermining the reputation of cyclists, and potentially putting the brakes on more public and private investment in cycling.

So far, observational studies at junctions and police reports have counted the number of offenders, but this report is the first to examine the who, what and why behind red light running. While we all witness red light running, and often form our own theories about why it happens, I'm pleased this report adds depth and rigour by combining behavioural change theory with existing cycling literature, online social listening, qualitative focus groups and a large-scale survey of over 1000 UK cyclists.

What stands out? It is striking that red light running is viewed so negatively by cyclists themselves. It is seen as dangerous and anti-social. The distribution of offenders and their motivations paints a mixed picture. On the one hand, while over half of London cyclists (52%) admit to occasionally running a red light - sometimes for defensible reasons such as avoiding cars in bike boxes - a minority of frequent and persistent offenders are responsible for the bulk of incidents. This report highlights the need for coordinated interventions at multiple levels - combining public communication, proportionate enforcement, infrastructure reform and smarter use of technology to support safer behaviour.

What's next? This report is intended to support transport professionals and policymakers in developing practical, data-led interventions. It will also help inform Lime's upcoming cycling safety campaign and how Lime develops its broader safety efforts. With a growing, loyal user base and strong reach among newer cyclists, Lime is well positioned to encourage safer cycling behaviour in London and across the UK.

Finally, I hope the cyclists reading this report recognise the active role we all play in acting responsibly, leading others to do the same, so we can enjoy the many benefits cycling brings to our lives and our cities.

***Pete Dyson***
Researcher at University of Bath and Bicycle Mayor for Bath
Co-author, Transport For Humans

## Key findings

1. **52% of London cyclists say they run red lights at least occasionally, with 16% saying they do so often.**
    - Frequent cyclists are more likely to be red light runners. A quarter of daily cyclists say they run red lights often, with commuting being the journey type where it is most likely to occur.
    - Red light runners also tend to be younger cyclists (aged 25-30), more confident cyclists, and those with a greater appetite for risk.
    - However, almost all of the London cyclists in the focus groups admitted to running red lights on some occasions, so survey respondents may be underreporting their own red light running behaviours.
2. **A small group of frequent riders are likely responsible for the vast majority of red light running instances due to the regularity with which they are committing them.**
    - Data analysis suggests that two thirds (66%) of instances of red light running events are attributed to the top 10% of cyclists, and the top quarter (25%) of cyclists contribute to over 91% of all red light running events.
    - The remaining three quarters contribute less than 9% of all red light running events, suggesting that red light running is most concentrated among a small group of habitual cyclists.
3. **Red light running behaviours are driven by a combination of different factors, including lack of enforcement, inadequate infrastructure, lack of awareness around it being illegal and feeling unsafe at junctions.**
    - Other motivations include it being accidental, a lack of traffic or pedestrians and cyclists being in a rush.
    - The least popular reason was not wanting to be charged for the time spent waiting on a rental e-bike.
    - Cyclists feel there are few or no negative consequences of red light running, as they are unlikely to get caught and potential harms are not top of mind.
    - Habits, route familiarity and influence from peers can also play a part in driving the behaviour.
4. **Red light running is viewed negatively by cyclists themselves, ranked as one of the top three most dangerous behaviours associated with cycling.**
    - Red light running evokes strong emotional reactions online. Cyclists themselves describe it as a major source of frustration within their own community.

- It is perceived by cyclists to be as dangerous as cycling without a helmet, but less dangerous than cycling under the influence of alcohol or drugs.
- However, there is a perception from a minority of cyclists that it can be done safely, particularly if they are experienced and if the roads are quiet.

5. **A holistic approach is needed to reduce red light running, with interventions falling into three main categories:**

I. **Education - to increase awareness of the risks of red light running, and upskill Londoners on safer cycling.**

- 13% of red light runners are unaware that it is illegal. Public awareness campaigns are needed to remind cyclists that red light running is not a risk-free crime - for example through signage at busy junctions.
- More targeted cycling safety training is recommended to improve cycling behaviours on the road.

II. **Infrastructure changes - to enable cyclists to feel safer and more in control of their surroundings.**

- Cyclists strongly support infrastructure changes to deter red light running, most believe that protected cycle lanes (77%), more dedicated traffic lights (73%), and car-free routes (69%) would be effective.

III. **Increased enforcement - to create stronger deterrents for red light running.**

- Cyclists currently feel there are few negative consequences of red light running, with little risk of being caught or penalised.
- 72% believe that harsher fines and sentences would help deter the behaviour - suggesting stronger enforcement could shift the perceived cost-benefit balance.

## Research objectives and approach

Red light running by cyclists is a widespread issue across London, with a recent observational study finding over a quarter (28%) of cyclists running red lights on the busiest roads (ITV news, 2024).

Understanding the motivations behind red light running is key to designing effective interventions that address this, and other dangerous road behaviours.

The objectives of this research are to:

- Understand cycling in London, including attitudes, behaviours and journey types.
- Identify the groups who are more likely to run red lights, and the situations that can lead to this behaviour.
- Apply insights from behavioural science to understand the factors that lead to red light running.
- Co-create behaviour change intervention ideas to reduce red light running in London.

Our research took a three-stage approach to *identify*, *explain* and *influence* cyclist behaviour:

1. *Identify* what is already known about red light running behaviours through a **behavioural audit** – reviewing existing research on red light running motivations and past interventions.

2. *Explain* why cyclists run red lights and the cognitive, social and environmental factors that influence this through:
    a. **Social listening** – analysis of conversations that mention red light running online.
    b. A ten minute **online survey** of 1030 UK city cyclists (defined as those who claim they use a pedal or e-bike at least once in an average month) between 12th-19th May, 2025.
    c. Six **online focus groups**, each with six London* cyclists, between 7th-13th May, 2025. Each group involved a mix of demographics, cycling purposes (leisure, commuting, delivery drivers) and locations across London.

3. *Influence* cyclists' red light behaviours through practical and creative interventions. A **co-creation workshop** was held on 29th May 2025 with attendees from Lime, Transport for London, London Cycling Campaign, Cycling UK, the University of Bath, Thinks Insight & Strategy and Headland Consultancy.

## Application of behavioural frameworks

We selected the Behaviour Change Wheel (BCW) (Michie, van Stralen & West, 2011) as the behavioural framework through which to structure the research, interpret the results and approach intervention design. The COM-B model (the 'hub' of the BCW) helps us to understand the range of Capability, Opportunity and Motivational factors that influence red light running. The BCW then outlines different types of interventions suited to addressing identified COM-B factors.

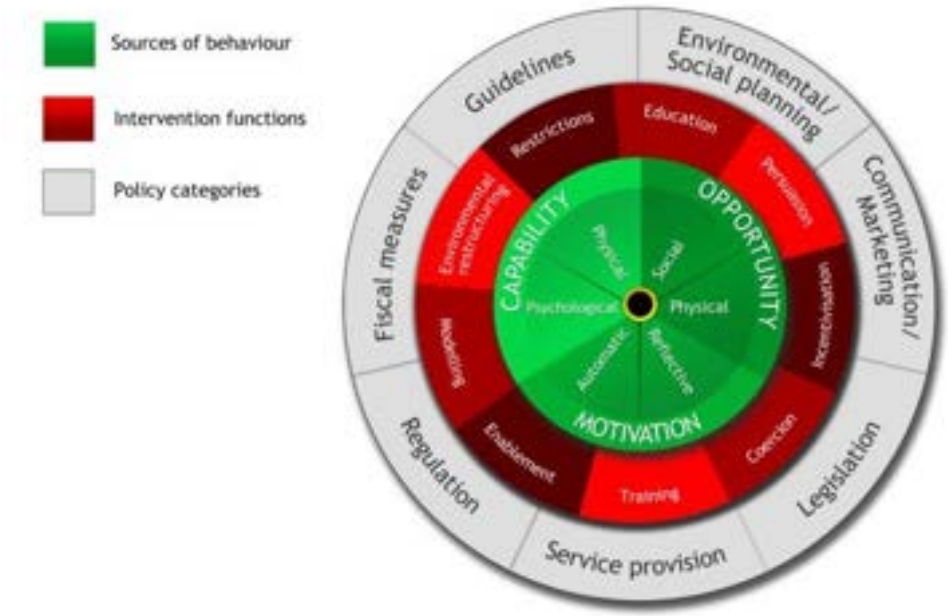



*Fig: The behaviour change wheel*

** We focused on London for the qualitative phase of research because London has seen the biggest uptake in cycling in the UK in recent years, particularly due to the increase in rental e-bike use.*

*Throughout this report, we include data at both the UK city level, and London level, and compare London and non-London cyclists where there are meaningful differences.*

*While we understand that scooters and e-scooters also have a presence in UK cities, and contribute some negative behaviours, for the purpose of this report we have focused on cycling.*

More detail on the research approach and methods can be found in *Appendix 1.1.*

## Risks and frustrations on the road

### London cyclists often feel at risk on the road due to other road users

In the focus groups, cyclists of all types told us they often feel at risk on the road, particularly due to the behaviour of other types of road users, most frequently car drivers. This can also include pedestrians, with cyclists citing them not paying sufficient attention when crossing roads (i.e. looking at phones) or walking in cycle lanes.

More confident cyclists told us that feeling at risk can lead them to behave more boldly - taking up more space on the road and taking more risks. In contrast, infrequent (and often more cautious) cyclists told us that they tend to be more careful, strictly following the rules and avoiding dangerous intersections or situations when they feel at risk on the road.

### Busy junctions are viewed as the main hot spots for danger

Intersections with poor infrastructure (i.e. no cycle lane or barriers separating the road from the pavement) are seen as especially dangerous for cyclists. A 2022 study by the Department for Transport found that junctions are among the most dangerous places for cyclists on UK roads, with 41% of all reported serious injuries to cyclists occurring at or within 20 metres of a junction (DfT, 2022).

### Cyclists feel particularly vulnerable when other vehicles don't respect designated cycling spaces

Cyclists find that other vehicles often don't respect the space on the road dedicated to cyclists, such as painted bike lanes or cycle boxes at lights. This means they often have to take up space on the road elsewhere, cycling around parked cars, weaving between lorries, putting themselves at more risk than they would like.

> *"The thing that immediately came to mind for me and that really genuinely enrages me when I'm cycling is motor vehicles parked in cycle lanes and in bus lanes… with just such disregard for the safety of other users." – Infrequent cyclist*

Many cyclists also experience vehicles passing them closely on the road, leading to concerns about getting knocked off their bikes or getting run over. Participants recount past negative experiences where drivers have behaved aggressively towards them, chasing them or crashing into their bikes – with this tending to impact female cyclists more.

> *"I've been quite influenced by a very, very bad experience I had where someone overtook me at a junction and took umbrage with it and they followed me all the way home, tailgating all the way down my road, which is a one way road and I went the wrong way, they were swearing at me and screaming at me and I was so frightened." – Frequent cyclist*

### Cyclists feel there is a vicious cycle between poor cyclist behaviour, retaliation from drivers, and a negative image of cyclists

Participants feel that cyclists have a poor reputation due to their poor behaviour on the road, citing pavement cycling, racing, weaving in between traffic and red light running. They feel that this aggravates relationships with other road users, particularly drivers, who then behave more aggressively towards cyclists in general. Those who cycle most frequently and confidently feel that this then increases their need to distance themselves from cars by bending the rules of the road, creating a negative feedback loop of poor behaviour.

# Red light running

## Frequency of red light running

### The evidence base suggests that red light running is a common traffic violation among cyclists

Red light running reported incidence rates vary significantly across studies, depending on the study's methods and context. For example, while observational studies from both the Netherlands (van der Meel, 2013) and London (Nextbase, 2024) record a red light running rate of 28%, self-reported data from Germany shows that 45% of cyclists admit to occasionally running red lights (Alrutz et al., 2009).

Cyclists in the focus groups feel that they see red light running happening more often in London now, compared to the past few years. They feel this is mostly caused by higher numbers of cyclists on the road. Interestingly, there is a tension between the audience groups that cyclists believe are red light running the most (inexperienced cyclists), and what the data suggests (frequent cyclists). See more on perceptions of red light running below.

Met Police data on fixed penalty notices (FPNs) for cycling offences shows that over 25,000 red light running offences were recorded between 2017 and 2022. While FPNs for red light running rose steadily from 2017 to 2021, they declined in 2022. This drop may indicate fewer incidents, in contrast to what the focus group participants experience, or it could reflect reduced police enforcement during that time.

| Row Labels | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | Grand Total |
|---|---|---|---|---|---|---|---|
| **Ride a pedal cycle on a road and fail to comply with the indication given by a traffic sign/light** | **2445** | **3548** | **5893** | **4490** | **4751** | **2324** | **23451** |
| Fine Registered | 201 | 630 | 1126 | 827 | 688 | 257 | 3729 |
| NFA | 404 | 245 | 260 | 736 | 511 | 167 | 2323 |
| Ongoing | | | | | 673 | 755 | 1428 |
| Paid Confirmed | 700 | 2467 | 4288 | 2597 | 2370 | 887 | 13309 |
| Potential Prosecution | 65 | 197 | 219 | 49 | 62 | 6 | 598 |
| Retraining Course Attended and Completed | 1075 | 9 | | 281 | 447 | 252 | 2064 |
| **Grand Total** | **2807** | **3818** | **6200** | **4966** | **5317** | **2511** | **25619** |

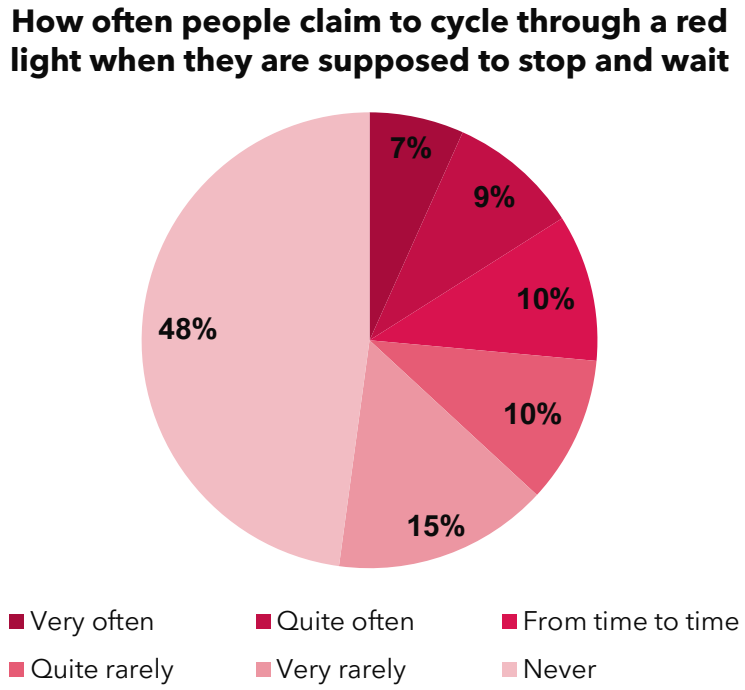
*Fig: Met Police statistics for fixed penalty notices (2017-2022). Base: Total FPNs (n=25619)*

The Nextbase survey found there were certain hotspots for red light running in London, primarily busy junctions, including around Elephant and Castle, and Streatham High Road & Greyhound Lane (where 93.5% of cyclists were seen running the red light). This stat could again illustrate the gap between what people say they do in a research context, and what they actually do in practice.

These findings highlight the variability in red light running behaviour across contexts and underline the importance of collecting up to date localised data to better understand patterns among cyclists.

### In our survey, 53% of London cyclists admit to red light running

Around 16% of cyclists say they do so often, with 7% saying they do so very often and 9% quite often.




*Q13. How often, if ever, do you do each of the following when cycling? Base (unweighted): London cyclists (n=537)*

However, it is worth noting that respondents are likely under-reporting their red light running behaviours. In the focus groups, those identified as 'non-red light runners' who identify as rule followers and said they **never** ran red lights, still admitted that they do in fact run red lights on occasion.

> *"If I run red lights it's usually late at night, where there's no one around. If you can see there's nothing coming in any direction.... I'm gonna go." – Non-red light runner*

> *"However, when I do it, it's when there is no traffic. If I see any traffic or even if I see pedestrians, I will not cross the red light." – Non-red light runner*

### Frequent, younger cyclists with a greater appetite for risk are more likely to be red light runners

Cyclists who are most likely to admit to running red lights include:

- Those cycling for work or business (delivery riders) – a third (32%) say they run red lights often, with 13% saying they run them very often, and 19% running them quite often.
- Frequent cyclists – a quarter (25%) of daily cyclists say they run red lights often, with 14% running them very often, and 11% running them quite often.
- People aged 25-30 – a quarter (25%) say they run red lights often, with 11% running red lights very often, and 14% running them quite often.
- People with a greater appetite for risk - 21% of those with a high risk tolerance run red lights often, with 10% running them very often, and 11% running them quite often.

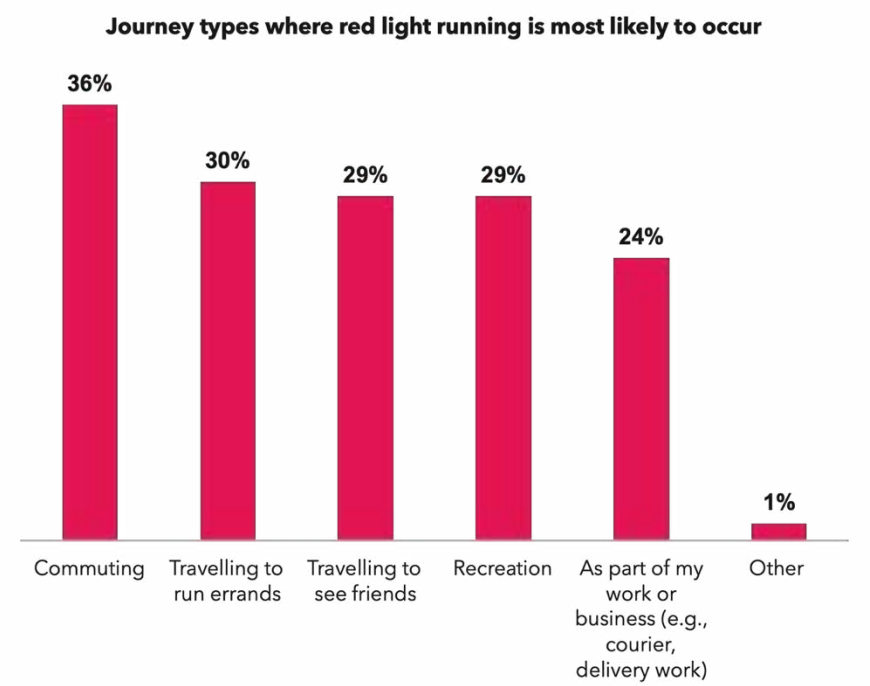
### A small group of frequent cyclists are likely to account for the vast majority of red light running incidents

We conducted additional analysis to estimate how often red light running (RLR) occurs within our sample, creating a model based on self-reported cycling and red light running frequency. We calculated monthly red light running by multiplying how often someone cycles with how often they run red lights. **The results suggest that 66% of all red light running events come from the top 10% of cyclists.** This rises to over 91% when looking at the top 25%. In contrast, the remaining 75% of cyclists account for less than 9% of total red light running events — with the bottom 50% contributing virtually none.


*Q6. In a typical month, how often do you cycle in the city where you live? Q13. How often, if ever, do you do each of the following when cycling? RLR per month calculated by multiplying cycling frequency by RLR frequency. Base (unweighted): all respondents (n=1030)*

## Red light running is most likely to happen on commuting journeys

When asked about the types of journeys they run red lights on, cyclists report they are most likely to run red lights when commuting (36% of red light runners) – which is in line with frequent cyclists being more likely to red light run. Travelling to run errands (30%), travelling to see friends and for recreation (29% for both) followed.

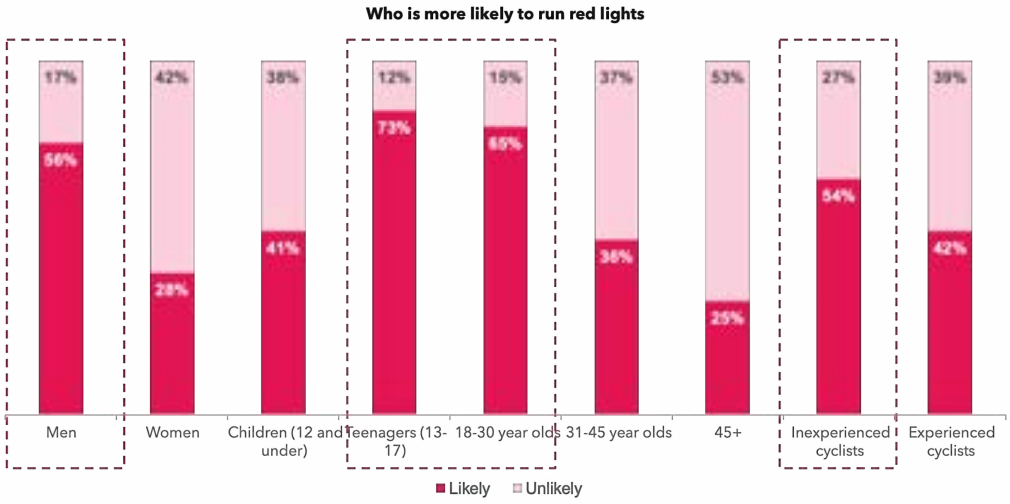



*Q18. Are there any journey types where you are more likely to cycle through a red traffic light when you're supposed to stop and wait? Base(unweighted): Red light runners (343)*

## Perceptions and attitudes towards red light running

### Cyclists wrongly assume that red light runners are less experienced cyclists

Survey respondents suggested that they thought the groups most likely to run red lights are teenagers (73%), 18–30-year-olds (65%), men (56%) and inexperienced cyclists (54%). While inexperienced cyclists may well be running red lights, our additional analysis above indicates that the majority of red light running incidents are instead likely to be carried out by the most frequent (and therefore experienced) cyclists.



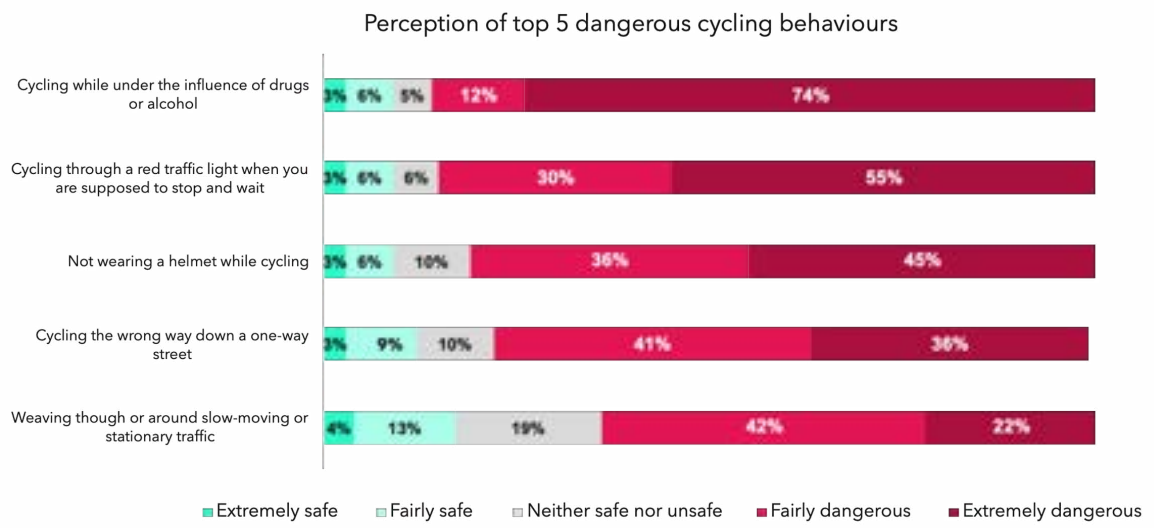

*Q21. For each of the groups below, please say how likely or unlikely you think they are to cycle through a red traffic light when they're supposed to stop and wait? Base (unweighted): all respondents (n=1030)*

### Among cyclists themselves, red light running is thought of as both dangerous and frustrating

In the focus groups, participants across the audience regularly claim they see cyclists "fly through red lights", putting themselves and other pedestrians at risk. Participants find those who run through red lights at speed on busy roads the most frustrating.

> *"It really annoys me as a pedestrian… you're cutting down on the time available for pedestrians to cross. I know they may have calculated it if the light is not yet green for pedestrians, etc. But generally speaking, they're taking a second or two off my window to cross as a pedestrian."*
>
> *– Non red light runner*

In the survey, red light running is identified as the second most dangerous cycling behaviour, with 85% of cyclists thinking it's dangerous, ranked just behind cycling while under the influence of drugs or alcohol (86%).




*Q15. Below are five of those cycling behaviours, for each please say how safe or dangerous you think it is. Base (unweighted): All respondents (n=1030)*

## Despite red light running generally being seen as dangerous, more experienced cyclists feel it can sometimes be done safely

Overall, the audience recognises how unsafe red light running can be. However, those who admit to red light running and those who cycle more frequently feel that it can be done safely, if the rider makes an appropriate risk assessment. Those who don't run red lights and are less experienced on the road are more likely to feel that red light running overall is dangerous and disrespectful of other road users.

Survey respondents who said they had run a red light were asked for their main motivation for running red lights from a list of potential motivations. There being no traffic (36% of Londoners, 39% of non-Londoners), being in a rush (31% and 32%) and there being no pedestrians crossing the road (29% and 28%) were all cited as key motivations.

Other motivations include poor cycling infrastructure such as there being nowhere to safely wait at the lights – no cycle lane, cars waiting in the cycle box, or a HGV behind me (15% and 14%), and there being no cycle-specific lights to get a head start before the traffic (17% and 12%). Surprisingly, 13% of Londoners didn't know red light running was illegal (compared to 8% of non-Londoners).

## Behavioural diagnosis: the factors that influence red light running behaviour

We have combined insights from the survey, focus groups, behavioural audit and our experts' knowledge of behavioural science to understand the range of behavioural barriers (grouped by COM-B) to cyclists stopping and waiting at red traffic lights.

**Physical capability barriers include**:

- **The physical effort on a pedal bike** – stopping and starting again can be physically demanding, especially when riding uphill, meaning cyclists are more inclined to keep going.
- **The easy acceleration on an e-bike** – with assisted acceleration, cyclists on e-bikes may be encouraged to speed up and try and get through the lights before they turn red.

**Psychological capability barriers include:**

- **Lack of awareness about the risks of red light running** - while cyclists do think of the impacts when prompted, they feel that in many situations there is little to no risk in running red lights – either to themselves, pedestrians or vehicles. They also believe that red light running is unlikely to be enforced or penalised by the police.
- **Lack of knowledge about the correct rules of the road** – 13% of London red light runners say they ran red lights because they didn't know it was illegal, and cyclists in the focus groups felt strongly that other cyclists don't know enough about the Highway code.

**Automatic motivation barriers include:**

- **Familiarity with specific routes** – being attuned to the traffic light pattern on regular journeys. In the survey commuting was the most common journey to run red lights on, with 36% of cyclists admitting doing so on these journeys.

> *"I feel like, you know, if you take a route regularly, you know how quick certain traffic lights change. Like there's some that go red and then there's quite a gap between them... And so, if there was that gap, then potentially [I would run the red light]." – Red light runner*

- **Impatience with long red light durations** - in the survey, 15% of Londoners say that the red light wait feeling too long was a motivation for their red light running. This increases to 21% for non-Londoners.

**Reflective motivation barriers include:**

- **Feeling confident** – confidence (or often, over-confidence) in cycling ability means regular cyclists feel they can run red lights without harming themselves or others

and feel able to make a calculated decision about risk. 17% of red light runners say that being confident and able to safely accelerate through a crossing is a reason they run red lights.

  - *In behavioural science, this is known as the 'Overconfidence Bias' where individuals tend to overestimate their own abilities, which can lead to poor decision making, such as underestimating risk (Moore & Healy, 2008).*

- **Feeling vulnerable** – some cyclists run red lights to protect themselves from traffic, particularly if they are concerned about being slower than other vehicles. This includes jumping partway through the light change or running the red light entirely to create distance from vehicles. Less experienced or more risk-averse riders do this to avoid dangerous situations, such as being boxed in by aggressive drivers or forced to wait between large vehicles when cycle lanes or boxes are blocked.

> *"I feel like my threshold for breaking a red light would be quite low, to be honest. If there's like big buses and lorries going on and like you're feeling unsafe, you're going to want to get out of that situation, so long as you're not dangerous to cyclists or road users" – Infrequent cyclist*

- **Rushing to get to the destination** – the belief that running red lights can save time, especially if they are running late. This is most prominent for delivery drivers where there is a direct financial incentive to complete the journey quickly. Interestingly, wanting to save money on rental bikes was actually the least common motivation for red light running, accounting for only 12% of red light running instances in London.

Social opportunity barriers include:

- **Social norms for red light running** – seeing others run red lights creates greater social acceptability around the behaviour, even among those who feel stronger about following the rules of the road. This creates pressure for those less willing to run them to join in the behaviour. There is also an element of 'safety in numbers' making cyclists feel safer when taking a risk around running a red light.

> *"Because there is a crowd, the motorist should see there's a crowd of people cycling. So as annoying as it is, because sometimes I'm on the other end, I'd follow the rest of the people cycling [through the red light] and continue my journey because there's a lot of us. If it was just me I'd probably stop or be a bit more wary." – Infrequent cyclist*

- **Peer influence** - in some situations, focus group participants spoke about experiences riding with friends who run red lights, and the social pressure they feel to run them themselves.
- **An aggressive riding culture in London** – this encourages more and more cyclists to engage in risky behaviours such as running red lights.

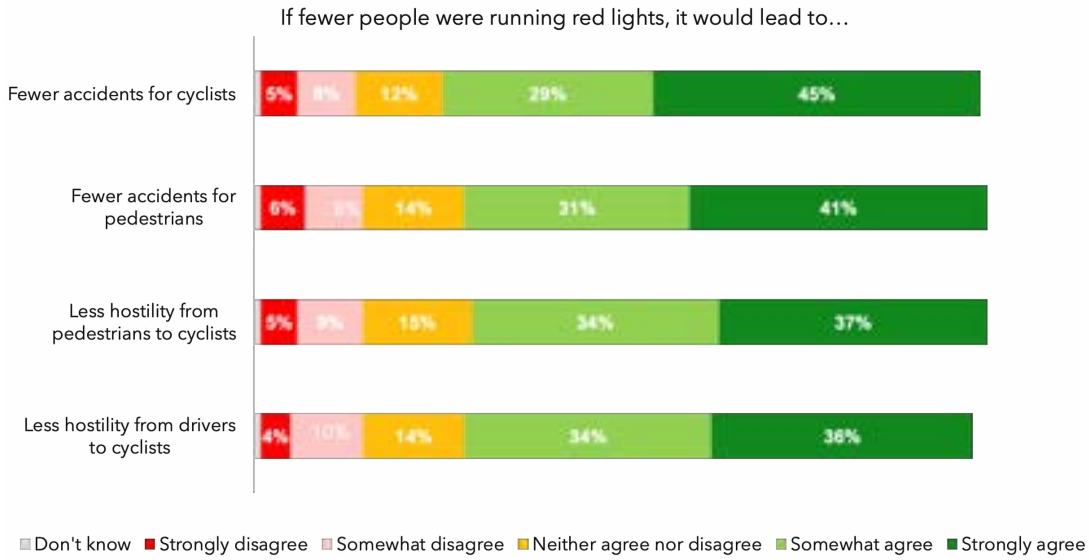
**Environmental opportunity barriers include:**

- **Quiet roads with a lack of traffic or pedestrians** – cyclists are more likely to run red lights at nighttime, or very early in the morning, when there are few people on the road and cyclists perceive no risks of red light running. Some highlight the absence of pedestrians as a key factor.
- And also, roads which have a **lack of cycling infrastructure** where cyclists red light run as they feel unsafe or want to get away from other vehicles including:
    - Poorly designed junctions which don't give cyclists the time or space to get across safely, or don't have appropriate space for cyclists to wait safely at a red light. 15% of London red light runners say that not having anywhere to safely wait at the lights drives their red light running behaviour.
    - A lack of cycle-specific lights – with 17% of London red light runners saying that this drives their behaviour.
    - Non-separated bike lanes (i.e. painted on only) where motorists may be parked or driving in the wrong place, potentially putting cyclists at risk and leaving them little space to stop.
    - Congested bike lanes or bike boxes, which lead to cyclists rushing when lights go green, can feel daunting for those who are less experienced.
    - Routes or junctions which are dominated by buses or lorries, lead to heightened concerns around safety.

# Reducing red light running

### Most cyclists agree that there would be positive impacts of reducing red light running

Most cyclists believe reducing red light running would improve safety for both cyclists and pedestrians and help ease tensions with other road users, with 74% agreeing that there would be fewer accidents for cyclists with less red light running.




*Q22. To what extent do you agree or disagree with the following statements? If fewer people were running red lights while cycling it would lead to… Base (unweighted): all respondents (n=1030)*

### Previous interventions to change red light running behaviour have had varying levels of success

A number of different approaches have been tried in the past to reduce red light running, in the UK and beyond. For example, in Germany, allowing cyclists to legally turn right at red lights was trialled as a way to improve rule compliance and reduce pavement riding (Schnell et al., 2024). In London, The City of London Police have paired enforcement, such as issuing fixed penalty notices or seizing bikes, with educational roadshows, where some offenders can attend safety sessions instead of paying a fine (City of London Police, 2024).

It's clear that no single solution will address the issue – rather, a range of interventions is needed. These interventions broadly fall into three categories: improving education and awareness among cyclists (education and persuasion), reforming infrastructure to make cycling feel safer (environmental restructuring), and increasing enforcement to create stronger deterrents (coercion).

## 1) Education to improve awareness of the risks of red light running

The challenge: the risks of red light running are not top of mind for cyclists, both for experienced cyclists who are over-confident in their cycling ability, and for inexperienced cyclists who may not know or understand the rules of the road. More than 1 in 10 cyclists report not knowing that red light running is actually illegal.

Behavioural strategy: education – increasing knowledge and understanding by informing, explaining, showing and providing feedback.

Intervention opportunities: make the consequences of red light running more salient and memorable, to reduce optimism and overconfidence biases and change perceptions that it's a risk-free crime, for example through:

### Public awareness campaigns

- Targeted at commuters and everyday cyclists, aiming to increase cyclist education about the legal and safety consequences of red light running – for example using storytelling campaigns.
- Delivered through social media to access a city-wide audience, or focusing signage at red light running hotspots (e.g. busy junctions) – for example with signage or road markers providing safety warnings in dangerous locations.
- *Alternative options for public awareness campaigns that are more positively framed could include focusing on the benefits of waiting (health, relaxation, mindfulness) and challenging the idea of red light running as time saving.*

### Digital reminders

- Targeted at users of rental bikes due to shared e-bike operators' unique ability to regularly communicate with users (compared to private cyclists).
- Aiming to remind cyclists of the negative implications of red light running – the fact that it is illegal, dangerous, and has consequences if caught.
- Delivered through in-app pop ups and through direct marketing channels.

### Cycling safety training

- Targeted not just at new or inexperienced cyclists, but also regular cyclists who are potentially more likely to run red lights and need re-educating about how to be safe on the road.

Education ideas were met with generally positive reactions in the survey, including:

- 71% say that a public awareness campaign about the penalties of red light running would be effective (33% said this would be very effective).
- 68% say that a public education campaign about safe cycling would be effective (32% said this would be very effective).

In the focus groups, participants feel generally positive about cyclist education and awareness campaigns that show the risks to cyclists themselves, as well as other pedestrians. They suggest that stories are more memorable than statistics and have more impact on their behaviour. Timely communications, for example, reminders at red lights, are also seen as potentially effective ideas.

However, there are also some concerns that the worst offenders would ignore campaigns and won't care about the repercussions of their risky behaviour.

## 2) Infrastructure improvements and policy innovation to make cycling feel safer

The challenge: a lack of dedicated spaces for cyclists at junctions or on busy roads can lead to cyclists feeling unsafe, driving red light running to get ahead of other vehicles.

Behavioural strategy: environmental restructuring – constraining or promoting behaviour by shaping the physical or social environment.

Intervention opportunities: enable cyclists to feel safer and more in control of their surroundings through changes to road design, for example by:

**Reconfiguring waiting spaces**

- Increasing the size of cycle lanes or waiting bays.
- Making it more comfortable for cyclists to wait at lights – for example through handrails or raised curbs.
- Raising the cycle box or adding a speed bump in front of it to separate cars from cyclists.

**Increasing cyclist visibility at junctions**

- Saliently distinguishing cycle areas (e.g. using lights or colours) to help less confident and inexperienced cyclists feel more in control of their surroundings.

**Expanding the use of cycle-specific signals**

- Adding cyclist countdowns to traffic lights, or reworking the traffic light pattern to be more suitable for cyclists.
- Experimenting with technological advancements, such as 'green wave' tech, which times green traffic lights to match cyclists' speed - rather than cars - on popular bike routes.
- Reworking green light patterns to suit cyclists the most, and improving traffic lights so they respond better to cyclists (e.g. with AI cameras).

To implement these ideas, local authorities will need to work with TfL, with support from shared e-bike operators and cycling groups like London Cycling Campaign and Cycling UK to co-create innovations and trial infrastructure reform. This could be aided by shared e-bike operators sharing route data to identify priority junctions and location.

Infrastructure reform ideas were met with positive reactions in the survey, including:

- 77% of cyclists say that more protected cycle lanes would be effective in deterring red light running (42% very effective).
- 73% of cyclists say that more dedicated cycle traffic lights would be effective (38% very effective).
- 69% say that more car-free cycle routes would be effective (39% very effective).

In the focus groups, participants speak positively about changes to infrastructure, particularly if these were focused on the busier or more dangerous hotspots. They feel that changes such as cycle-specific lights, segregated cycle lanes (i.e. not just painted) and larger bike paths would help reduce red light running behaviours. Overall, there is a strong appetite to redesign roads, so they are more welcoming to cyclists (with participants naming cities like Amsterdam or Copenhagen as examples), to increase safety and reduce dangerous behaviours. They do, however, recognise that this will be a slow change, and that there is only finite space in many parts of London.

## 3) Increasing enforcement to create stronger deterrents for red light running

The challenge: cyclists feel there are few negative consequences of red light running, little risk of being caught, and a lack of enforcement if they were.

Behavioural strategy: coercion – changing the attractiveness of a behaviour by creating the expectation of an undesired outcome or denial of a desired one.

Intervention opportunities: change cyclists' cost-benefit analysis of red light running by increasing red light running penalties and the likelihood of enforcement, for example through:

### Harsher fines for red light running

- Increasing the fixed penalty notice from £50 to £500 (for example) to deter red light running violations with higher stakes, coupled with reminders for cyclists at timely moments that the penalty for red light running is a fine.

### Increasing surveillance

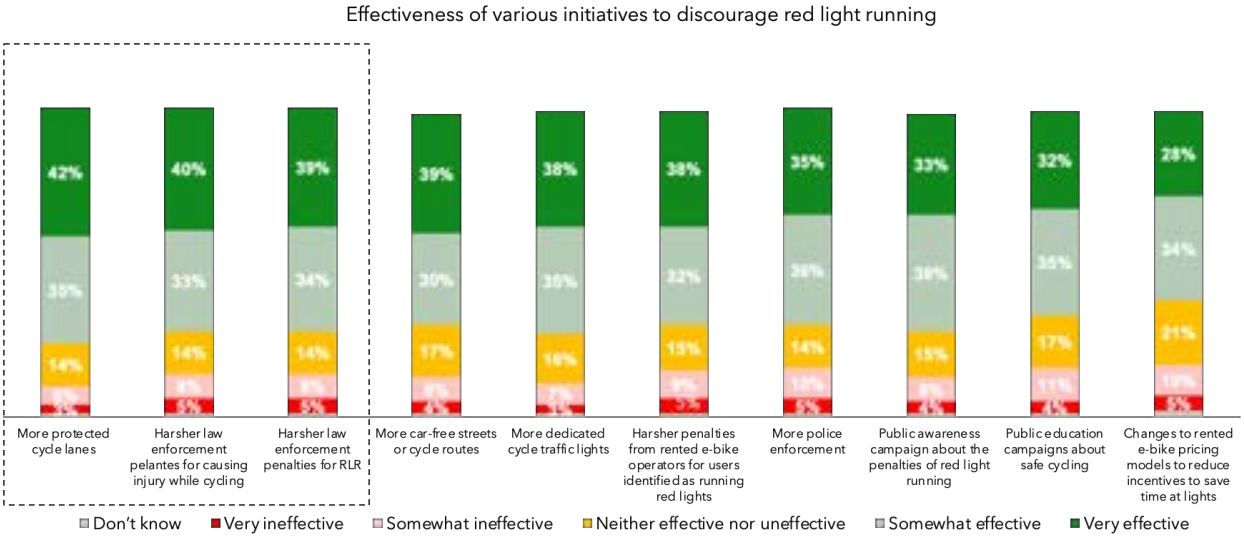
- Increased in-person enforcement, prioritising the busiest junctions and hotspots for red light running.
- Following the example of the City of London's Cycle Response Unit who issued 1000 fixed penalty notices for red light running in the first nine months that they were established (City of London Police).

Increasing enforcement ideas were met with positive reactions in the survey, including:

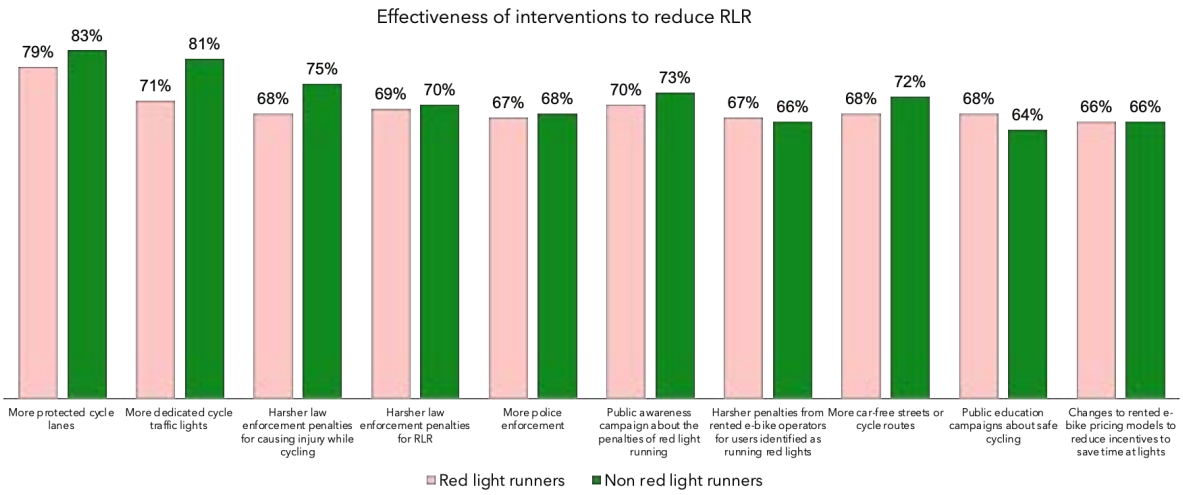
- 72% say that harsher penalties for red light running would be effective at deterring red light running (39% say this would be very effective).
- 72% say that harsher penalties for causing injury when cycling would be effective at deterring red light running (40% said this would be very effective).
- 70% feel that harsher penalties from shared e-bike operators for running red lights would be effective (38% said this would be very effective).

Focus group participants feel harsher penalties would increase accountability for red light runners and dissuade them from running red lights in the future. Those who don't run red lights are particularly in favour of this intervention. However, those who regularly do are more negative, and raise concerns around enforcement. They worry that excessive enforcement would put people off cycling, and that people might be punished for running red lights in cases where they are putting no one in danger.

There are also questions about the feasibility of increasing enforcement, in the context of police in London being overstretched. Some participants are keen to see different taskforces, or civil enforcement officers involved, rather than taking resources away from other crimes (which are often seen as more impactful by participants).




*Q23. How effective or ineffective would each of the following initiatives be to encourage more people to stop and wait at red traffic lights when cycling? Base (unweighted): all respondents (n=1030)*




*Q23. How effective or ineffective would each of the following initiatives be to encourage more people to stop and wait at red traffic lights when cycling? Base (unweighted): all respondents (n=1030), red light runners (n=343), non-red light runners (n=146)*

# Appendix

## Appendix 1.1: Approach, method and sampling

Further detail on the research design can be found below.

### Behavioural audit

To understand what is already known about red light running, who is most likely to do it, and how it is perceived in society, we conducted a behavioural audit with desktop research. A behavioural audit is a review of existing literature and data, with a specific focus on behavioural insights such as attitudes, motivations, and barriers.

Our audit drew on a wide range of sources, including:

- Academic research on red light running behaviour of cyclists in urban areas – including the effect of social context, bike type, audience factors, cyclist group size.
- Government and policy reports – for example from Transport for London
- News and media coverage – including news articles and opinion pieces to indicate how topical red-light running is as an issue.
- Previous cycling or road safety campaigns – to see if this issue has been tackled before, and if so, what works.

Detailed findings from the behavioural audit are provided in *Appendix 1.2.*

### Social listening

Using Pulsar's social listening tool, we conducted an in-depth analysis of how people in the UK discuss red light running (RLR) in everyday online conversations outside of a research setting. For this analysis, we gathered data from X (formerly Twitter), blogs, forums, TikTok, and Facebook over a 12-month period, from April 17th, 2024, to April 17th, 2025.

We employed a comprehensive Boolean search to identify relevant conversations specifically about cyclists and red light running. Keywords included *Red light* or *#redlight* paired with terms such as:

- Cyclist, Cyclists, Bike, Bikes, Cycling
- Lime bike, #limebike, @limebike
- Forest, @forestbike_uk
- Santander bike, Santander bikes

We also applied a geographic filter to ensure all collected mentions originated from the UK. This search setup yielded approximately 17,000 mentions, where each "mention" refers to an individual piece of content (e.g., a tweet, Facebook post, blog entry, TikTok video, etc.).

Using Pulsar's dashboarding and segmentation tools, we analysed this data to understand sentiment toward red light running (positive, neutral, or negative), key topics of discussion and recurring themes, such as public perception, safety concerns, enforcement, and cycling infrastructure. This approach enabled us to explore not just what people are saying about RLR, but also how they feel about it, and how these conversations vary by context, platform, and audience.

### Quantitative survey

We ran a 10-minute online survey with a sample size of 1,030 UK city cyclists between 12th and 19th May. 'Cyclists' were defined as those who claim they use a pedal or e-bike at least once in an average month.

We recruited cyclists from UK cities, ensuring at least 500 respondents from London, to ensure we had a meaningful sample of people who regularly cycle in similar urban environments.

The questionnaire used a range of research techniques to explore why cyclists jump red lights, for example:

- Reflective questions: asking them to think about the last time they ran a red light and think about the reason why (with an option for them to say that they never do it).
- Projective techniques: asking how acceptable it is for other cyclists to run red lights, to remove social desirability bias, as well as asking which groups of individuals are most likely to red light run.

See table below for the breakdown of demographics within the sample:

| Category | Unweighted count | Unweighted % |
|---|---|---|
| **Gender** | | |
| Male | 673 | 65% |
| Female | 354 | 34% |
| **Age** | | |
| 18-24 | 157 | 15% |
| 25-30 | 222 | 22% |
| 31-40 | 250 | 24% |

| | | |
|---|---|---|
| 41-50 | 187 | 18% |
| 51-60 | 160 | 16% |
| 61 or more | 54 | 5% |
| **Location** | | |
| London | 537 | 52% |
| Outside London | 497 | 48% |
| **Cycling frequency** | | |
| Daily | 93 | 9% |
| Weekly | 771 | 75% |
| 1-3 times a month | 140 | 14% |
| Less than monthly | 21 | 2% |

See table below for participant numbers per city.

*Cities in which Lime bike operates are highlighted in green

| City | Raw count | % |
|---|---|---|
| Aberdeen | 6 | 1% |
| Armagh | 1 | 0% |
| Bangor | 3 | 0% |
| Bath | 3 | 0% |
| Belfast | 12 | 1% |
| Birmingham | 62 | 6% |
| Bradford | 7 | 1% |
| Brighton and Hove | 12 | 1% |
| Bristol | 24 | 2% |
| Cambridge | 6 | 1% |
| Canterbury | 3 | 0% |
| Cardiff | 14 | 1% |

| | | |
|---|---|---|
| Carlisle | 2 | 0% |
| Chelmsford | 1 | 0% |
| Chester | 3 | 0% |
| Chichester | 2 | 0% |
| Colchester | 4 | 0% |
| Coventry | 10 | 1% |
| Derby | 12 | 1% |
| Doncaster | 5 | 0% |
| Dunfermline | 3 | 0% |
| Durham | 2 | 0% |
| Edinburgh | 21 | 2% |
| Exeter | 2 | 0% |
| Gloucester | 5 | 0% |
| Hereford | 1 | 0% |
| Hull (Kingston upon Hull) | 9 | 1% |
| Inverness | 1 | 0% |
| Lancaster | 3 | 0% |
| Leeds | 15 | 1% |
| Leicester | 16 | 2% |
| Lichfield | 1 | 0% |
| Lincoln | 7 | 1% |
| Liverpool | 21 | 2% |
| London (Greater London) | 537 | 52% |
| Manchester | 44 | 4% |
| Milton Keynes | 12 | 1% |
| Newcastle upon Tyne | 18 | 2% |
| Newport | 2 | 0% |
| Norwich | 5 | 0% |
| Nottingham | 11 | 1% |
| Oxford | 4 | 0% |
| Perth | 1 | 0% |

| | | |
|---|---|---|
| Peterborough | 6 | 1% |
| Plymouth | 2 | 0% |
| Portsmouth | 10 | 1% |
| Preston | 4 | 0% |
| St Albans | 3 | 0% |
| Salisbury | 1 | 0% |
| Southampton | 10 | 1% |
| Southend-on-Sea | 12 | 1% |
| Stirling | 8 | 0% |
| Stoke-on-Trent | 9 | 1% |
| Sunderland | 6 | 1% |
| Swansea | 3 | 0% |
| Winchester | 2 | 0% |
| Wolverhampton | 5 | 0% |
| Worcester | 1 | 0% |
| Wrexham | 1 | 0% |

### Qualitative focus groups

To better understand the nuance behind motivations for red light running and explore differences between audience groups, we heard from London cyclists in 90-minute online focus groups. We focused on London for this phase of research because London has seen the biggest uptake in cycling in the UK in recent years, particularly due to the increase in rental e-bike use.

Qualitative research allowed us to gain a greater understanding of cyclists' red light running attitudes, how they make decisions when cycling, and what they thought could be effective to encourage greater cycling safety.

We held six focus groups, each with six participants, between the 7th and 13th of May. Groups included:

- Younger cyclists (18-34) with lower cycling frequency (1-2 times per month)
- Older cyclists (35+) with higher cycling frequency
- Younger cyclists (18-34) with higher cycling frequency (3+ times per week)
- Older cyclists (35+) with lower cycling frequency

Non-red light runners – those who claim to never run red lights

Red light runners – those who claim to run red lights

All groups involved a mix of demographics, cycling purposes (leisure, commuting, delivery drivers) and locations across London.

## Appendix 1.2: Behavioural Audit Summary

### Introduction

Red light running is a common issue among both conventional cyclists and e-bike users, contributing to safety concerns for cyclists and others. Surveys and observational studies estimate that around 40% of cyclists engage in this behaviour, with e-bike users generally more likely to run red lights than standard cyclists (Bai & Sze, 2020; Schleinitz et al., 2019). In London, the City of London Police have recently issued £220+ fines to offenders, though enforcement alone is seen as insufficient without broader changes to infrastructure and behaviour (Evening Standard, 2024).

**Audience groups that are more likely to run red lights:**

- E-bike users are generally more likely to run red lights than conventional cyclists, especially those using shared e-bike schemes (Bi et al., 2023; Wang et al., 2018).
- Men are slightly more likely than women to violate red lights (17% vs. 13%), though the gender gap is not dramatic (Bai et al., 2015; Wu et al., 2012).
- Solo riders are more likely to run red lights than those cycling in groups, suggesting social visibility and peer influence play a role (Bai & Sze, 2020; Fraboni et al., 2016). However, these cyclists may still engage in opportunistic violations (waiting then proceeding early).
- Younger riders, those with overconfidence in their skills, and individuals influenced by herd mentality (e.g., mimicking others' rule-breaking) are more likely to engage in red light running, as they exhibit weaker safety attitudes, lower risk perception, and a tendency to underestimate consequences (Wang et al., 2020; Wu et al., 2012).

**Locations where red light running is more likely:**

- Certain boroughs, such as Elephant and Castle, have been identified as hotspots for red light violations by both cyclists and e-bike users (The Telegraph, 2024).
- Busy urban junctions, especially those with high pedestrian flows or complex layouts, see higher rates of red light running. Specifically, recent statistics showed that 28% of cyclists ignored red stop signs at hectic intersections (This is money, 2024).
- Junction design (e.g., T-intersections) has been highlighted as influencing red light running rates (TFL report, 2007).

**Infrastructural factors that influence red light running:**

- Riders are more likely to run red lights at T- or Y-intersections, during short red light phases, or when vehicular traffic is light (Bai & Sze, 2020; Pai and Jou, 2014).
- Interestingly, the presence of signal countdown displays was correlated to the increase in the propensity of red light running (Bai & Sze, 2020; Zhang et al., 2021), as well. Red light running peaks during early/late red-light phases and low traffic, suggesting that riders exploit perceived safety gaps.
- Long waiting times may also increase the likelihood of red light non-compliance (Zhou et al., 2018).
- Red light running was more common when riders were about to turn right instead of turning left or riding straight through the intersection (Schleinitz et al., 2019).
- When alternative routes or pavements were present, cyclists usually switched to avoid red lights (Schleinitz et al., 2019).

### Motivations for red light running:

- **Pragmatic reasons:** Riders often cite making left turns, not being detected by traffic lights, or perceiving no immediate danger as justifications for running red lights (Johnson et al., 2013; Bai & Sze, 2020; Pai and Jou, 2014).
- **Psychological factors:** Attitudes towards risk, perceived social norms (e.g., seeing others run red lights), and a sense of low enforcement or accountability contribute to the behaviour. Observing others break the rules can lower personal accountability and encourage similar behaviour (Fraboni et al., 2016).
- **Impatience and timesaving:** Long waits at signals and a desire to maintain momentum are frequently mentioned motivations. When traffic is light, they assume it is safe to cross (Bai & Sze, 2020; Pai & Jou, 2014).
- **Moral norm and self-identity**: E-bike users' sense of moral obligation and how they see themselves (e.g., as law-abiding or risk-taking) also significantly influence their intention to run red lights (Yang et al., 2018).

### COM-B Model Analysis

Using the COM-B model, we can summarise the research findings according to the behavioural components that influence red light running:

| COM-B component | Sub-component | Barriers (reduce red light running) | Motivators (encourage red light running) | Supporting evidence |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| **Capability** | **Physical** | • Skill to stop/start safely on e-bikes<br>• Ability to judge safe gaps in traffic<br>• Perceived invisibility to sensors | • E-bike acceleration ease enables risky crossings<br>• Physical fatigue from frequent stops | Johnson et al., 2013 |
| | **Psychological** | • Knowledge of traffic laws<br>• Risk awareness (e.g., collision consequences) | • Overconfidence in speed/agility<br>• Distraction (phone use, delivery time pressure) | Wang et al., 2020 |
| **Opportunity** | **Environmental** | • Advanced stop lines (ASLs)<br>• Bike-specific signal detection systems | • Poor signal design (undetected bikes)<br>• Long red-light phases<br>• Complex junctions (T/Y-intersections)<br>• Right turning scenarios | Bai & Sze, 2020; Pai and Jou, 2014 |
| | **Social** | • Group riding norms discouraging RLR<br>• Visible enforcement (e.g., cameras, police) | • Peer behaviour (observing others run red lights)<br>• Delivery app incentives for speed | Fraboni et al., 2016 |
| **Motivation** | **Reflective** | • Fear of penalties (fines, license impact)<br>• Moral obligation (self-identity as safe rider) | • Perceived timesaving (delivery deadlines)<br>• Low enforcement likelihood<br>• "Empty junction" heuristic<br>• Stochastic evaluation (no cars=no danger) | Yang et al., 2018.; Zhang et al., 2020; Bai & Sze, 2020; Pai and Jou, 2014 |
| | **Automatic** | • Habitual compliance (e.g., law-abiding identity)<br>• Safety concerns (near-miss experiences) | • Impatience during long waits<br>• Aggressive riding culture (e.g., overtaking norms) | Zhou et al., 2018 |

## Interventions

Efforts to prevent red light running include:

- **Education and enforcement:** The City of London Police have combined enforcement (fixed penalty notices, bike seizures) with educational roadshows, offering alternatives to fines for those who attend safety sessions (City of London police, 2024).
- **Infrastructure changes:** In Germany, a policy allowing cyclists to legally turn right on red increased rule compliance and reduced pavement riding (Schnell et al., 2024).
- **Technology and data:** In Oxfordshire, smart rear lights that adapt to intersections were trialled to enhance visibility and collect behavioural data (Oxfordshire, 2020).
- **Public campaigns:** In London, TfL's "Share the Road" campaign (2006) combined targeted enforcement with public messaging to promote mutual respect among cyclists, drivers, and pedestrians, though it highlighted the need for balanced, sustained communication (TfL, 2006).

## Cars and red light running

To understand whether there are any parallels between car drivers and cyclists when it comes to traffic light behaviour, we conducted a short literature review of the behavioural factors that underpin car red light running.

**Similarities between red light running motivations in car drivers and cyclists:**

- **Intentional violations:** Deliberate disregard for traffic signals — such as running a red light on purpose — is a leading factor. Studies show that intentional violations, including red light running, are among the top contributors to road accidents (Fu & Liu, 2020; Mahmood et al., 2024).
- **Carelessness or being in a hurry:** Many red light running incidents are linked to drivers being careless, reckless, or simply in a rush, leading to poor judgment at intersections (UKGov, 2011; Porter & Berry, 2001).
- **Traffic volumes and large intersections:** Research has illustrated that higher red light running rates were observed in cities with larger intersections and higher traffic volumes (Chen et al., 2017; Porter & England, 2000).
- **Speed:** Driving at higher speeds increases the likelihood of running red lights, as drivers are less able to stop in time when signals change (Transport research laboratory, 1998).
- **Following other vehicles:** Drivers are more likely to run a red light if the vehicle ahead does so, or if vehicles in adjacent lanes proceed through the intersection during the yellow phase (Chen et al., 2017).

**Differences between red light running motivations in car drivers and cyclists:**

- **Inattentiveness and distraction:** Drivers who are inattentive or distracted (e.g., by mobile phones, passengers, or other in-vehicle activities) are significantly more likely to engage in red light running (Shaaban et al., 2020). Distraction is especially prevalent among younger drivers (Shaaban et al., 2020).
- **Presence of other individuals:** Drivers have reported being more likely to run red lights when alone (Porter & Berry, 2001).

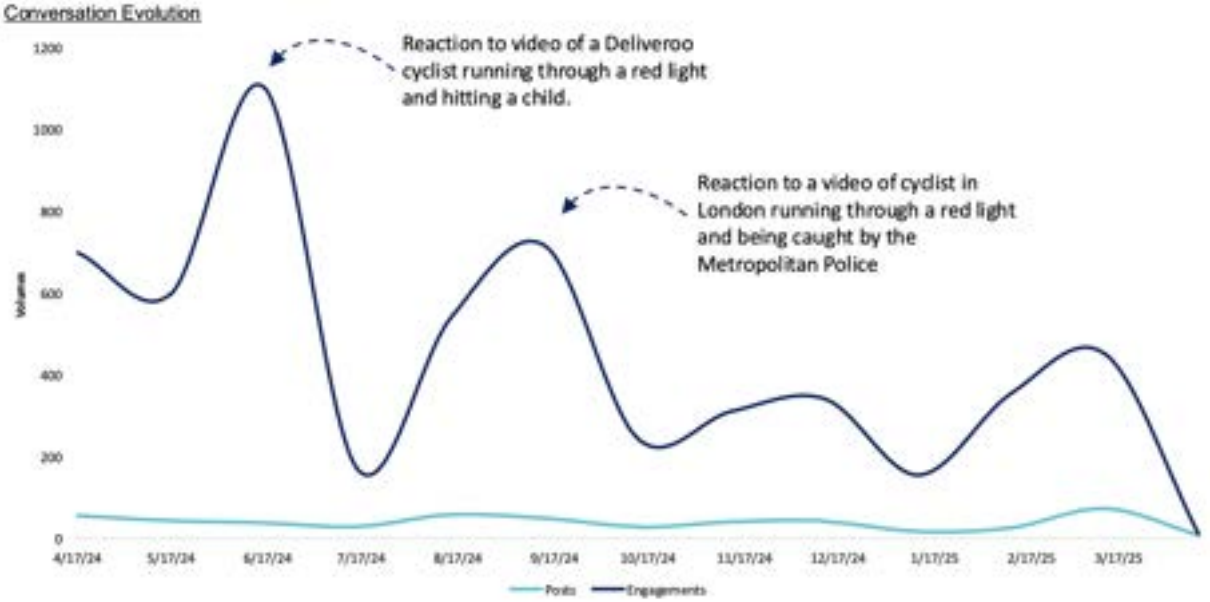
**Demographic factors that predict car drivers' red light running** (Fu & Liu, 2020)

- **Age:** Younger drivers are more prone to violations such as red light running, partly due to inexperience and risk-taking tendencies. The likelihood of such violations decreases with age and experience.
- **Gender:** Some studies suggest that male drivers may be more likely to run red lights, although findings can vary depending on context.
- **Driving record**: A history of traffic violations or crashes is a predictor of future red light running incidents.

## Appendix 1.3: Social listening results

The social listening exercise revealed that conversation levels around red light running have fluctuated significantly over the past 12 months. Some stories of cyclists running through red lights received high levels of engagement, particularly a video of a delivery rider hitting a child, and a video of a cyclist being caught by the police for red light running.

*Evolution of posts and engagement online about red light running over the past 12 months*




**Red light running sparks anger on social media, with Londoners driving a lot of the conversation** The general sentiment surrounding the conversation around red light running is highly negative at -40.2 (on a scale of -50 to 50), with anger being the most commonly expressed emotion (72.6% of instances of engagement). Audiences express frustration towards both cyclists for running through red lights, and the police for not interfering.

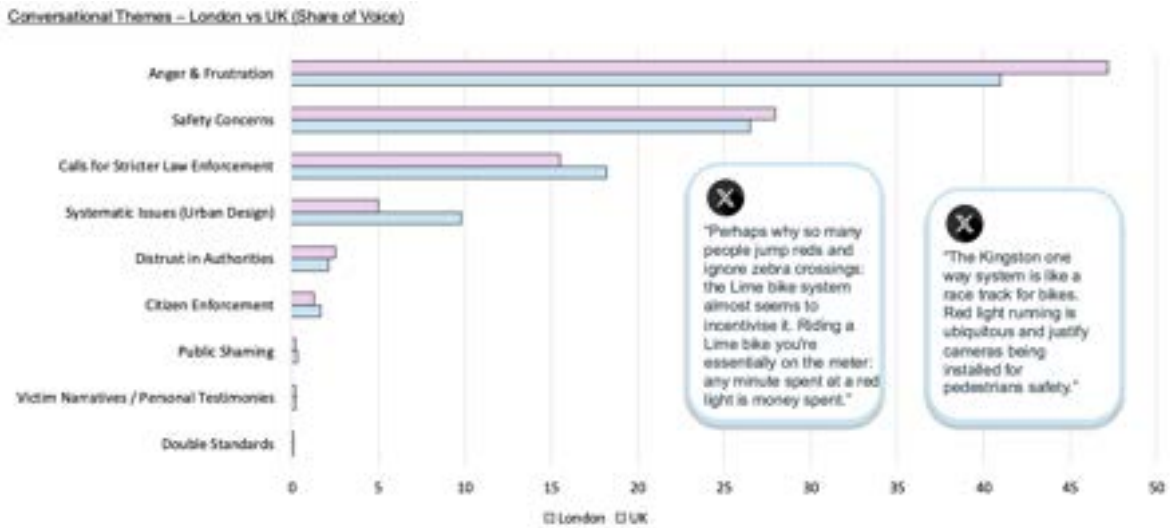
The impact of red light running on safety is also a strong point of conversation, especially in London. Other topics discussed include stricter law enforcement and issues around poor urban design, although this is more commonly discussed outside of London.

27% of online conversation about red light running originates from London. Considering that the percentage of the UK population that lives in the UK is around 14%, this means there is nearly double the number of conversations about red light running happening in the capital. The primary audience discussing red light running online are males over the age of 40 (69%). Users online identify food delivery cyclists and commuters as the main culprits of running red lights. Interestingly, in London, 64% of the red light running conversation focuses on delivery drivers, whereas commuters only account for 16% of the discussion.

Sentiment analysis found that red light running conversations contain highly negative sentiments, particularly anger and frustration, which is even stronger for posts and

conversations in London, compared to the rest of the UK. Conversations surround topics such as safety concerns and calls for stricter law enforcement. They also discuss systematic issues caused by urban design, such as long waits at traffic lights and poor cycle lane infrastructure. These conversations are particularly common outside of London, where infrastructure is likely worse.


Posts on X illustrating anger and frustration towards red light runners

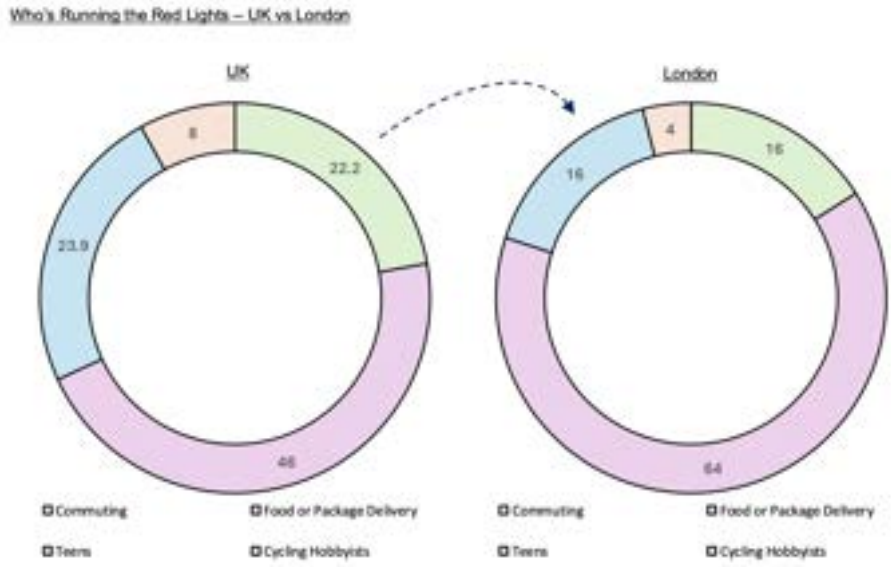



*Most commonly discussed conversational themes around red light running*

The conversation online identifies food delivery riders as the audience commonly running red lights, accounting for 64% of the conversation in London (46% in the UK as a whole). In London, blame is equally assigned to teenagers (16% of the conversation) and commuters

(16%), while the UK as a whole is slightly more likely to blame teenagers (24%) than commuters (22%).

*Groups blamed for running red lights in the UK and London*




The conversation around red light running is primarily driven by men over the age of 40, with men accounting for 69% of posts and engagement compared to 16% of women (with 15% unknown).

## Appendix 1.4: Cycling frequency and journey types

### Most cyclists are cycling at least weekly

Most London cyclists in our survey (85%) say they cycle at least every week, with 9% cycling daily. The majority of journeys (86%) last between 20 minutes to 1 hour, with the most common reported trip length (31%) being 31-45 minutes.

### Journeys by bike are mostly driven by recreation and running errands

The most frequently cited reasons for cycling in London are recreation (70%), followed by travelling to run errands (59%), then travelling to see friends (52%). These top motivations for cycling are broadly similar for London and other UK cities.


*Q10. What are the main reasons you cycle? Base (unweighted): all respondents (n=1030)*

### Personal pedal bikes are the most commonly used type of bike

Personal pedal bikes are the most commonly used type of bike, with 62% using a pedal bike on a weekly or daily basis. This is followed by personal and rental e-bikes, with 47% of London cyclists using each of these daily or weekly.

### Lime is the most commonly used rental e-bike brand

Among those who have rented e-bikes, 62% have used a Lime. This is largely driven by high uptake in London, where 73% of rental bike users have tried Lime, compared to 44% outside the capital. Lime operates shared e-bike schemes in London, Nottingham, Oxford and Milton Keynes.

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