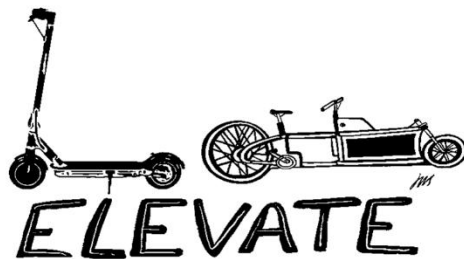


ELEVATE

Illegal e-scooter use in England, 2022: an initial research report on a qualitative investigation



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Executive Summary

This is a research report reporting on analysis of interviews conducted in early 2022.

Most research and evaluation of e-scooter use in the UK focuses on trial e-scooter share schemes, but there is considerable use of private e-scooters and less is known about this. In the UK, privately-owned e-scooters are illegal to use on public roads, pavements, and cycle paths. This is in contrast to shared e-scooters which are available to hire through legal trials in some places¹, and are fully legal to ride on roads and cycle paths. Legal trial e-scooters in the UK must have a maximum 500W motor; no pedals; be designed for one person use; with maximum speed 15.5mph; have only two wheels; weigh maximum 55kg; be steered by handlebars; and be controlled by a hand throttle that defaults to 'off'.

As part of the ELEVATE project², we conducted one of the first detailed UK studies into the privately-owned e-scooter market. Through 18 in depth interviews with users aged 22–73, the research explored why owners bought and used private e-scooters, their awareness of the law, and their views on future regulation.

The interviews found that participants' *privately owned* e-scooters were often used for cost saving. Participants seemed to be avoiding or substituting car use, and primarily used private e-scooters for commutes, replacing car and bus trips. This is different to what existing research shows for *shared or hired* e-scooters. Shared e-scooters tend to be more used for fun/pleasure and convenience, and often replace walking and public transport. Our results suggest that the everyday use of illegal privately-owned e-scooters in the UK (of our sample, at least) is therefore similar to private use in countries where they are legal.

Most participants of our research were aware that riding private scooters on the road is illegal and still continued using them. Some users used social media information about local police activity to avoid enforcement, and some assumed the likelihood of being stopped was low. Some had been discouraged from what they felt was legitimate usage over fear of legal consequences, and several reported actively avoiding police 'crackdowns' on illegal use.

Users overwhelmingly felt the ban was illogical and were confused about why they remained illegal. They perceived their own usage as responsible, sensible and safe, in contrast to media portrayals of many e-scooters.

Interviewees' views on regulations should private e-scooters be legalised include vehicle safety standards and rules similar to those for bicycles and e-bikes. This largely matches recommendations from the Parliamentary Advisory Council for Transport Safety³.

The views and experiences of some of our interviewees suggest that some private e-scooter users are keen to use them responsibly, for commuting, shopping and everyday travel and obeying regulations for safety.

¹ <https://www.legislation.gov.uk/ukxi/2020/663/contents/made>

² <https://environment.leeds.ac.uk/transport-social-political-sciences/dir-record/research-projects/1690/elevate>; <https://blogs.brighton.ac.uk/elevate/>

³ <https://www.pacts.org.uk/wp-content/uploads/PACTS-e-scooter-briefing-Update-7-July-2022.pdf>

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1. Introduction

This is a research report on early work of the Elevate project⁴ (Jan-May 2022). The project explores the potential of different forms of electric micro-mobility [1] as sustainable modes of transport for the UK. This involved surveying UK public opinion on e-scooters, e-bikes and e-cargo bikes [2], and then developing trial loans of e-cargo bikes to suburban households in Brighton, Oxford in Leeds [3], to research how they might be integrated into everyday travel [4-6], particularly to substitute for car use.

Given that e-scooters are a relatively common form of e-micromobility in the UK, despite the fact that the use of privately-owned e-scooters on public roads is illegal, it is important to understand the reasons people purchased and used an e-scooter. Research on e-scooters in the UK is limited [7-9], and rarely focuses on user experiences and views [10]. Their use in other countries [11, 12] suggests that they could be a useful addition to the suite of e-micromobility options (e.g. electric mobility-scooters, e-bikes and e-cargo bikes) currently used on UK streets [1].

⁴ See all research outputs at <https://blogs.brighton.ac.uk/elevate/research-outputs/> and published papers at <https://blogs.brighton.ac.uk/elevate/research-outputs/journal-articles/>

2. Methods

This report is a content analysis of interviews with 18 users in England, aged 22 to 73 (Table 1).

Table 1: Basic details of participants

Interviewee number/ID	Pseudonym	Gender	Age	Place of residence	Year of purchase
1	Damian	male	56	Brighton area	2021-22
2	Claire	female	26 - 30	Leeds	2020
3	Ben	male	52	Leeds	Not given
4	Steve	male	34	Surrey	2020
5	John	male	53	Lancashire	2021
6	Mike	male	51	Brighton	2018
7	Olivia	female	43	Nottingham area	2018-19
8	William	male	73+	Cambridge area	2020
9	Emily	female	37	Greater London	2020
10	Sophie	female	31	London	2021
11	James	male	58	Northwest London	2018
12	Isabella	female	51	Brighton area (semi-rural)	2020
13	Jessica	female	55	Southwest greater London area	2020
14	Hillary	female	36	Croydon	2019
15	Oliver	male	35-40	Nottingham	2021
16	Jack	male	22	Basingstoke	2020-22
17	Oscar	male	44	Leeds	Not given
18	Connor	male	37	Reading area	2018-19

Interviewees were recruited in two ways. First, flyers were distributed in four cities (Oxford, Leeds, Brighton, and London) in supermarkets and other places. Secondly, recruitment text was posted on discussion boards on social media platforms (such as Facebook) where e-scooter topics were discussed. The recruitment text used was “The University of Leeds is conducting a scientific study to better understand the ownership and use of electric scooters. This includes reasons for your purchase, your use, your experiences, and the impact on how you travel.” A small incentive (a £10 shopping voucher) was offered for participation. Interviews took place over phone or online, based on the preference of the participant, on an agreed time after informed consent was obtained. Interviews were communicated to take around 30-40 minutes, most were between 20-30 minutes long. Ethical approval was obtained from the University of Leeds Ethics Committee, Business, environment and social Science (ref number: AREA 20 –173). Interviews collected basic data (age, gender, place of residence, ownership and use of other modes of transport) and then proceeded using the topic guide provided as Appendix A. The four headline questions being explored were:

- How did you start thinking about buying/using an e-scooter?
- How are you using your e-scooter? Has it changed anything compared to before?
- Could you tell me something about your experiences with using the e-scooter.
- What is your understanding of the legal position of the e-scooter in the UK?

Interviews were conducted in January to May 2022.

The following sections of the report are therefore organised to reflect these headline research questions, with the inclusion of a section on motivations (for purchase and use).

In the use of ‘quotations’ below, *interview note text* written during grounded analysis are in italics (i.e. these are quotes from the first author’s direct notes on interview transcripts), and direct quotes from participants are in “speech marks”. Gaps where data was removed from direct quotations are marked by square parenthesis ellipses thus [...].

3. Findings

3.1 Purchase

The interviews discovered or estimated the years of purchase of most of the participants' e-scooters, given in table 1. In three cases the rough time was worked out, two did not provide an answer and one participant (16) had three e-scooters; a gift in 2020, another bought in 2020/21, and a third more powerful one bought in 2022.

Five participants (*Damian_ M_56, Claire_ F_26-30, Emily_ F_37, Jessica_ F_55, Connor_ M_37*) stated that they had bought their e-scooters on site in a shop, while six (*Steve_ M_34, William_ M_73+, James_ M_58, Hillary_ F_36, Oliver_ M_35-40, Oscar_ M_44*) bought them online. One (*Mike_ M_51*) bought from a friend and two (*Olivia_ F_43, Jack_ M_22*) received their first e-scooter as a gift.

3.1.1 Previous experience

The decision to buy an e-scooter was not necessarily based on any previous experience. Only 2 had tried one before buying: rental e-scooters in Stockholm, Budapest and Paris (*Sophie_ F_31*) and a Lime e-scooter in Paris (*Oliver_ M_35-40*). One participant's partner had bought one first (*Claire_ F_26-30*) and they bought one 'to avoid buses' in lockdown (*Claire_ F_26-30*). Others stated that they wanted to 'just give it a go' (*Emily_ F_37*), while one had friends commuting on them in in Leeds (*Oscar_ M_44*) another had used a kick-scooter in the City of London and had seen others use e-scooters (*Connor_ M_37*), and a third mentioned the relevance of having used motorbikes in their youth (*Jack_ M_22*).

3.1.2 Research

It became clear that most owners had done some form of 'research' (*Olivia_ F_43, Emily_ F_37, Isabella_ F_51, Hillary_ F_36*), usually online (*Hillary_ F_36, Oliver_ M_35-40*), before buying. Two stressed that they had researched the legality of using e-scooters (*Olivia_ F_43, Oliver_ M_35-40*): see Legality.

3.2 Motivations

Some of the main reasons for wanting and using an e-scooter are explored below, in order of their importance, measured by the number of times the motivation was mentioned in data.

3.2.1 Saving money

This was clearly the most common motivation, with the cost of e-scooters being favourably compared to bus passes (*Ben_ M_52*) and journeys (*Ben_ M_52, Olivia_ F_43, Jack_ M_22*), EVs (*John_ M_53, Olivia_ F_43, Isabella_ F_51*), cars (*Mike_ M_51, Isabella_ F_51*), taxis (*Claire_ F_26-30*), trains (*John_ M_53*), an electric wheelchair (*Steve_ M_34*), vans (*Jessica_ F_55*), or simply 'petrol' (*Isabella_ F_51, Oscar_ M_44, Connor_ M_37*), along with rental e-scooters (*Olivia_ F_43, Sophie_ F_31, Oliver_ M_35-40, Jack_ M_22*), and (e-)bikes (*James_ M_58*).

One pointed out the higher cost of 'making a scooter legal' (*John_ M_53*), others their general affordability (*Damian_ M_56*) and saving money (*Isabella_ F_51*), cheapness and economy (*William_ M_73+*) or fuel efficiency (*Emily_ F_37*), cheapness to purchase (*Jack_ M_22*), as well as the fact that travel savings would repay the purchase outlay quickly, e.g. saving £60/month on

a bus pass and paying for itself in a year (*Ben_ M_52*). One mentioned being able to save money spent on rental e-scooters (*Hillary_ F_36*), and another savings on parking costs (*Oliver_ M_35-40*).

3.2.2 Car avoidance and substitution

Wanting to avoid using a van (*Jessica_ F_55*) or cars themselves was mentioned by eight participants as a key reason for getting and/or using an e-scooter (*Damian_ M_56*, *Mike_ M_51*, *Olivia_ F_43*, *Isabella_ F_51*, *Jessica_ F_55*, *Oliver_ M_35-40*, *Oscar_ M_44*, *Connor_ M_37*), while others saw this as the motivation for others: “it takes away from people getting in a car” (*Emily_ F_37*); “I have been speaking to someone who said they used an e-scooter all the time, but now they're back in their car because they don't want to get in trouble with the law, you know, and now they're doing a car journey that takes them 10 minutes every day. They said, ‘No, I wouldn't do that if I could use my e-scooter’” (*Sophie_ F_31*); “about 80% of people are trying to use a scooter [...] to do some change and leave the car at home when they don't necessarily have to use it” (*Oliver_ M_35-40*);

One commented in general that it was a good replacement for cars for short journeys (rather than it being their own motivation): “too many people jump in a car for that one-mile journey” (*Jessica_ F_55*). Two participants stated that they are non-drivers, either because of not having a licence (*James_ M_58*) or because they live in London (*Jack_ M_22*). One mentioned that an e-scooter replaces the motorised autonomy only available in a car: “it's fun being able just to have a bit of the power to be able to press the throttle and to be able to be propelled forward. As like the only way to do that normally, growing up is to be driven yourself or eventually being bought a car”. (*Jack_ M_22*)

3.2.3 Convenience and time saving

Convenience was mentioned specifically by several as a key advantage of the e-scooter (*Mike_ M_51*, *Sophie_ F_31*, *James_ M_58*, *Oliver_ M_35-40*, *Connor_ M_37*), while others mentioned convenience as time saving and freeing (*Hillary_ F_36*, *Jack_ M_22*), being quicker than a car (*William_ M_73+*, *Jessica_ F_55*), taxi (*Oliver_ M_35-40*) or a bus (*Oliver_ M_35-40*, *Oscar_ M_44*), especially by taking short-cuts (*Jessica_ F_55*, *Oliver_ M_35-40*) and especially convenient for short journeys (*Connor_ M_37*) of e.g. less than 10 miles (*Oliver_ M_35-40*). General ease of use was also raised: “there's less involved in hopping on your e-scooter” (*Olivia_ F_43*); “I keep it in the hall, I can be out the door in 15 seconds [...] You're there and back again, far quicker than a car.”” (*William_ M_73+*); “There's less to it on an electric scooter. Let's just give it a go.” (*Emily_ F_37*)

3.2.4 Fun

For some, the e-scooter was bought and/or used explicitly for ‘fun’ (*Damian_ M_56*, *Claire_ F_26-30*, *Olivia_ F_43*, *Isabella_ F_51*, *Jessica_ F_55*, *Oliver_ M_35-40*, *Jack_ M_22*), adrenaline (*Olivia_ F_43*), refreshment (*Emily_ F_37*), exhilaration (*Jessica_ F_55*), joy (*Jack_ M_22*), or relaxation (*Connor_ M_37*). Several mentioned themselves (*Emily_ F_37*, *Isabella_ F_51*, *Connor_ M_37*) or their child (*Olivia_ F_43*) loving riding it.

Others mentioned their partner using e-scooters for general leisure purposes (*Damian_ M_56*), while others specifically used it off-road on tracks or in woods (*Ben_ M_52*, *Steve_ M_34*, *Isabella_ F_51*, *Jack_ M_22*), one comparing it to moto-cross (*Jack_ M_22*).

3.2.4 Environmental

The e-scooters' contribution to solving environmental issues was mentioned by 11 or 61% of participants (*Claire_ F_26-30, Ben_ M_52, John_ M_53, Mike_ M_51, Olivia_ F_43, William_ M_73+, Emily_ F_37, Jessica_ F_55, Oliver_ M_35-40, Jack_ M_22, Oscar_ M_44*), with emissions being specifically mentioned by three (*Damian_ M_56, Jack_ M_22, Oscar_ M_44*) while pollution (*James_ M_58*) and polluting the atmosphere (*Mike_ M_51*) were also mentioned. Two (*John_ M_53, William_ M_73+*) explicitly compared the 'green' credentials of an e-scooter favourably with EVs, whilst a third (*Ben_ M_52*) implied it: "the government claim that they are pushing towards a greener, cleaner form of transport for the whole country. And when we find one, they make it illegal" (*Ben_ M_52*); "We talk about going green and carbon neutral, and all that sort of stuff, but [...] how can I afford 50 grand for an electric car?" (*John_ M_53*); *Not an EV with embedded carbon/minerals* (*William_ M_73+*).

Another spelt out the multiple benefits from replacing specifically their van use: "You're not driving around a two-tonne van. Instead of, you're getting an e-scooter that costs literally zero to charge up and run. I suppose the van does about 30 miles to the gallon, just weighs so much and it's just bad for the environment and all that kind of stuff" (*Jessica_ F_55*).

Several pointed out that these were worthy collective (*John_ M_53, Oliver_ M_35-40, Oscar_ M_44*) or national (*Ben_ M_52, Oliver_ M_35-40*) aims.

3.2.6 Health and accessibility

One participant had used the e-scooter to replace the need for an electric wheelchair given that they could not sit on a bike (*Steve_ M_34*), and another had "had a serious illness. I had to learn to walk again and I can't walk for long distances" (*John_ M_53*). Others spoke of other disabled people being able to use them (*Mike_ M_51, Olivia_ F_43*) either for exercise (*Olivia_ F_43*) or as an accessible, effortless mode of transport (*Oscar_ M_44*), while others mentioned their suitability for older people (*William_ M_73+, Isabella_ F_51*).

3.2.7 Freedom and independence

Freedom as a valued aspect of e-scooter use was mentioned explicitly by several (*Claire_ F_26-30, Mike_ M_51, Olivia_ F_43, Jack_ M_22*), with independence being closely related (*Claire_ F_26-30, Mike_ M_51, Emily_ F_37, Jack_ M_22*), whether in comparison to the 'dependence' of waiting for public transport (*Emily_ F_37*), of car-dependence or being driven (*Mike_ M_51, Olivia_ F_43, Jack_ M_22*), or of feeling trapped: "freedom to an extent, rather than in a car you're boxed in, you're very caged. It feels very claustrophobic and trapped and being open and free definitely makes me happy" (*Jack_ M_22*); "It's nice to be able to feel free to be able to not be trapped to my own two feet and pedal power." (*Jack_ M_22*).

This freedom was explicitly compared to that of a motorbike: "the power to be able to press the throttle and to be able to be propelled forward. As like the only way to do that normally, growing up is [...] buying a motorbike" (*Jack_ M_22*); "I used to ride a motorbike and you get a sense of freedom when you're running around on your own vehicle" (*Mike_ M_51*).

3.2.8 Congestion

Avoiding congestion was mentioned as a direct motivation by two (*Mike_ M_51, Oliver_ M_35-40*), whilst three raised it as a societal issue that e-scooters could solve (*Sophie_ F_31, Oliver_ M_35-40, Oscar_ M_44*).

Table 2 compares the ranking of these motivations for using e-scooters with findings in other studies, which used surveys to identify users' reasons for riding private or shared scooters, or all e-scooters, undistinguished.

NB: It is important to note that the comparison offered in this table, and tables 3 and 4, are a case of comparing 'apples and pears'. The ranking of the importance of motivations, trip purposes, and mode substitution from the current study arise from the number of coded segments which recorded mentions of those factors, combined with the percentage of the participants which mentioned them. Ranking by both measures is consistent across all three tables – i.e. the more an issue is mentioned, the more participants have mentioned it. This provides some reliability to the rankings. By comparison, rankings in other studies arise from quantitative survey methods and arise from explicit questions about motivations, trip purposes, and mode substitution by e-scooter users, using different methodologies and analytical strategies. There is not room in a research report to explore these differences or to justify or qualify the results from the different methods pursued. The comparisons in these tables are therefore not rigorous and should be taken as an impressionistic comparison of the ranking of factors in our participants' interviews with more rigorous quantitative survey findings. Our sample was not statistically representative, and therefore the comparisons we make are not statistically generalisable.

Research Report: Interviews with illegal e-scooter riders 2022

Table 2: Comparisons between motivations of our interviewees and survey respondents in selected studies

Study	Motivations: number of mentions and % of participants (Elevate) or survey responses % (survey studies)						Study details
Private mode							
This study	Saving money 30/78%	Car avoidance 26/55%	Convenience and time-saving 19/28%, leisure and fun 19/50%	Environmental 16/61%	Health &accessibility 13/38%	Freedom and independence 7/28%	In-depth interviews with 18 participants (previously) owning an e-scooter in the UK
Oostendorp et al. 2023 [13]	More mentions than shared users of ‘lower costs’, ‘no need to find a parking space’, ‘sustainability / environmental friendliness’, ‘more physical activity / fresh air’, and ‘avoiding traffic jams’ (p. 2177)						Online survey Germany, 3,834 responses, 1,226 e-scooter users: 1,031 shared, 372 private, 177 both
Leung and Burke 2022	Cost-effective 299*	Recreation 218*	Replace car 210*	Replace PT 186*	Less effort 170*	Avoid parking 150*	Questionnaire in Brisbane/Queensland Australia. 276 response attempts, 108 fully completed responses. Descriptive analyses
Shared mode							
Delbosc and Thigpen 2024 [14]	Fast compared to walking 70%	Fun 66%	Convenient 60%	Car-free and flexible 40%	Affordable 31%	Environment 29%	Survey, 1037 shared users in United States, Australia and New Zealand
Speak et al. 2023 [15]	Convenience 30.2%	Fun, relax 29.3%	Environment 17.1%	Affordable 11.7%	Covid PT avoidance 4.5%	Exercise 1.4%	Mixed methods, data from surveys, 222 shared users, UK
Sherriff et al. 2022 [7]	Fun 57%	Time-saving 51%	Environment 39%				Survey, UK, shared (147) and private (48) users

[illegible]

3.3 Use

Participants spelled out the trip purposes for which they used their e-scooters. These are listed below, before direct comparisons with other transport modes are outlined, and then comparisons specifically with other electric mobility modes – e-bikes and EVs.

3.3.1 Trip purposes

Commute

Commutes were mentioned by the majority (55%) of users as their key trip purpose (*Claire_ F_26-30, Ben_ M_52, Mike_ M_51, Emily_ F_37, James_ M_58, Isabella_ F_51, Jessica_ F_55, Hillary_ F_36, Oliver_ M_35-40, Oscar_ M_44*) especially in lockdown (*Claire_ F_26-30, Emily_ F_37*). Others described it as the perfect commute mode for people in general (*Olivia_ F_43, Sophie_ F_31, James_ M_58*), and it was seen as the epitome of a legitimate use for the mode: “that’s what we need to be thinking about; the future and how young people are going to be able to get to their jobs? [...] I’ve said to my kids [...] in the future, if they’ve got a part time job that they need to get to then it does seem like the best solution” (*Olivia_ F_43*); “I’m going to show them this piece of paper telling them that I’m allowed to go to my office and that I’ve also been told by my company [...] you are riding it sensibly and weren’t causing any trouble. You go into work for goodness’ sake.” (*Emily_ F_37*); “people that would use it and use it to get to work are probably people that don’t want to get in trouble with the law.” (*Sophie_ F_31*); “It’s really the ideal form of urban commute for people [...] the answer, really, to commuter transport” (*James_ M_58*).

Shopping

Shopping was also a very common trip purpose (*Damian_ M_56, Claire_ F_26-30, Steve_ M_34, John_ M_53, William_ M_73+, Jessica_ F_55, Oliver_ M_35-40, Jack_ M_22*) used to replace expensive taxis (*Claire_ F_26-30*), for spontaneous trips (*William_ M_73+*), for short distances of e.g. a mile (*Jessica_ F_55*). One user felt it was an inappropriate use, however: “I haven’t even been to the shops on it because it seems inappropriate to leave it lying around outside the shop. Whereas you can just bring it into the workplace without any fuss [...] It would be nice to be able to just use it for going to the shops.” (*Oscar_ M_44*)

Leisure

Leisure was also a common use (*Damian_ M_56, Claire_ F_26-30, Olivia_ F_43, Sophie_ F_31, James_ M_58, Isabella_ F_51, Jessica_ F_55, Jack_ M_22*) with some mentioning mental cocooning “you’re in your own head, you’re in your own space [...] you’re literally your own person” (*Emily_ F_37*), one linking this to meals out (*Sophie_ F_31*) and three mentioning the importance of accessing green spaces: *Dirt tracks near house* (*Isabella_ F_51*); “You can zip through parks with little canal ways and riverways routes. I have ridden along Thames, things like that.” (*Jessica_ F_55*); “going for a ride in the countryside or even just going to woodlands or anything.” (*Jack_ M_22*)

Visiting friends and family

This was mentioned by five users (*Ben_ M_52, Steve_ M_34, Olivia_ F_43, Sophie_ F_31, Jack_ M_22*), including meeting for food (*Sophie_ F_31*), and combining the use of an e-scooter with taxis (*Olivia_ F_43*) or trains (*Jack_ M_22*)

Exercise

The mentions of exercise were exclusively about using *bikes* for exercise (*Olivia_ F_43, Sophie_ F_31, Jessica_ F_55*) with the exception of one mention of other people with health issues using a unicycle or e-scooter for exercise: “there was one guy who uses the unicycle you know, the, just the wheel and he'd had an operation that affected his stomach muscles. And it's like the best, he said it was the best exercise for his core.” (*Olivia_ F_43*)

Caring

Two users mentioned caring responsibilities, for a “mother [and] vulnerable loved ones.” (*Claire_ F_26-30*) or “a family member of mine”. (*Jack_ M_22*)

Volunteering

One participant mentioned considering using their e-scooter to get to where they volunteer: “I thought about riding the e-scooter to where I volunteer, which is about two miles away, and ride it back. Or [...] Get on the bus and go to where I volunteer. Come back on the bus and ride it home.” (*John_ M_53*)

Table 3 compares the frequency or popularity of these mentioned trip purposes with those found in other survey studies.

Table 3: Trip purposes by interviewee mentions and survey results in other studies

Study	Trip purposes by number of mentions and % of participants (Elevate) or survey responses % (survey studies)					Study details
Private mode*						
Our Study	Commute 24/55%	Shopping 17/44%	Utility 10/39%	Social 6/28% and Leisure 6/28%	Caring and volunteer 4/17%	See table 2
Mansourifar et al. 2025 [19]	Leisure 35.1%	Commute 32.5%	Non-work 25.4%	Work 6.1%	Other 0.9%	Online survey, Australia, n=732, private n= 51
Roig-Costa et al. 2024 [20]	Commuting 62.3%	Caring 24.8%	Leisure 24.5%	Accessing PT 5.5%		Spanish micro-mobility survey study (n=651), n not given
Petzoldt et al 2023 [21]	Commuting 47.5%	Leisure/fun 16.2%	Shopping 16.2%	To leisure site 13.1%	Work, other 7%	See table 2
Oostendorp et al. 2023 [13]	Commute 30.9%	Shopping 14.9%	Leisure 19.8%	Errands 16.8%	Fun 11.8%	See table 2
Shared mode**						
Mansourifar et al. 2025	Leisure 55.9%	Non-work 23.9%	Commute 15.4%	Work 4.3%	Other 0.5%	See above, shared use n=682
Aguilera-García et al. 2024 [22]	Leisure/fun 51.5%	Commuting 18.8%	Trying out 15.5%	Shopping, personal, errand 10.9%	Work 0.4%	Spanish survey study, last trip on shared e-scooter(n = 239)
Delbosc and Thigpen 2024	Social outing 23%	Commute 21%	Joyride 15%	Other 12%	Explored and shopping errands 11%	See table 2
Flores 2024 [23]	Leisure 26.5%	Errands 23.1%	Commute 17.2%	Fun 13.2%	Shopping 7.9%	Swedish survey study, shared users n=243

Oostendorp et al. 2023	Leisure 26.5%	Errands 23.1%	Commute 17.2%	Fun 13.2%	Shopping 7.9%	See table 2
Speak et al. 2023	Leisure, social 58.3%	Commute 15.5%	Shop, errand 8.3%	Explore 8.3%	Study 6%	See table 2
Sherriff et al. 2022	Try out 28%	Fun, recreation 25%	Commute, study 17%	Social site 12%	Shopping 12%	See table 2
Christoforou et al. 2021 [16]	Strolling (fun) 39.5%	Leisure 36%	Social 32%	Commute and shopping 18.5	Work 10.5%	See table 2
Latinopoulos et al. 2021	Recreation 44%	Commute 19%	Social 18%	Work 11%	Other 8%	French online survey n=112
Both modes						
Carroll 2022	Commuting, shopping and errands, and social 27%	Study commute 15%	Recreation 4%			See table 2
* 97% private in Petzoldt et al. (2023) ** 82% shared in Flores et al. (2024)						

3.3.2 Other electric mobility

Of particular interest in the context of Elevate is the comparison to other forms of e-mobility – because these might be seen as ‘competitors’ to e-scooters in the ‘ecology’ of transport modes or the ‘regime’ of electric mobility [8].

E-bikes

Many of the e-scooter users had considered but rejected the use of e-bikes, for numerous reasons, because: they are not a ‘proper’ bike (“because I believe if you want to ride a bicycle you're supposed to pedal” (*Damian_ M_56*)); of a negative image or stigma attached to illegal e-motorbike users “delivery drivers fly and pass through red lights. You know, to be honest, those delivery drivers on the electric bikes are a lot more dangerous than us” (*Ben_ M_52*); they are too big and heavy (*Mike_ M_51, Olivia_ F_43*); they are not as portable (*Oscar_ M_44*) or storable (*James_ M_58*); they are too expensive (*Oliver_ M_35-40*); they require too much effort (*Oscar_ M_44*); or they were unfamiliar (*Connor_ M_37*).

By comparison, e-scooters were seen as much better at allowing *multi-modal use* with car, taxi or public transport (*Olivia_ F_43, James_ M_58, Oscar_ M_44*): “I also wanted to use it in conjunction with public transport. There's no way you can fit a bike in the front seat of a bus. Whereas the scooter just folds away in between the legs [...] I find public transport a difficulty because [...] It doesn't take you exactly where you want to go. So it was just the perfect link to make using public transport viable.” (*Oscar_ M_44*)

One participant (*James_ M_58*) thought that bikes made more sense as a rental vehicle.

EVs

The most common about EVs was that they are a green alternative that is too expensive (*John_ M_53, Mike_ M_51, Olivia_ F_43, Isabella_ F_51*) and that people are ‘ignoring’; a distraction (*Oscar_ M_44*). One compared the acceleration on an e-scooter to that of an EV (*Ben_ M_52*), while another stated an intention to buy one (*Olivia_ F_43*). Finally, one mentioned avoiding them because of their embedded carbon and rare earth minerals (*William_ M_73+*).

3.4 Experiences: other road users and pedestrians

In addition to positive experiences of riding an e-scooter that were summarised under Freedom and Fun motivations, there were many accounts of interactions with, and responses from, other travellers. For many, there were no significant or negative interactions and responses (*Damian_ M_56, Ben_ M_52, Steve_ M_34, William_ M_73+, Connor_ M_37*) or none from specifically car drivers (*Emily_ F_37, James_ M_58, Jessica_ F_55, Oliver_ M_35-40*) or bike riders and pedestrians (*Sophie_ F_31*). Neutral responses were reported from car drivers (*Emily_ F_37, Jessica_ F_55*), cyclists and pedestrians (*Sophie_ F_31*).

One reported positive response from schoolkids (*think they are cool*) and cyclists (*they ask*) (*Jack_ M_22*), or other e-scooter users (*Jack_ M_22*), while one reported positivity from *all* other travellers: “not one of them in the year and a half and the hundreds of people I've gone past that are walkers, cyclists, pedestrians. No, everyone seems positive towards it” (*Steve_ M_34*), which they compared favourably to their experience as a motorbike rider.

However, negative responses were reported from: Moped/motorbike riders “the one that told me that they wished I would die, was actually on a form of transport that was so similar to my

own, which [...] confused me" (*Emily_F_37*); 'People': "maybe 5% of the people [...] you shouldn't be riding on the road. Get off the road. that type of comments" (*Mike_M_51*); *Sense resentment or dislike from some people – no incidents* (*James_M_58*); "just generally people in the street. You have people that will be verbally abusive towards you. [...] I've had people literally stand in my way on purpose [...] And then of course, there are people that are particularly scared. They do get really worried." (*Hillary_F_36*); Pedestrians: *Looks but nothing else* (*James_M_58*); *negative comments from (deaf?) pedestrians sometimes* (*Jessica_F_55*); Drivers: (*Mike_M_51*) *Abuse from drivers, they pull out. Verbal, dislike.* (*Mike_M_51*); who mount the curb (*Hillary_F_36*); described as "attempted murder" (*Jack_M_22*); *verbal abuse* (*Oscar_M_44*); Cyclists: *not verbal* (*Oliver_M_35-40*); Buses: *not verbal* (*Oliver_M_35-40*); Friends: *sometime roll eyes* (*Jessica_F_55*).

One noted that the stigma attached to "people doing illegal activities and things" was attached to them (*Mike_M_51*), while another pointed out that negative reactions from pedestrians could easily be avoided: "Because again, you slow down, move off the path if necessary or just pull up on the side" (*William_M_73*).

3.5 Legality

How the legal aspects of e-scooter ownership and use are discussed in participant responses are summarised in table 5.

Table 4: legal aspects of participant data

ID	Knowledge of illegality				Opinion of illegality, and legal interactions				Still using
	When bought	Since buying	Knew penalty	Confusion about penalty	Incomprehension	Legal trials in area	Police crack-down in area	Stopped by police	
Damian		✓		✓	✓			✓ Confiscated	X
Claire		✓		✓				✓ Partner was	X
Ben	Known at time of interview								✓
Steve	✓		✓		✓			✓ Ran	✓
John	✓					✓			X
Mike	✓			✓					✓
Olivia	✓		✓		✓	✓	✓	Avoids	✓
William	Known at time of interview				✓			Avoids	✓
Emily	✓				✓		✓	Sees lots	X
Sophie	✓				✓			Avoids	✓
James	✓				✓			Avoids	✓
Isabella	✓			✓	✓			Accepts risk	✓
Jessica	✓				✓		✓		X
Hillary		✓	✓					Avoids	✓
Oliver	✓		✓		✓				✓
Jack	✓				✓			✓ Warning	✓
Oscar		✓			✓			Avoids	X
Connor		✓			✓				X

3.5.1 Knowledge of legality

Knowledge of legality at purchase

Thirteen of the 18 interviewees (72%) knew that it was illegal to use when they bought an e-scooter (*Steve_ M_34, John_ M_53, Mike_ M_51, Olivia_ F_43, William_ M_73+, Emily_ F_37, Sophie_ F_31, James_ M_58, Isabella_ F_51, Jessica_ F_55, Oliver_ M_35-40, Jack_ M_22*), with some giving qualifications to this knowledge. The qualifications mentioned are that they: were “technically in the wrong” (*Steve_ M_34*); *assumed they would be made legal soon* (*John_ M_53*); “wanted them anyway” (*Olivia_ F_43*); were not worried about using an illegal mode as it was “the right thing to do” (*William_ M_73+*); were warned about illegality but thought “yeah, I’ll give it a shot” (*Emily_ F_37*); were “less likely to use it” as a result of knowing (*Sophie_ F_31*); “continue to do it as my sort of little protest against that sort of stupid law, really” (*James_ M_58*).

One pointed out that they know *other* users had had e-scooters confiscated, but thought that “they know the law at the end of the day” (*Mike_ M_51*), another accurately described that “it’s illegal to use on any road apart from a private one” (*Oliver_ M_35-40*), while another in London wrongly thought that “they’re not legal in certain boroughs and certain areas” (*Jack_ M_22*).

Knowledge from punishment for use

Two participants found out the legal status when they (*Damian_ M_56*) or their partner (*Claire_ F_26-30*) had their e-scooter impounded (*Damian_ M_56*) or their use punished (*Claire_ F_26-30*). Their explanations are worth reporting in full: “I said, guys, I didn’t know about this, nobody told me illegal. The salesmen said to stay in the back roads and whatever blah, blah, blah. They never said they are completely illegal. I haven’t done that research, so that’s my fault but I blame the salesmen for it [...] When I became aware it when they took it away. And then I started to do a bit of internet scrolling and see what the situation is all about” (*Damian_ M_56*); “[my partner] got caught on his scooter by the police. He was wearing a helmet, wearing a high vis. He got a £300 fine and six points on his licence before he even got it [the licence].” (*Claire_ F_26-30*).

Knowledge after purchase

Four participants stated that they discovered about the illegality after they had purchased their e-scooter and before the interview (*Ben_ M_52, Hillary_ F_36, Oscar_ M_44, Connor_ M_37*): “I found out they were illegal when I’d already been riding one for a period of time.” (*Hillary_ F_36*) “I actually looked into what the consequences and legality of the scooter was. It became clear it was a bit of petty misdemeanour and could actually be quite serious at that point.” (*Oscar_ M_44*); “However, I have since done a bit more research on the laws and everything. I’ve always tried my best to be a good lad and to follow the rules. So once I learned that they weren’t strictly legal on the public pavements or public roads and so on, I stopped using it. I haven’t used it since then.” (*Connor_ M_37*); “those delivery drivers on the electric bikes are a lot more dangerous than us illegal scooter riders are.” (*Ben_ M_52*)

Knew the exact punishments correctly

Four users were able to accurately name the potential punishments as points on the licence or a fine (*Steve_ M_34, Olivia_ F_43, Hillary_ F_36, Oliver_ M_35-40*) with two mentioning potential confiscation (*Steve_ M_34, Hillary_ F_36*).

Confusion about the legal status or punishments

Three revealed confusion about the legal status: *Assumed legal, not told by salesman, got confiscated by police. Threat to crush, has used it secretly on holiday but knows he could get it impounded and destroyed.* (Damian_ M_56); “I remember being told they weren't technically legal yet, but not that we were illegal. He got it thinking that it will be fine as long as you used it carefully, they're not going to care [...] all he got wrong was the fact that he didn't have insurance. He had the provisional driving licence, which is all you need to ride on one” (Claire_ F_26-30); *Fine and points – wasn't sure about it* (Isabella_ F_51)

Interesting views of legality

Two participants gave versions of the correct legal position of e-scooters being assumed to be motor vehicles until they were made illegal: One assumed though that they were not banned permanently: “I believe that the only reason they are currently illegal is because of a law which is very old and hasn't been changed for a long time [...] there's so many people using them and so many people going about it, you're less likely to get in trouble, you're more likely just to get a warning. Not much to go on. Whereas, if they were to be banned permanently...” (Jack_ M_22); “My understanding is that they're classifying them as motor vehicles. There's no way to register them. So at that point, you're driving an unregistered motor vehicle. Then obviously, it's unregistered so it's uninsured. Basically, through that loophole it's the impiety of possible pitfalls and prosecution” (Oscar_ M_44).

Wrong assumption of e-mop[ed]/motorbike legality

One interviewee complained about the illegality of e-scooters by comparing it to what he assumed was the legal status of non-pedal e-mopeds/motorbikes: “at the moment, you can buy an electric bike, pushbike, so, one that you can pedal. And if you want to you can stop pedalling and let the electric motor take over. And one of my friends owns one that goes up to 60 miles an hour. He can ride that on the road with no insurance, no tax, whatsoever. It's basically an electric motorbike but because it's got pedals attached, it's an electric assisted motor bike, a pushbike. He doesn't need anything.” (Steve_ M_34)

Stopped using at the time of the interview

Six stated explicitly that they had stopped using the e-scooters due to their illegality (Damian_ M_56, Claire_ F_26-30, William_ M_73+, Jessica_ F_55, Oscar_ M_44, Connor_ M_37), with one admitting some use on holiday (Damian_ M_56), one stating that they were “itching to start using it again. 100%” (Claire_ F_26-30), one having only used it “a dozen times” (Oscar_ M_44) having been ‘scared off’ by the consequences, and one stating that “once I learned that they weren't strictly legal on the public pavements or public roads and so on, I stopped using it. I haven't used it since then.” (Connor_ M_37). All others stated continuing use at the time of interview.

3.5.2 Opinion of legality

Incomprehension

The overwhelming opinion (stated by 61%) of the illegality of using e-scooters was one of incomprehension (Damian_ M_56, Steve_ M_34, Olivia_ F_43, Emily_ F_37, Sophie_ F_31, James_ M_58, Jessica_ F_55, Oliver_ M_35-40, Jack_ M_22, Oscar_ M_44, Connor_ M_37), with it also being called “ridiculous” (Steve_ M_34, Oscar_ M_44), “odd” (James_ M_58), “just crazy” (Jessica_ F_55), and “nonsense” (Oliver_ M_35-40).

The reasons given were: the government 'just deciding' that one useful mode is made illegal (*Damian_ M_56*); a comparison with other countries where it is legal (*Steve_ M_34, Sophie_ F_31, Isabella_ F_51, Oliver_ M_35-40*); the contradiction between 'doing the right thing' and 'following the rules' ("it's such an efficient way of getting to where I need to go ... it's affordable for young people ... it's just something that society needs to adopt to in the end": *Olivia_ F_43*); no clear logic in how the data collected from legal trials would lead to legalisation (*Emily_ F_37*); the contradiction between legal trials and illegal private use (*James_ M_58, Isabella_ F_51, Oliver_ M_35-40, Jack_ M_22*); the comparative safety equal to a bike (*Jessica_ F_55*); stopping people avoiding car (*Jessica_ F_55*) or using EVs for environmental reasons (*Oscar_ M_44*); the emptiness of cycle infrastructure that could be used (*Oscar_ M_44*); and their being as safe or safer than cars or any other vehicle (*Connor_ M_37*) "And there is the argument of course that e-scooters are dangerous and yes, there are people that are injured on them and there are people that die from e-scooter accidents, but the same could be said about cars. So I don't believe that they're any more dangerous than any other vehicle." (*Connor_ M_37*)

Responsible, sensible, safe

In coding the interviews, it became clear that there was a consistent picture of what the interviewees felt was (their) legitimate use of an e-scooter, which should not be illegal or penalised. This was a model of responsible, sensible, and safe use, which 88% (16/18) of participants spelled out. Being responsible was explicitly mentioned by three (*Damian_ M_56, Olivia_ F_43, ,*), including *responsibility for self* (*Damian_ M_56*), and "social responsibility to keep people safe and themselves" (*Isabella_ F_51*). Safety was mentioned by 9 (50%) (*Damian_ M_56, Ben_ M_52, Mike_ M_51, Olivia_ F_43, Emily_ F_37, Hillary_ F_36, Oliver_ M_35-40, Jack_ M_22, Connor_ M_37*), in several contexts, e.g., of one's own behaviour: "I've been driving motorbikes for, like I said, 30 years. Excellent, touch wood. So, I'm quite safety conscious" (*Damian_ M_56*); "treat these things with respect and obey the law if you know the law, that is. And, yeah, look after your own safety and people around you" (*Damian_ M_56*); "Are you being safe? Are you using safety here? [...] Are you riding safely?" (*Emily_ F_37*);

Or of feeling safe (*Mike_ M_51*). Safety 'gear' on the e-scooter or the person was seen as part of riding safely: "safety gear is an imperative" (*Ben_ M_52*); "Wear a crash helmet. Be safe." (*Mike_ M_51*); "they've got all their safety equipment on site, they've got helmets, they've got lights, they've got reflectors, you know, they're riding sensibly, so they're slowing down if they're going past a pedestrian on the pavement or you know, riding at a sensible place in the road. What difference is that for bicycle?" (*Emily_ F_37*); "I always wear a cycle helmet, that's also got a light on. I do sometimes use it in the dark, but I've got a high vis vest that I wear. My scooter has actually got LED lights front and back and it's also got indicators on it. So I just ride as safely as I can" (*Isabella_ F_51*).

As was being regulated: "I'm also in favour of having these things insured properly and to make sure that it's all done properly and safely" (*Connor_ M_37*).

And choosing the correct place to ride: [regarding whether to use road, cycle path or pavement] "I always do it down to what's the safest" (*Hillary_ F_36*);

However, being 'sensible', and using 'common sense' was a key part of the interviewees' model of a legitimate e-scooter user. Sometimes it was left undefined, as common sense is assumed to be: "when they're ridden sensibly like I do, and a lot of other people I know, then I think they're absolutely amazing things [...] I think to be honest with you, a lot of it is all down to use your common sense [...] those of us that are riding sensibly, leave us alone" (*Ben_ M_52*); "I run a

scooter shop and I'd say 75% of the people who come in here are middle aged people, professionals, very sensible [...] I feel in my heart that if you're sensible riding on it and they see you being sensible on it, they're not going to worry too much" (*Mike_ M_51*).

However, it was also explicitly linked to:

Proper 'gear' use: "I would put my helmet on, I would turn on all my lights. I would definitely use it. Because it just makes perfect sense" (*Damian_ M_56*); "Australia [...] the law there is that if you're riding a bike, you have to wear a helmet, and I think that's so sensible [...] for both probably e-scooters and for bikes, I think wearing a helmet would be really important" (*Sophie_ F_31*); "I'm wearing a helmet, I'm following the road rules. Maybe that's why I haven't been stopped" (*Sophie_ F_31*); "that I do know it can be confiscated at any time from me, but I feel as long as I'm wearing my cycling helmet and my high vis and I'm biking sensibly, I just hope that I don't get stopped" (*Isabella_ F_51*).

Being considerate to other travellers: "they were completely turning a blind eye because they knew that it actually wasn't doing anybody any harm, providing you are riding it sensibly [...] they're riding sensibly, so they're slowing down if they're going past a pedestrian on the pavement or you know, riding at a sensible place in the road" (*Emily_ F_37*); "If you're a person with common sense, you're a person consideration and you're a person that does want to do right by people, then you're going to properly. I believe the majority of people are like that" (*Claire_ F_26-30*);

"Are you riding sensibly? Are you taking into consideration pedestrians?" (*Emily_ F_37*); "So I always try to drive as sensibly and as considerably as possible. That's the least I can do knowing that I'm doing something illegal" (*Hillary_ F_36*); "I just don't really want to hurt other people so I'll just pull on to the pavement [...] let the bus go past and go back to the road again" (*Oliver_ M_35-40*); "I'm always very respectful if I see anyone or an elderly person I will slow down or a dog or anything" (*Jack_ M_22*).

As in the last quote, this was linked to being aware of travelling illegally, linked here to being a local citizen: "I'll just pull over, come to the stop. The same with pedestrians because I just know I'm technically in the wrong [...] I know most people around here. The last thing I want to do is look like, not only am I using an electric scooter and I shouldn't be but I'm using one in a dangerous or unethical manner." (*Steve_ M_34*)

One participant linked riding sensibly to the investment and ownership of a private e-scooter: "My scooter when I first got it cost £600. I just think if you're investing that much money in a scooter you would tend to take more care of it and ride it more sensibly because you know that it can be taken off you. I just don't understand how you can hire one in a busy town but you can't ride one of your own." (*Isabella_ F_51*)

Finally, one user explained that the police implicitly sanctioned sensible riding when they stopped him: "he spoke to me and said that he was happy for me to carry on and doing my thing as long as I was just to be riding sensibly like I was basically [...] 'we can see it's well faster and you're riding sensibly. You've indicated come in, you've shown that you're comfortable to ride on the road'." (*Jack_ M_22*).

Other expressions of legitimate use included: not weaving through traffic (*Ben_ M_52*, *Jack_ M_22*); being "polite to pedestrians and just be courteous" on pavements (*Mike_ M_51*); projecting proper behaviour to one's children "obviously I've got two young children and I

want to project doing the right thing for them and following the rules” (*Olivia_ F_43*); commuting (*Olivia_ F_43, Emily_ F_37*).

Finally, one interviewee was conscious of their e-scooter use being perversely their only non-conformist behaviour: “it’s part of my protest against the law [...] I’m very law-abiding, generally [...] I’m completely law-abiding. Apart from this” (*James_ M_58*), and another railed against those who were ruining the image of e-scooterists with their behaviour: “I don’t want to sort of pick the younger teenage people, but it tends to be younger people that are riding on the pavement in a busy pedestrianised area within in a lot of people. That does annoy me because I just think ‘if only you would just ride it sensibly... It’s people like you that are getting scooters a bad name’ and they won’t ever be legal if people are going to ride like that” (*Isabella_ F_51*), while another reflected that “I have no control over that. So I’ve just set a good example myself.” (*Hillary_ F_36*)

3.5.3 Interactions with police

Four participants reported interactions with the police (*Damian_ M_56, Claire_ F_26-30, Steve_ M_34, Jack_ M_22*), summarised in table 5: one confiscation with a threat to crush (*Damian_ M_56*), a partner receiving a £300 fine and six points on their licence “before he even got it” (*Claire_ F_26-30*), one “just scooted off” after being pulled over to avoid a warning (*Steve_ M_34*), and one received a warning with details and a photograph being taken, who has decided to run next time they think they are being pulled over (*Jack_ M_22*).

Others reported riding but being paranoid but rebellious (*Olivia_ F_43*), whereas others assume they have not been stopped because: the police do not have time or do not treat it as a priority (*William_ M_73*); they are white and female “with all my safety equipment on” and therefore “not going to be the person that someone’s going to pick on to stop most of the time anyway” (*Emily_ F_37*); they are “wearing a helmet [...] following the road rules” (*Sophie_ F_31*); they avoid ‘heavy’, built-up areas (*James_ M_58*); they are using it using *politely and not dangerously* and do not ride “erratically or, I wasn’t being a danger to any other person” (*Oliver_ M_35-40*); the police when stopping them told them that they were using a (higher-speed and larger) e-scooter safely or properly (*Jack_ M_22*).

The latter is worth spelling out in some detail, as it displays the implicit sanction for riding in some detail: “the police officer said, as long as you’re not riding and causing like a nuisance like swerving in and out of traffic and things like that [...] then they’ve got no problem with it. I mean,” [...] he spoke to me and said that he was happy for me to carry on and doing my thing as long as I was just to be riding sensibly [...] he just pulled in behind me, calmly got out and spoke to me about it and he said you’re not supposed to be on them, obviously, this is a bigger one and a faster one. Very nice and we can see it’s well faster and you’re riding sensibly. You’ve indicated, come in, you’ve shown that you’re comfortable to ride on the road. We’ve got no problem with that. The only issue is you’re not insured [...] So, we’re not going to actually take the scooter away from you. We’re just going to give you a warning and what they did is they took my details, just my name, my address, and then they just took a photo” (*Jack_ M_22*). This user however stated that they knew that there would be serious consequences with another stop and so would ‘scooter off’ to avoid one.

This explains the assumptions made by another participant “I get the impression that they’re policing by postcode a little bit. I think the city centre itself is a complete no go. They’ve been a little bit more tolerant, in some suburbs.” (*Oscar_ M_44*)

Several mentioned avoiding police interactions by re-routing (*John_ M_53, Olivia_ F_43, Emily_ F_37, Sophie_ F_31, James_ M_58, Hillary_ F_36*) or times/places of police 'crackdown' or 'sting' operations (*Olivia_ F_43, Emily_ F_37, Sophie_ F_31, Jessica_ F_55*) with two stopping use as a result of these completely (*William_ M_73+, Jessica_ F_55*) and one still making an occasional trip (*Olivia_ F_43*). One was considering restarting use despite ongoing police crackdown (*Emily_ F_37*). Several mentioned finding out about police activity to avoid through 'user groups', usually on Facebook (*Olivia_ F_43, Emily_ F_37*). In general, 8/18 (44%) found out about e-scooters and/or crackdowns from user communications (i.e. Facebook groups), of whom 50/50% were M/F, with only 1 under 35yrs.

Fear of getting caught

Many users cited the fear or risk of getting caught by the police (*Steve_ M_34, John_ M_53, Mike_ M_51, Olivia_ F_43, Emily_ F_37, Sophie_ F_31, Jessica_ F_55, Hillary_ F_36, Oliver_ M_35-40, Jack_ M_22, Oscar_ M_44*), often mentioning emotions: Worry (*Sophie_ F_31, Jessica_ F_55, Oliver_ M_35-40, Jack_ M_22, Oscar_ M_44*) "I don't feel at ease using it" (*Mike_ M_51*); "I'm quite conscious [...] I was paranoid" (*Olivia_ F_43*); "concerned" (*Jessica_ F_55*); "scared", "anxious" and "cautious": "having to have to worry over my shoulder constantly" (*Jack_ M_22*).

This motivated the avoidance behaviours reported above, but several mentioned it being a risk or worry worth taking or dealing with (*Mike_ M_51, Olivia_ F_43, Emily_ F_37, Jessica_ F_55, Hillary_ F_36, Jack_ M_22*).

Several mentioned that this fear and worry would put off 'legitimate' users (often, as they saw themselves – see Responsible, Sensible, Safe): "I'm not a high speed whiz bang. I just want a scooter so I can ride it without getting done by the police" (*John_ M_53*); "they see you being sensible on it, they're not going to worry too much I think" (*Mike_ M_51*); "I just think the people that would like to use private ones probably aren't getting the opportunity at the moment because, you know, people that would use it and use it to get to work are probably people that don't want to get in trouble with the law" (*Sophie_ F_31*).

3.5.4 Intention to use if legal

Two participants (*Ben_ M_52, John_ M_53*) stated that they knew of ways to 'make their scooter legal' but both mentioned it being too expensive (£800 was mentioned), with one calling it too complicated.

The majority stated explicitly that they wanted e-scooters to be legal to use (*John_ M_53, Mike_ M_51, Olivia_ F_43, Emily_ F_37, Sophie_ F_31, James_ M_58, Isabella_ F_51, Jessica_ F_55, Jack_ M_22, Oscar_ M_44, Connor_ M_37*), with the e-scooter shop owner stating that his customers wanted this too (*Mike_ M_51*), and several stating that helping get them made legal was their prime motivation for getting involved in the study (*Jessica_ F_55, Jack_ M_22, Oscar_ M_44*). One was keen for her children to be able to legally use them to commute (*Olivia_ F_43*). It was stated that if they were made legal, they would be using them "multiple times a week" (*Sophie_ F_31*), and the law change should happen "the sooner the better" (*Emily_ F_37*).

3.5.5 Suggestions of regulation

Many participants made explicit suggestions for how legalised use should be registered; almost all agreeing that it should be regulated somehow. The suggestions usually drew on comparisons with the regulation of other modes (see next section). The conditions mentioned were: maximum speed (*Mike_ M_51, Olivia_ F_43, Oliver_ M_35-40*), perhaps 25kph (*Oliver_ M_35-40*),

25-30mph (*Jack_ M_22*), or different registration for higher speeds (*Oliver_ M_35-40*); insurance (*Steve_ M_34, Mike_ M_51, Olivia_ F_43, Connor_ M_37*) or 'liability' "; "not about laws and licencing and insurance, it's actually about public liability [...] if you knock someone over whilst riding a normal bike, you can be sued. You've got a public liability [...] I'm not sure why we can't see our way to doing that with these devices, really" (*Olivia_ F_43*); a minimum age (*Mike_ M_51*) e.g. 18 (*Sophie_ F_31*); a provisional driving licence (*Mike_ M_51, Sophie_ F_31*); they should be allowed only on the road (*Connor_ M_37*), "on the pavement or a dual cycle path pavement" (*Emily_ F_37*), or "wherever a bike goes" (*Sophie_ F_31*); mandatory training (*Mike_ M_51*); compulsory safety gear ("helmet, lights and everything else you need": *Mike_ M_51*), helmet (*Sophie_ F_31, James_ M_58, Connor_ M_37*) or hi-viz jacket (*James_ M_58*); registration and plates (*Mike_ M_51*); a riding test (*James_ M_58*); an 'MOT' (*Steve_ M_34*); different rules for urban and rural use (*Steve_ M_34*); should be confiscated if people ride them "irresponsibly [...] like idiots" (*Isabella_ F_51*), "driving erratically or danger to the public or to other people's property." (*Oliver_ M_35-40*)

Mode regulation comparisons

As mentioned above, the exact nature of the regulation that participants preferred was often reasoned through comparisons with the regulation of other modes of transport, especially bikes (*Claire_ F_26-30, Ben_ M_52, Steve_ M_34, Olivia_ F_43, Emily_ F_37, Sophie_ F_31, Isabella_ F_51, Oliver_ M_35-40, Connor_ M_37*) and e-bikes (*Damian_ M_56, Claire_ F_26-30, Steve_ M_34, Emily_ F_37, Isabella_ F_51, Jessica_ F_55*), cars (*Claire_ F_26-30, Olivia_ F_43, Emily_ F_37, Sophie_ F_31, Connor_ M_37*), motorbikes (*Claire_ F_26-30, Steve_ M_34, Olivia_ F_43, William_ M_73+, Sophie_ F_31*), mopeds (*Claire_ F_26-30, Sophie_ F_31*), unicycles (*Damian_ M_56*), quadricycles (*Steve_ M_34*) motorised wheelchairs (*Oscar_ M_44*) 'vehicles' (*Mike_ M_51*) or all other modes (*Ben_ M_52, Mike_ M_51*). E-scooter use being illegal was seen as unfair in these comparisons because of what were thought or felt to be similar/identical:

Speeds: "an e-bike with no lights on it, travelling at like 30 miles or 35 miles an hour" (*Damian_ M_56*); "We certainly could not go faster than electric bikes" (*Claire_ F_26-30*); "one of my friends owns [an e-bike] that goes up to 60 miles an hour" (*Steve_ M_34*); "bicycles [...] go really fast, bicycles go faster than they do. And [...] people say 'oh, but they have to be on the road'. Well, actually most E-scooters are cut to 15 and a half miles an hour. And those on the road around me [...] have got a new speed limit to 20 miles an hour" (*Emily_ F_37*); "The ones limited to 15 mile an hour can do the same damage as a pushbike. Everybody's saying: Oh, e-scooters its e-scooters, but bikes do that, bikes are riding in parks" (*Jessica_ F_55*); "these are similar to a bicycle. Sometimes a bicycle can go more faster than a scooter and these are limited to certain speed" (*Oliver_ M_35-40*).

Risks/safety/accident rates: *Risk exaggerated compared to other modes – thousands die, only one on an e-scooter?* (*Mike_ M_51*); "actual statistics [...] comparing them against [...] how many accidents have happened on bicycles [...] how many car accidents there are. But you don't stop people riding a bike [...] And you don't stop people having a car." (*Emily_ F_37*); "you see a lot of stories about injuries or fatalities [...] but you kind of don't see them reporting on, you know, how many cyclists are injured, or that kind of thing" (*Sophie_ F_31*); "E-scooters are dangerous and yes, there are people that are injured on them and there are people that die from e-scooter accidents, but the same could be said about cars. So, I don't believe that they're any more dangerous than any other vehicle." (*Connor_ M_37*)

Unsafe riding/driving: “saying there's always the odd person that makes it bad for the rest. That is not just for scooters. It is for bikes, mopeds, motorbikes, cars. There's always people that are going to use it dangerously” (*Claire_ F_26-30*); “they're like ‘what you stopped for’, well, because it's a red light. ‘Well, why you're not blowing it like the cyclists’, well, because I want these things to become legal” (*Ben_ M_52*); “if you're gonna persecute us, persecute all the other idiots on the road” (*Ben_ M_52*) “And I've even been ridden into by someone on a push bike [...] the idea of these devices are that they're dangerous it's all about the rider really, as with anything, as with a car or a motorbike” (*Olivia_ F_43*); “You have gangs of youths riding around on bikes and things like that” (*Jessica_ F_55*).

The press was blamed for this negative narrative (*Olivia_ F_43*).

One pointed out the lack of regulation with wheelchairs which also use roads and pavements: “they are motor vehicles. However, so are motorised wheelchairs” (*Connor_ M_37*)

In other cases, it was thought that e-scooter use with safety features and gear made them more safe than other modes: “if you compare it to something like e-bikes or you compare it to these unicycles, I mean, I really fail to understand how they can allow an e-bike with no lights on it, travelling at like 30 miles or 35 miles an hour, no lights, no nothing; there's no regulation. People don't wear helmets. They allow unicycles with, again, no lights to warn any other road users” (*Damian_ M_56*)

Sometimes, it was suggested that other modes have no regulations at all, e.g. e-unicycles (*Damian_ M_56*), e-mopeds (*Damian_ M_56*) and e-mopeds/motorcycles (*Claire_ F_26-30*, *Steve_ M_34*) were wrongly identified as unregulated and legal.

The most common suggestions were that e-scooters should be regulated like bikes or e-bikes:

Bikes: “What difference is that for bicycle? [...] there is no restrictions on bicycles” (*Emily_ F_37*); “I would use my scooter the way I would use my bike [...] because I know about the laws [...] I'm just following the road and kind of conduct as you would with a bike” (*Sophie_ F_31*); “My scooter has actually got LED lights front and back and it's also got indicators on it. So I just ride as safely as I can in the same way that I would if I was on a bicycle on the road.” (*Isabella_ F_51*); “If they need to be insured in case of accidents, then fine insure them, have people insure them as a legal requirement. If it's also a legal requirement to be on the roads, then fine have people be on the road and wear helmets in the same way that they do with bikes.” (*Connor_ M_37*)

E-bikes: “you should just be able to go wherever a bike goes, you know, they are doing the same thing as e-bikes, so why would you treat them any differently [...] I think it kind of needs to be somewhere between a pushbike and a moped, I guess.” (*Sophie_ F_31*)

However, it was agreed by some that high-speed e-scooters should be banned: “there are a couple of scooters which can make 50 miles per hour and that's insane. I know it needs some regulation” (*Oliver_ M_35-40*); The dual motor ones that do 30 mile an hour is ridiculous. That's just crazy.” (*Oliver_ M_35-40*)

3.6 Conclusion

We have presented findings of interviews with users of private (illegal e-scooters) in the UK where the legal context differs from other countries, with private use of e-scooters being illegal. As suggested in the comparisons made in our (heavily caveated) tables, the motivations, trip purposes and vehicles substitution rankings revealed through interviews with our participants reflect those collected in surveys of users of privately-owned e-scooters in other studies. The evidence base around UK e-scooter use is based around shared scheme trials, whereas numerous recent studies find that motivations and trip purposes differ between shared and private use [13, 18-20, 22]. Our analysis provides rich qualitative exploration of these issues and also of argumentation for legalisation of private use, associated with largely welcomed regulation, that may increase legitimate, 'responsible, sensible and safe' use for largely utility purposes. Citizens' own argumentation for this is based predominantly on the comparison between the legalisation and regulation of other modes of transport (bikes and e-bikes in particular, but also the legal shared e-scooters) that appear to pose the same risks as shared e-scooters, and which are subject to light regulation. The suggestions that private use might also substitute more car trips than the current use of shared e-scooters also provides some support for the potential of e-scooters to complement other e-micromobility options to contribute to transport decarbonisation targets [8].

The findings presented here, suggest that there may be useful research and policy insights to be gleaned from further analysis of private e-scooter use in the UK.

Appendix: Topic Guide

Below is a copy of the interview topic guide. It outlines the questions asked and the prompts given during the interviews.

The next questions will go in more detail about the reasons of owning and using an e-scooter and impact on how you travel. The aim is to understand not only your actions, but also the reasoning behind these.

How did you start thinking about buying/using an e-scooter?

Probes:

- *Have you used before?*
- *Know someone else?*
- *Specific use in mind?*
- *What made you decide at the end?*
- *Have you discussed this with people?*
- *What were important characteristics when you decided for an e-scooter? And a model?*

How are you using your e-scooter? Has it changed anything compared to before?

Probes:

- *Frequency/distance/purpose, etc?*
- *Location?*
- *Travel?*
- *Activities?*
- *Anything else?*

Could you tell me something about your experiences with using the e-scooter.

- *Where is it used?*
- *Interaction with other road users?*

What is your understanding of the legal position of the e-scooter in the UK?

- *Awareness that it is not legal?*
- *Opinion?*
- *Why still using?*

Author Contributions

EH designed the study. EH collected the data. EH, JK and FB contributed to cleaning and anonymising the data. NC, JK and EH analysed the data. NC and IP wrote the manuscript. FB, IP and EH writing - review and editing. Funding acquired by FB and EH *inter alia*.

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