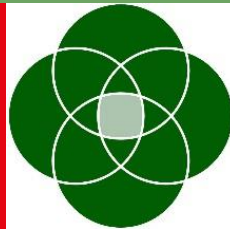


# E-Scooters

Speaker 1: Kiron Chatterjee  
(John Parkin)

**UWE  
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University  
of the  
West of  
England



Centre for  
Transport &  
Society

Presentation by  
**Kiron Chatterjee**

Co-authors:

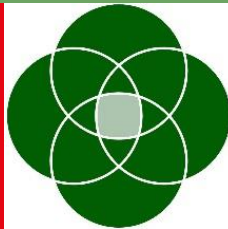
**John Parkin**  
**Tamara Bozovic**  
**Jonathan Flower**

# E-scooters in the West: What we found out and what we still need to know

6<sup>th</sup> July 2023

**UWE  
Bristol**

University  
of the  
West of  
England



Centre for  
Transport &  
Society

# Last week's announcement



## Expanding the e-scooter trial

In light of the success of e-scooters in the region, the West of England Mayoral Combined Authority has negotiated a brand-new contract with a different provider - TIER - that will take over the running of the scooters from late September.

Alongside 4,000 e-scooters, for the first time will also be 1,500 new pedal-only e-bikes and 20 e-cargo bikes. 100 brand-new e-scooter parking racks will help to keep the fleet tidy. Swedish firm Voi, the existing West of England operator, will continue to run the current e-scooter until the autumn when the new TIER service takes over.

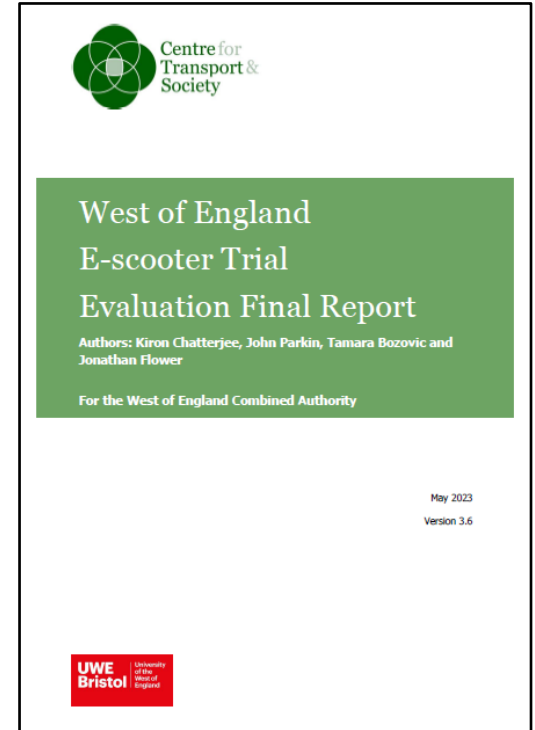
### Key findings from the e-scooter evaluation report

[READ KEY FINDINGS](#)

[DOWNLOAD THE REPORT \(PDF\)](#)

# Outline of presentation

1. Context
2. Results
  - a) Journeys, users and user benefits
  - b) Transport mode choices and accessibility
  - c) Health, wellbeing and carbon
  - d) Safety **JONATHAN**
  - e) Impacts on non-users **TAMARA**
3. Gaps in knowledge

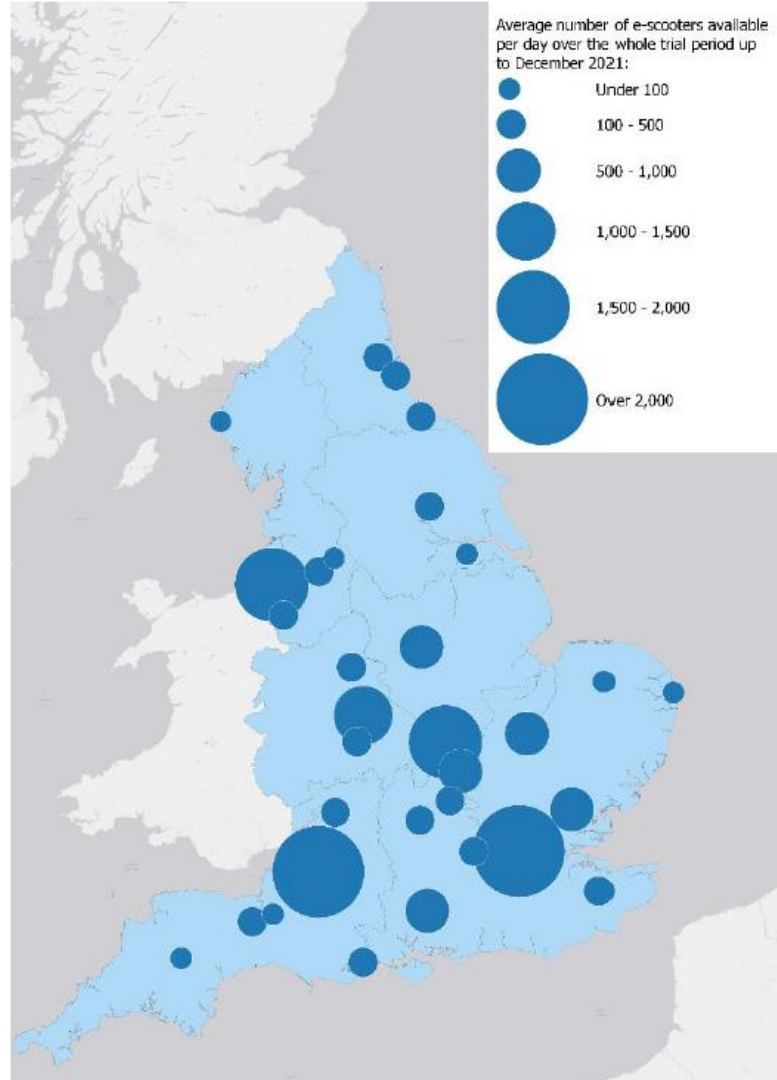
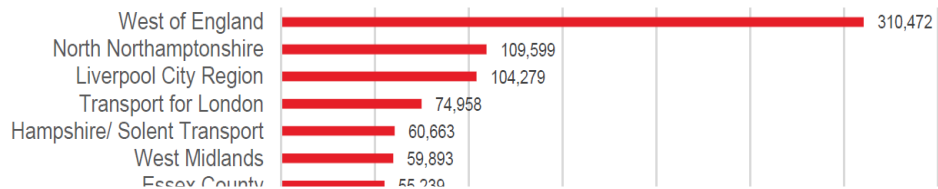


# 1. Context



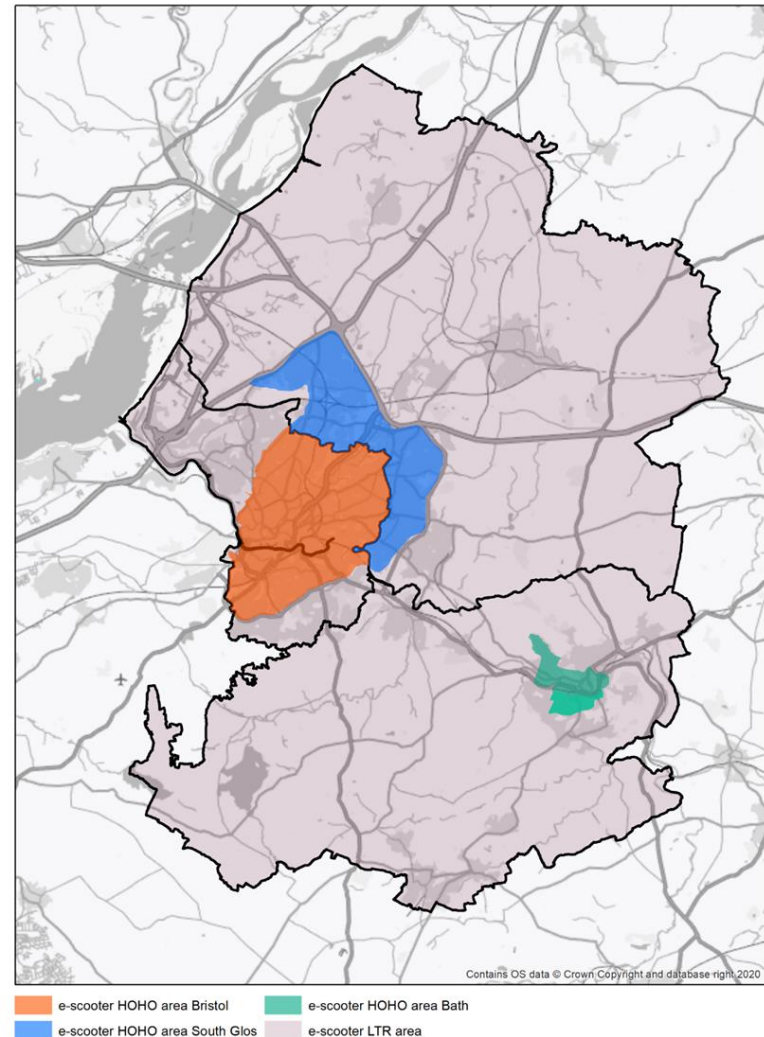
# E-scooter trials

- DfT permitted trials of rental e-scooters in July 2020
- Trial period extended a number of times (now to May 2024)
- 32 trials across 55 areas of England
- 14.5 million rental e-scooter trips made up to end of December 2021 across 1.4 million registered users
- Largest trial was in West of England



# West of England trial

- Launched in October 2020
- Two rental options
  - Hop-on Hop-Off (HOHO)
  - Long-Term Rental (LTR)
- Three payment options
  - Pay-as-you-go
  - Day pass
  - Month pass
- Trial areas have steadily expanded (map to right is at start of 2022)
- One operator (Voi) up to now but new operator (Tier) from Autumn 2023



# National evaluation

- Reported overall impacts across 32 trials up to December 2021
- Left open the opportunity to explore impacts in greater depth in specific trials

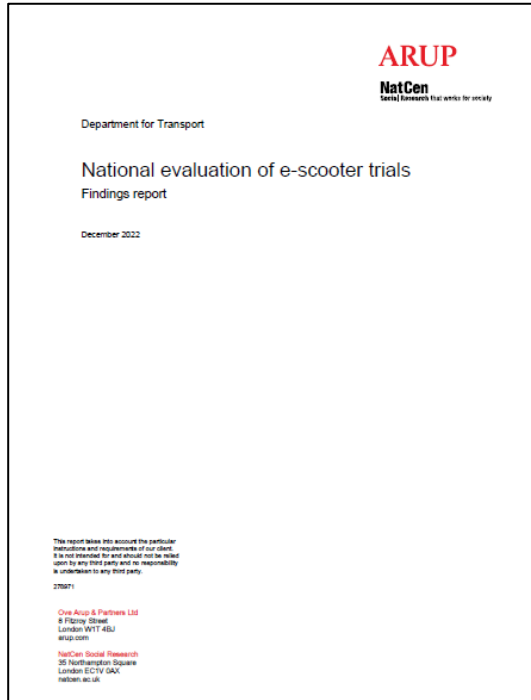
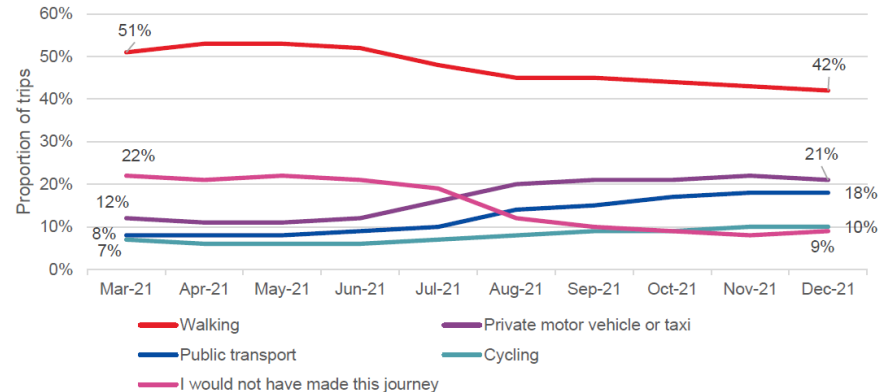


Figure 1: Mode shift to e-scooters, March to December 2021 (source: post-ride survey)





# West of England trial evaluation

Funded by WECA, conducted by UWE



Secondary data	Primary data
System data on rides	Intercept survey of users/non-users
Operator surveys of users	In-depth interviews of users
Operator incident data	Walk-along interviews of non-users
Police and hospital collision/injury data	Video observations of highway interactions
	Beat surveys of e-scooter parking



2a. Journeys, users and user benefits

# Usage levels

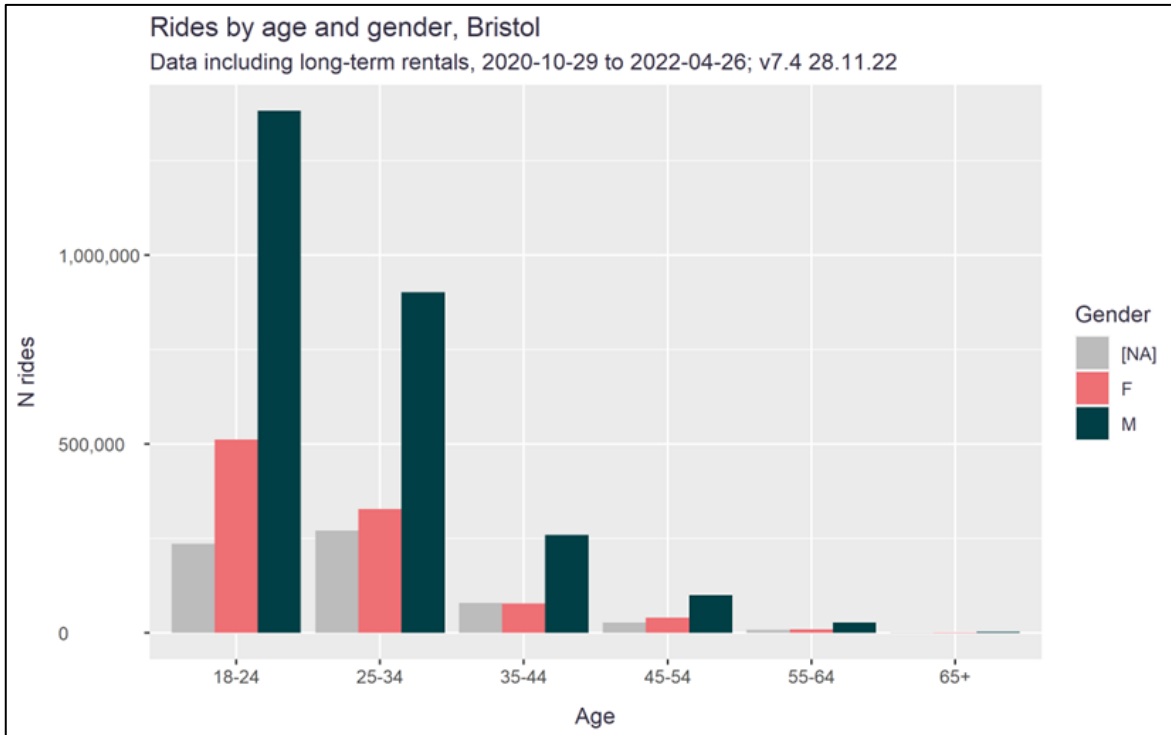
10 million trips achieved in total by May 2023

Area	Trips	Scooters	Users	Users as % of pop'n
Bristol & South Gloucestershire	442,921	3,070	58,435	8%
Bath	19,552	363	5,325	3%

Source: Voi February 2023 Bristol Monthly Report and Bath Monthly Report

# User characteristics

- 85% of rides by 18-34 year olds
- 2.8 times more male users than women
- 15% of account holders use e-scooters at least weekly (42,200 in April 2022)



Source: Voi system ride data

# Journey characteristics

- Journey length - three-quarters of trips less than 3.3 km in Bristol and three-quarters of trips less than 2.5 km in Bath
- Mode integration – e-scooters used as part of a longer journey involving bus or rail for between 10% and 20% of journeys
- Journey purpose – equally used for education/work as social/leisure

Trip purpose (last ride)	Proportions of rides - total and by age group						
	Total	Total	18-24	25-34	35-44	45-54	55+
Work	368	36%	30%	37%	42%	42%	23%
Social engagements	278	27%	24%	27%	27%	33%	29%
Running errands, eg shopping	149	15%	12%	17%	15%	11%	21%
Leisure - riding for fun!	117	12%	13%	9%	8%	14%	27%
Education	52	5%	16%	3%	0%	0%	0%
Gym / sports club	42	4%	5%	6%	3%	0%	0%
Medical / health appointment	10	1%	0%	0%	4%	0%	0%
<b>Total</b>	<b>1016</b>	<b>100%</b>	<b>100%</b>	<b>99%</b>	<b>99%</b>	<b>100%</b>	<b>100%</b>

Source: Voi Bristol and Bath Winter Survey Data

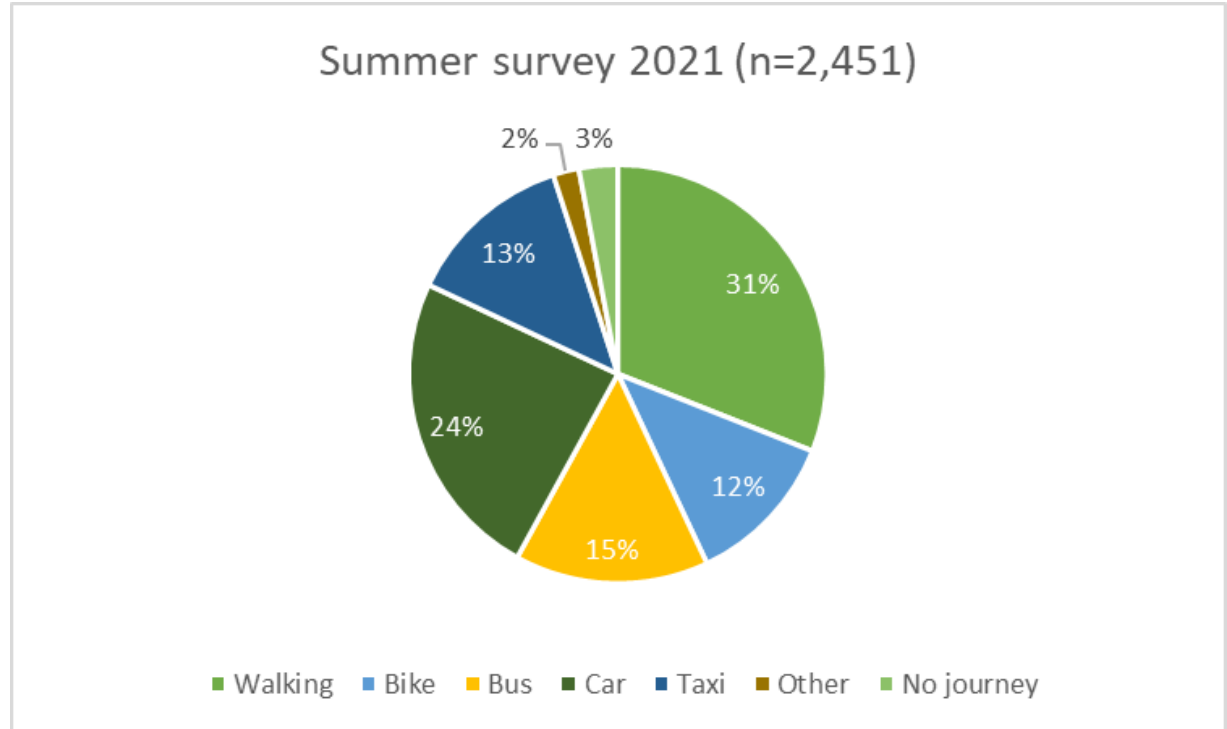


2b. Transport mode choices and accessibility

# Mode shift

- Car/taxi replacement in range 27-37%
- Younger users/more frequent users less likely to replace car
- Question does not tell us the full story

Think of your last e-scooter ride, which main mode of transport would you have taken if not an e-scooter?



Source: Voi Bristol Summer Survey Data. September 2021

# Impacts on travel routines

- Investigated through interviews with frequent, occasional and infrequent e-scooter users in Bristol
- Shared e-scooters are primarily replacing bus, walking and cycling for short journeys in central and inner areas of Bristol
- **Two user types:**
  - **Shared e-scooter first mode of choice for travel within Bristol**
  - **Shared e-scooter selectively chosen for particular situations**
- This shows e-scooters support existing car-free urban lifestyles (rather than 'converting' people)



# TYLER (M, 21-24) – E-SCOOTER CONVERT

Tyler first used an e-scooter in August 2021.

*“Well, I was always a keen sort of cyclist and I used to cycle to and from work, but because I had like split shifts, it meant that if I cycled home, I've been kind of knackered [...] Whereas if I got a [an operator's e-scooter], it was like a really comfortable means of getting home pretty quickly and efficiently.”*

He has gone on to use them more generally and from pay-as-you-go to getting a monthly pass.

***“Initially as a means to get to work. But then following that just sort of really, I really enjoy riding them. So just ride them all the time to get from A to B.”***

Tyler said he might have considered getting a car if there were no e-scooters in Bristol.

*“I think if they hadn't been a thing in Bristol, I might have considered getting a car. But at the moment I see no reason to, 'cause most of the journeys I do are pretty short. And if it's not [scooter]-able, I yeah, I probably get a train.”*

# DYLAN (M, 30-39) – E-SCOOTER ADDS TO THE MIX

Dylan first tried an e-scooter in early 2022.

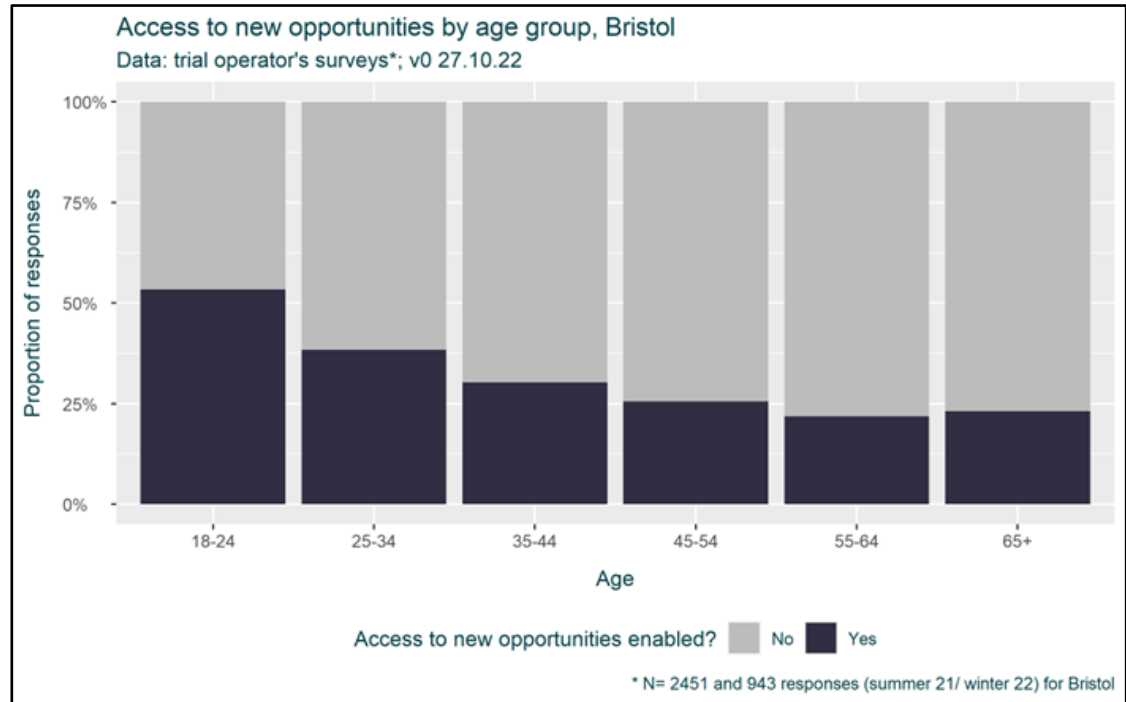
*“My wife was taking a walk around the harbourside and I thought I'd catch up with them with her and my sister-in-law. After finishing work early, just thought I'd jump on and there's no other mode of transport really other than walking and walking would take too long.”*

Dylan lives in an outer suburb of Bristol and has access to a car and bicycle. He uses both of these for getting to work and the car for shopping and leisure. He tends to use an e-scooter for getting into the city centre for social activities and will use a taxi to get home.

*“So the area that I found it very useful is going for some drinks or a meal into town. Because you are just unencumbered, you don't have a bike if I was to use that. It's cheaper than a taxi and you don't have a car, so you can choose to get a scooter into town and a taxi home and that's where a scooter would pop in. Much more social.”*

# Access to destinations

- 37% of all e-scooter users do not have access to a car (66% for 18-24 year olds).
- 39% of Bristol users and 31% of Bath users said that e-scooters enabled travel to places not previously possible
- Interviews highlighted that e-scooters facilitated exploration of the city, made it easier to visit family and friends and enabled some users to take on jobs which would not have been possible otherwise.





2c. Health, wellbeing and carbon

# Health and wellbeing

- Users recognised e-scooters involve less exercise than walking and cycling but said they encouraged them to go out when they might not otherwise.
- Nearly a half (45%) of e-scooter users considered that they contribute to wellbeing. This was attributed to the 'fun' factor of riding e-scooters, the increased ease of reaching destinations and the pleasure of being outside.

*“[...] it gives me a chance to get out and get some fresh air, and if there's some errands I need to run, which I probably wouldn't because of what could be tiring or something, it can sometimes be the difference between getting outside and going doing something.” (Tyler, M, 21-24)*

# Carbon emissions

- We estimated a net reduction of lifecycle carbon emissions but there is wide variability in values (i.e. 6 to 238 tonnes of CO<sub>2</sub> equivalent for Bristol in 2021)
- This is due to variability in estimates of mode replacement from different surveys
- Note there are factors not taken into account (such as changes in trip distance)

<b>Emissions type</b>	<b>Bristol Summer 2022</b>	<b>Bristol Summer 2021</b>	<b>Bristol Winter 2022</b>	<b>Bath Summer 2021</b>	<b>Bath Winter 2022</b>
Lifecycle (mean)	6.1	237.8	117.1	4.9	7.4
Lifecycle (lower bound)	-115.4	-100.3	-132.6	-9.2	-8.9
Lifecycle (upper bound)	127.7	575.9	366.8	18.9	23.6
Direct emissions	435.6	575.9	490.0	23.1	24.4



2d. Safety

# Safety

- From police data, we estimated trial e-scooter injury rate in West of England of 0.520 casualties per 100,000 km ridden compared to national urban cycling rate of 0.294 per 100,000 km. This 1.8 times difference needs to be treated with caution due to data limitations.
- 64% of e-scooter collisions were not at junctions compared to 26% for cycle collisions in Great Britain.
- Hospital data suggests most e-scooter rider injuries occur to upper and lower limbs and the head and face and are reported to result from falls.
- While nearly seven in ten riders say they feel safe riding an e-scooter, older people, women and infrequent users were more likely to report feeling less safe.
- JONATHAN will present findings from observational study on street interactions which is revealing about e-scooter rider behaviour



### 3. Gaps in knowledge

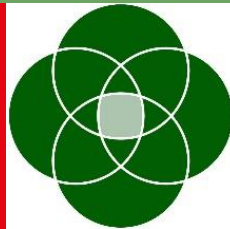
- Need data on shared e-scooter use alongside use of other transport modes and to see how travel behaviour evolves. This will enable more accurate assessment of mode shift and accessibility, health and carbon impacts.
- For safety, recording systems need to be developed to allow like-for-like comparisons with other travel modes to enable more accurate analysis.
- TAMARA and JONATHAN will highlight further gaps.

# E-Scooters

Speaker 2: Tamara Bozovic

**UWE  
Bristol**

University  
of the  
West of  
England



Centre for  
Transport &  
Society

Presentation by

**Tamara Bozovic**

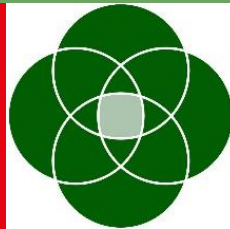
**Research Fellow**

# What e-scooters mean for walking experiences

6.7.23

**UWE  
Bristol**

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of the  
West of  
England



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Society

# Part of a broader assessment

Including also:

- Usage patterns and travel behaviour
- Safety
- Carbon emissions
- Parking

Chatterjee, K., Parkin, J., Bozovic, T., Flower, J., 2023. West of England E-scooter Trial Evaluation Final Report. Report to West of England Combined Authority. University of the West of England.

# More than half the world's population now live in cities

By 2050, this will reach two-thirds. As more people move from rural areas to cities, there'll be more cars on the roads, more traffic congestion hotspots near homes and workplaces, and less green space.

Unless we are bold enough to challenge the status quo and do something about it.

# Pedestrians and e-scooters are clashing in the struggle for sidewalk space



By [Peter Holley](#)

January 11, 2019 at 12:08 p.m. EST



- Tensions: playful vs civic values (Wallius et al., 2022)
- Concerns about walking experiences and use of public space (Gössling, 2020; Gibson, Curl and Thompson, 2022; Guide Dogs, 2022)
- Need to monitor interactions between e-scooters and pedestrians (Transport Committee 2020)

# Research gap

Tensions, concerns, and the need for evidence for urban governance, but limited evidence on:

- 1. Impacts of rental e-scooters on walking experiences**
- 2. Differences across ages or disability statuses**

# Importance of research gap

Right to the city, social justice, and policy-making:

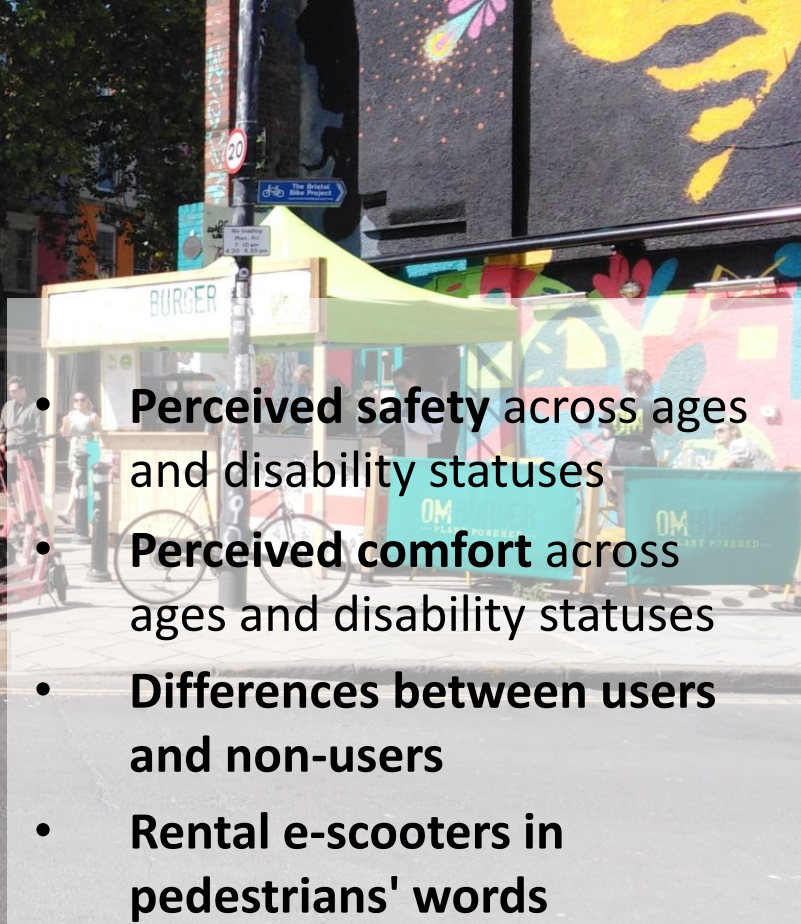
- Assessing whether rental e-scooters might further contribute to the exclusion of disabled people, “denied the everyday rights non-disabled people take for granted”, such as transport and access to opportunities (Equality and Human Rights Commission, 2017)
- In a broader sense, having a good understanding of the impact of rental e-scooters on walking experiences, particularly for non-users
- Gathering the evidence needed in the context of policies that are changing or to be created (Gössling, 2020).



# Study: e-scooters and walking experiences



- **Perceived safety** across ages and disability statuses
- **Perceived comfort** across ages and disability statuses
- **Differences between users and non-users**
- **Rental e-scooters in pedestrians' words**



# Data gathering

- **Experience surveys**, N=643
  - Intercept N=589
  - Online N=54
  - Mostly quantitative
- **Walk-along surveys**, N=9
  - Qualitative
  - Participants invited to lead the way and comment on any aspect relative to shared e-scooters



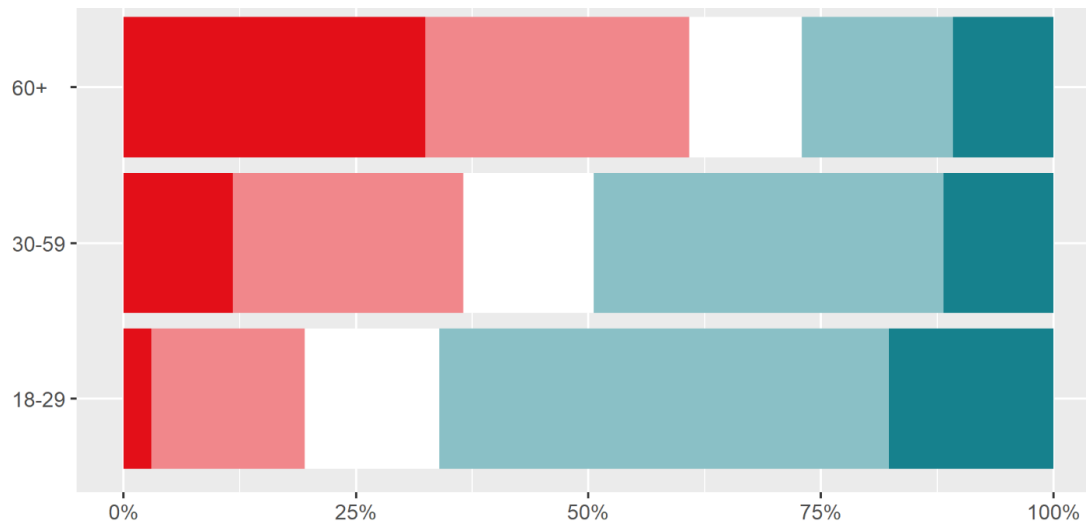
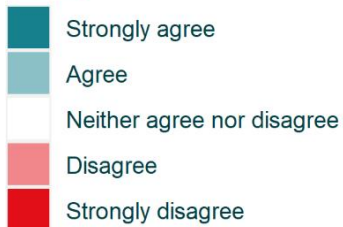
# Feeling safe around people riding

# "I feel safe around people riding rental e-scooters"

**Lower agreement for people aged 30+ or 60+, compared to 18-29**

Associated with "reckless" riding, and disrespect for rules.

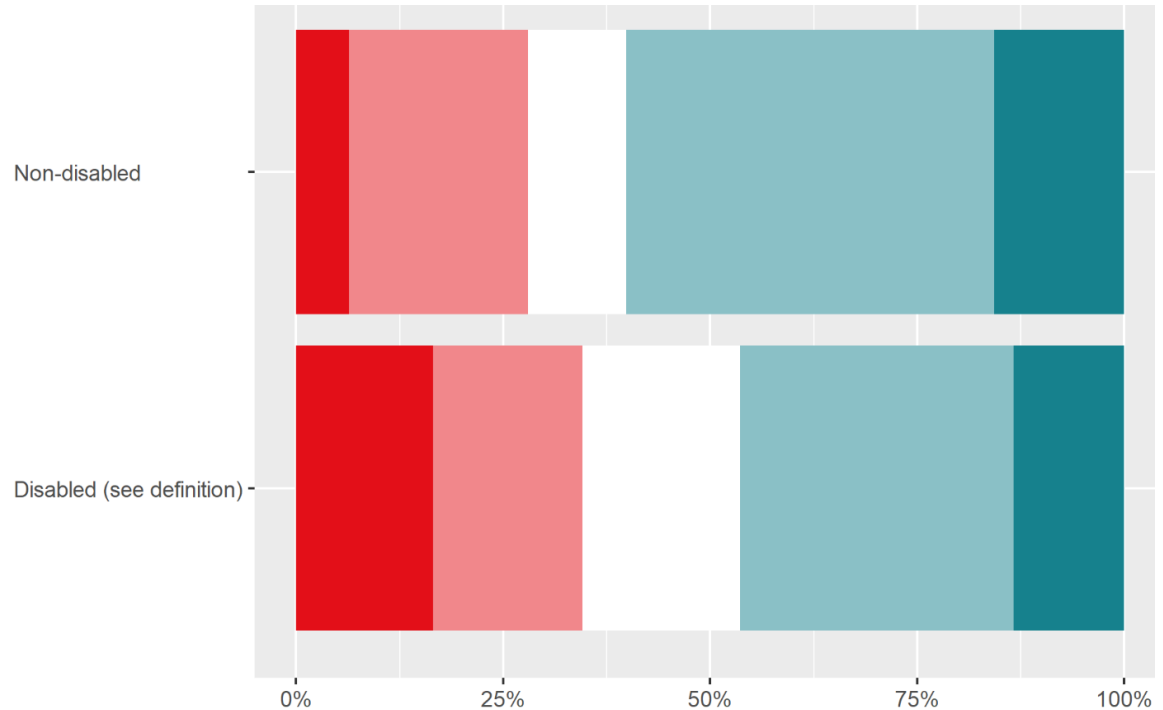
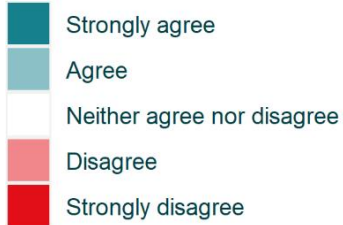
## Rating



# "I feel safe around people riding rental e-scooters"

**Lower agreement for disabled participants -** people having at least some difficulty walking / seeing / hearing / remembering or concentrating

## Rating



*As I am blind. E-scooters terrify me as they have no noise and most people who seem to ride them have no care for other pedestrians. (F, 30-59)*

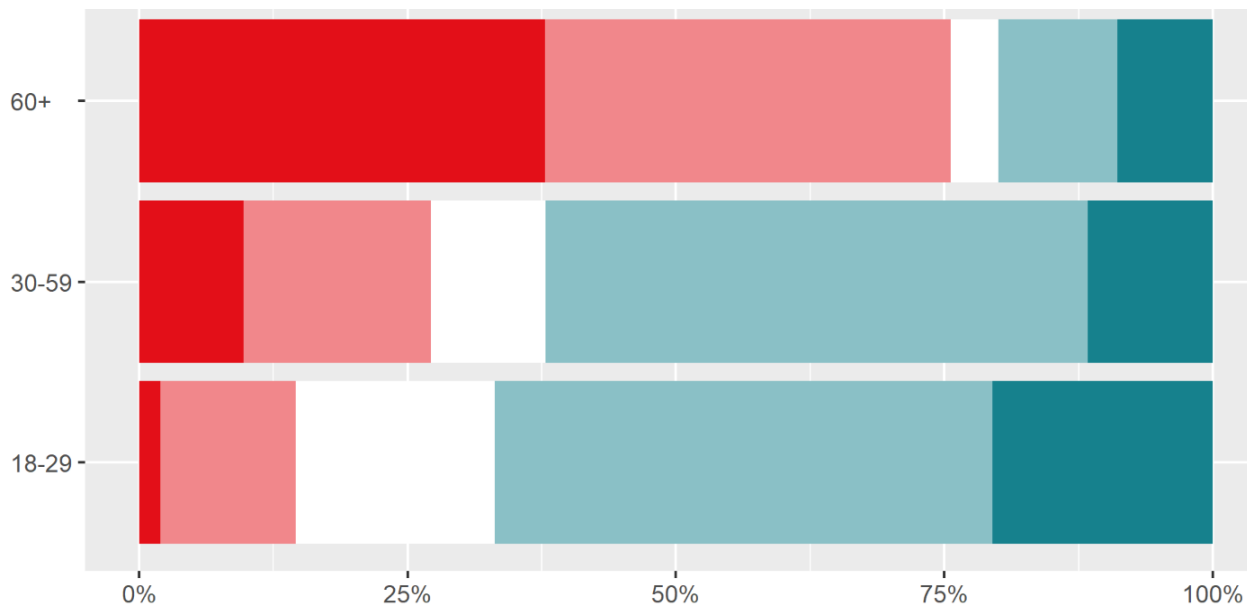
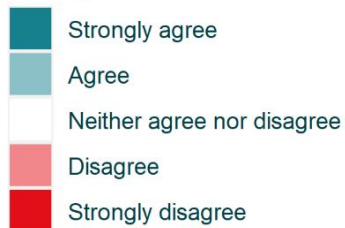
Feeling comfortable  
around people riding

# "I feel comfortable around people riding e-scooters"

**Lower agreement for people aged 60+, compared to 18-29**

NS difference in agreement between 30+ and 18-29

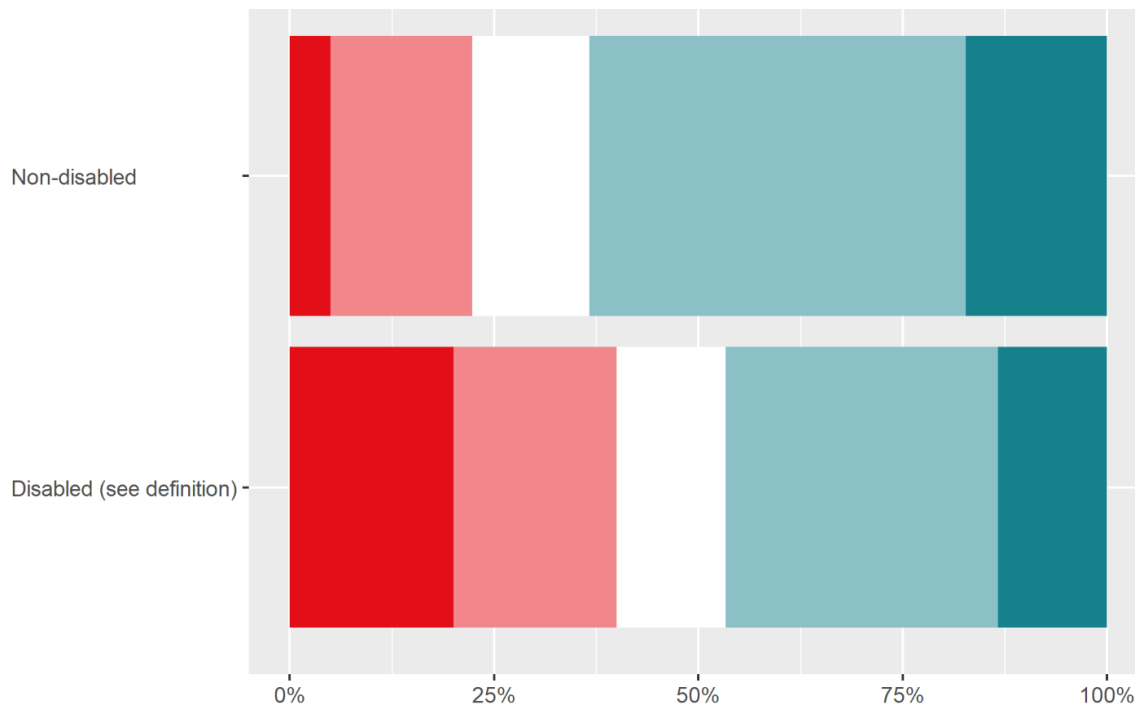
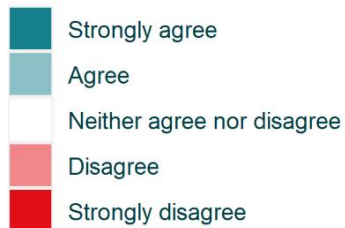
## Rating



# "I feel comfortable around people riding e-scooters"

**Lower agreement for disabled participants -** people having at least some difficulty walking / seeing / hearing / remembering or concentrating

## Rating





# Users vs non-users

# Users feel safer, when walking

Pedestrians who use rental e-scooters:

- **Felt safer** around people who ride than those who don't\*
- **Felt more comfortable** around people who ride\*
- **Felt more comfortable** around parked e-scooters\*

\* controlling for age / disability / gender

# Examples

Feeling comfortable around people riding rental e-scooters

	<b>Agreement, users</b>	<b>Agreement, non-users</b>
• Age 18-29	81%	56%
• Age 30+	71%	42%
• Disabled	70%	41%
• Non-disabled	78%	52%

# Walk-along interviews

Nine participants (seven with at least some difficulty seeing or walking)

# Rental e-scooters associated with

- Barriers to access
- A sense of risk
- A sense of loss of pedestrian space



# Barriers to access

- Difficulties accessing destinations
- Sometimes leading to avoiding certain areas

*I noticed because he was on two sticks [...] walking down Blackboy Hill and he actually had to turn sideways to walk down the public footpath. And I've seen often people having to walk into the road in order to get along, in other words putting themselves at severe risk.*

Alasdair\*, 60+, difficulties walking and seeing

*\* all names have been changed*

# A sense of risk

Experiencing or witnessing crashes or near-misses

*I have seen four elderly pedestrians [having] to jump out the way and [...] three [e-scooters] racing each other.*

Fran, 60+, multi-level mechanical disabilities, chronic pain and fatigue

*I have been knocked in my back by a woman using such a scooter because she could not steer it. [...] Negotiating my neighbourhood, as described, is terrifying because too often these scooters are just thrown on the ground.*

Anna, 60+, partially sighted

# Loss of pedestrian space

Partly used by e-scooters and not seen as a safe space anymore.

*Well especially at pedestrian crossings, because you're concentrating on the pedestrian light, you're not always aware of an e-scooter coming towards you [on the footway] or overtaking you because you only get a limited amount of time to cross the road. [...] I would say it's dangerous, but it's also stressful. [...]*

*And also, you see elderly people, you know, might see the husband pushing his wife in an ordinary wheelchair. Again, you know, they're the sort of people who do suffer, you know.*

Jay, 60+, electric wheelchair user



# Factors contributing to issues

- Inadequate infrastructure
- Lack of regulation
- Lack of enforcement
- Lack of training or ability

*My complaints are more about the built environment infrastructure, like the pavements and the cars parked on the pavements [...]*

Sam, electric wheelchair use

*There is a kind of logic that says if you've got your driving licence, you're okay to drive [...] but there are plenty of times I've seen people swerving all over the place and I think they haven't been trained.*

Alex, non-disabled

# Wrap up

- 1. Rental e-scooters can diminish walking experiences**
- 2. They can (further) discriminate** against older and disabled people
3. Low safety / comfort around e-scooters associated with
  - i. (Sometimes "reckless") footway riding + inadequate infrastructure
  - ii. Disorderly parking

Thank you!  
Happy to answer questions

Tamara Bozovic – [tamara.bozovic@uwe.ac.uk](mailto:tamara.bozovic@uwe.ac.uk)

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# E-Scooters

Speaker 3: Jonathan Flower



Presented by

**Dr Jonathan  
Flower, Senior  
Research Fellow**

Co-authors

Prof. John  
Parkin, George  
Lunt (AECOM)  
and Prof Kiron  
Chatterjee

6 July 2023

# Interactions of e-scooters with other street users: findings from an observational study

## CTS Symposium 2023

# Research questions

Gaps in the literature motivated the following research questions:

1. What **highway characteristics** have affected **e-scooter operation and safety**?
2. How does the **safety of riding an e-scooter** in the region **compare with cycling**?
3. How is the safety and comfort of **other road users impacted by e-scooters**?
4. How have e-scooters impacted the **performance of the road network**?

# Methodology

Video observations of both cyclists and e-scooter riders, 6am on Thursday 30th June 2022 to midnight on Sunday 3rd July 2022

- Objective coding of interactions to:
  - Indicate highway characteristics that affect e-scooter operation and safety
  - How other road users are impacted by e-scooter use
  - Highway network performance in relation to delay
- Data collected on:
  - Helmet wearing of both e-scooter riders and cyclists
  - Range of comparisons of interactions and behaviours between the two groups



# Bristol site selection – eight sites with high e-scooter/cycle flows

- Sites 1-3 with separated cycle infrastructure (Type 1)
- Sites 4-5 with cycle infrastructure that offered little protection (Type 2)
- Sites 6-8 with on-carriageway provision with lower e-scooter and cycle flows (Type 3)



# Observations of near-misses and illegal/ill-advised actions

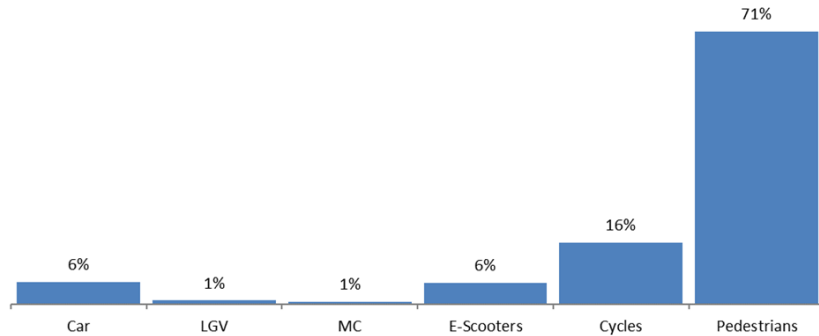
Near misses:

1. A road user needed to swerve, slow or stop to avoid a collision;
2. An e-scooter rider or cyclist rode within 1.0m of a parked vehicle
3. An e-scooter or a cycle was overtaken by a vehicle leaving a gap of less than 1.5m

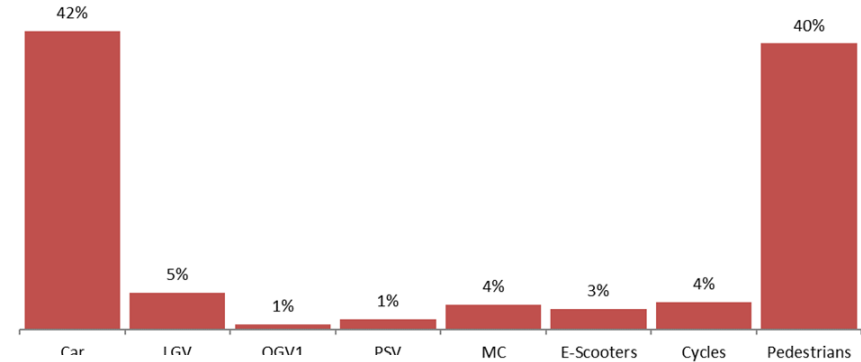
Illegal actions included: footway riding; double or triple riding; going through a red signal across a stop line on the carriageway.

Ill-advised actions included: not wearing a helmet and crossing at a signalised crossing with a red standing person/cycle symbol.

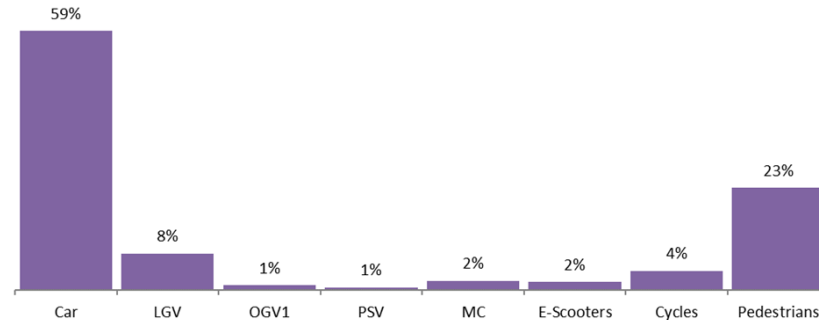
# Pattern of use (flow) at the sites 6am to midnight, 1 July '22 2021



**Type 1 (separated cycle infrastructure) exemplified by Site 3 (Prince St Bridge), n=21,912**



**Type 2 (painted cycle infrastructure) exemplified by Site 4 (Queen's Ave/Road), n=46,590**



**Type 3 (on-carriageway provision) exemplified by Site 6 (North St/Dean Ln), n=25,793**

# Close passing

- Proportion of e-scooters passing too close to parked cars is 34% (1,494/4,357)
  - Significantly fewer e-scooter riders than cyclists ( $\chi^2(1) = 20.3, p < 0.05$ )
- Proportion being close passed by drivers is 36% (1,124/3,080)
  - No significant difference in close passing by drivers of e-scooters or cycles
- Remarkably there were 4,357 instances of passing too close to a parked vehicle
- And 3,080 close passes in 36 hours of observations
  - Equates to 1.4 close passes a minute



*Leave at least 1.5 metres when overtaking cyclists at speeds of up to 30mph, and give them more space when overtaking at higher speeds (Rule 163, Highway Code)*

# Helmet wearing, 5-6pm across eight sites Fri. 1/7/22

Mode	No. of riders	No. wearing helmets	Percentage
Cyclists	1,881	1,066	57%
Trial e-scooter riders	927	85	9%
Other e-scooter riders	25	1	4%
All e-scooter riders	952	86	9%



- Most cyclists (57%) wear helmets
- 9% of e-scooter riders wear helmets
- Number of non-trial e-scooters identified (25) too low to make a meaningful comparison with the trial operator ‘hop-on-hop-off’ (HOHO) e-scooters
- Riders making illegal and ill-advised actions are less likely to be wearing a helmet than the general population of riders

Mode	No. of illegal or ill-advised actions observed	Of which, wearing a helmet	Percentage
Cyclists	5,867	2,307	39%
Trial e-scooter riders	3,753	136	4%
Other e-scooter riders	277	21	8%
All e-scooter riders	4,030	157	4%

*Illegal or ill-advised actions and helmet wearing from 36 hrs of data across eight sites*

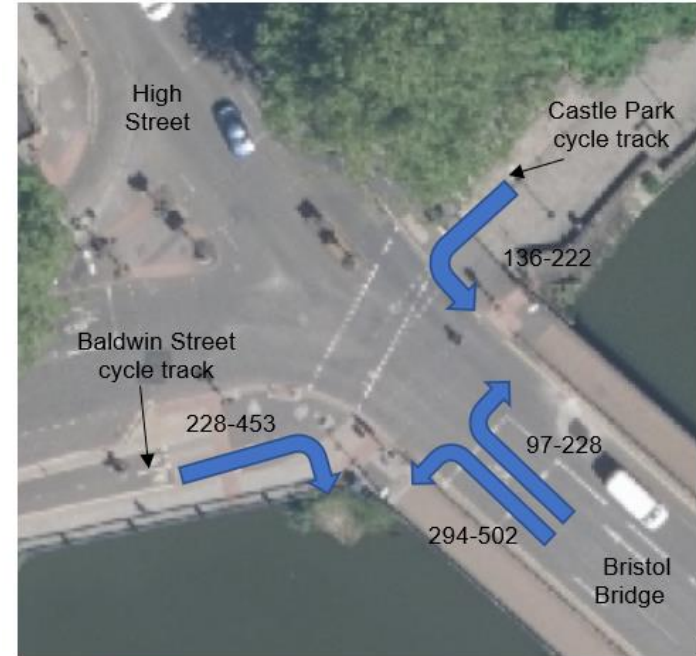
# Traffic signals (present at five sites)

**Most common illegal or ill-advised action – observations showed:**

- 24% of cyclists (4,031 out of 16,696) rode through a red signal
- As did 25% of e-scooter riders (2,739 out of 10,905)

**BUT it is complicated - Bristol Bridge was the only site with a cycle-only crossing and here rates of riders passing through a red signal were more than double:**

- Overall, 49% of all e-scooter riders (n=1,394) and 54% of cyclists (n=2,417)



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*6pm to midnight cycle/e-scooter turning counts for Saturday 2/7/22 (lower count) and Friday 1/7/22 (higher count)*

# What highway characteristics have affected e-scooter operation and safety?

- Good quality infrastructure would provide space for all types of street user and would reduce, or even eliminate, conflicts (ITF, 2020)
- In Bristol, falls are the most reported cause of injury at 71-87% (Quandil, unpublished and Aurora *et al*, 2021) with collisions with a motor vehicle being 8% and 14%
- Our observations corroborate this with the majority of e-scooter (7/9, and cyclist 4/5) dismounts occurring on separated cycle infrastructure
- Suggests scope to improve Bristol's cycle infrastructure
- Sites 1 and 2 with good infrastructure have lower rates of footway riding
- Fault for passing too close to parked vehicles usually rests with the rider
- Sometimes infrastructure, e.g., a cycle lane places riders too close to parked vehicles

# How does the safety of riding an e-scooter compare with cycling?

## How is the safety & comfort of road users impacted by e-scooters?

- Significantly fewer e-scooter near-misses with motor vehicles and pedestrians relative to cycles, based on flow
- E-scooters are under-represented in evading action with motor vehicles
- No difference was found with cycles for evading action with pedestrians
- Proportion of drivers that took action to avoid an e-scooter was significantly lower than for cyclists
- Fewer e-scooter riders ride close to parked cars than cyclists
- No difference in close passing by drivers of e-scooters and cycles
- These objectively measured findings provide an indication about potential for collision and injury, to both e-scooter riders and cyclists
- Helmet wearing rate of people presenting to hospital with injury in Bristol is around 20% (*Aurora et al, 2021*)
- We observed 9% for e-scooter riders in general (and 57% for cyclists).



# How have e-scooters impacted road network performance?

- In two days of observations presence of e-scooter riders was not seen to be impacting on the flow of general traffic
- On rare occasions presence of a rider momentarily slowed down general traffic
- Slowed motor vehicles were quickly able to catch up with the general flow of traffic
- Then impeded by the volume of general traffic and not the presence of e-scooters
- Increasing the proportion of small agile vehicles may enhance the quality of the flow, reduce congestion and delay
- Certainly, increases the throughput of people on links and at junctions

# Conclusion

- High no. of near-misses will likely deter many riders from wanting to ride in the carriageway
  - May explain relatively high level of footway riding - 5% for cyclists & 6% for e-scooters
- 14 dismount incidents & three injuries were observed (11 on separated infrastructure)
  - May be linked with infrastructure not designed to current design standards
- Double (two-up) riding was observed 49 times, representing 0.3% of observed e-scooters
- 25% e-scooter riders and 24% cyclists passed a red signal at signal-controlled locations

**Separated cycle infrastructure attracts e-scooter riders, but poor layout design & signal staging/phasing can negatively affect rider behaviour, junction operation & safety.** Such designs cause riders to take their own decisions on how to behave when undertaking movements not formally accounted for by the designer. Were appropriate infrastructure to be provided, **micromobility has the potential to help mitigate the risk of motor vehicle traffic** by spurring a mode shift from private cars, taxis & motorcycles.

# Dismounts in 36 hours of observations across eight sites

- E-scooter riders were forced to dismount nine times resulting in two injuries
  - Majority of e-scooter (7/9) dismounts occurred on separated cycle infrastructure
  - Eight of the e-scooter dismounts involved another e-scooter
  - The other dismount was an interaction with a cyclist
  - The two injuries were for e-scooter interacting with other e-scooters
- Cyclists were forced to dismount five times resulting in one injury
  - Majority of cyclist (4/5) dismounts occurred on separated cycle infrastructure
  - One involved a pedestrian, one an e-scooter rider, one another cyclist and one with a car driver
  - The one injury to a cyclist was a collision with an e-scooter



*Two riders were forced to dismount close to Site 6 on 5/7/23 following an interaction between an e-scooter and this cycle*

## References

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