Contents of this slide pack

- The analysis presented in this slide pack is preliminary and has yet to be subjected to peer review.

- **If you wish to use or cite any of the findings, please first contact i.Philips@leeds.ac.uk for the latest results and citation.**

- Outputs will be regularly uploaded on to the project website https://blogs.brighton.ac.uk/elevate/

ELEVATE

Innovative Light ELEctric Vehicles for Active and Digital TravEl

Dr Ian Philips
Dr Sally Cairns
Dr Alice de Sejournet

Presentation to the Department for Transport, 4/12/24

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Institute for Transport Studies

UNIVERSITY OF OXFORD

University of Brighton

https://environment.leeds.ac.uk/transport-social-political-sciences/dir-record/research-projects/1690/elevate

ELEVATE

Project Start Date:	01.06.21
Project Finish Date:	31.05.26
Value:	£1.7M

Multi institution project with international collaborators

Aims to understand more about e-micromobility impacts on:

1. Future uptake
2. Barriers and enablers
3. Physical and mental health & wellbeing
4. Carbon reduction potential
5. Implications for industry, policy, and end users

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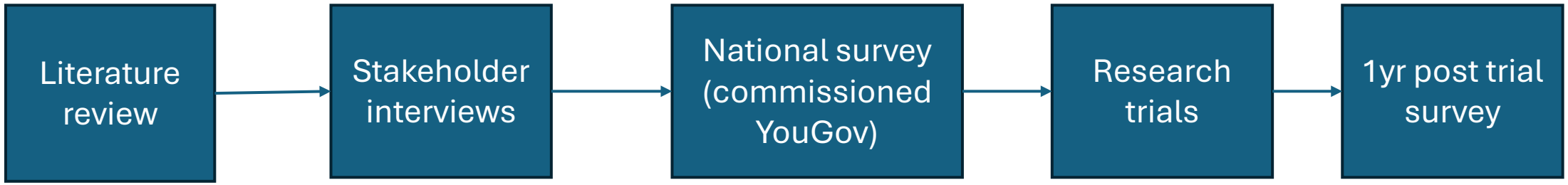
Overview of our approach



Complex mixed method approach:

Philips, I.; Azzouz, L.; De Sejournet, A.; Anable, J.; Behrendt, F.; Cairns, S.; Cass, N.; Darking, M.; Glachant, C.; Heinen, E.; Marks, N.; Nelson T.; Brand, C. Domestic Use of E-Cargo Bikes and Other E-Micromobility: Protocol for a Multi-Centre, Mixed Methods Study. *Preprints* **2024**, 2024092049. https://doi.org/10.20944/preprints202409.2049.v1
(paper in peer review)

- Interested in all e-micromobility

  But

- Trials focus on e-cargo bikes
- Domestic use
- Suburbs & peri-urban
- Provincial cities
- More car dependent areas

England

438 inhabitants/km2

54 % live in (semi-) detached houses

22% of households do not own a car

Guiseley and Otley: satellite towns of **Leeds**

2158 inhabitants/km2

64 % live in (semi-) detached houses

11% of households do not own a car

Kennington: suburb of **Oxford**

4033 inhabitants/km2

50 % live in (semi-) detached houses

10% of households do not own a car

Preston Park and **Hove Park**: neighbourhoods of **Brighton**

8970 inhabitants/km2

35 % live in (semi-) detached houses

10% of households do not own a car

Source: 2021 census, NTS

Depth and breadth of data collected

Study area survey
(n_B = 422, n_L = 311, n_O = 262)

If interested in e-cargo bike trials

Potential participant survey
(n_B = 50, n_L = 36, n_O = 56)

Participants' selection

Pre-trial Consent Discussion

Confirmed participant survey
(= pre loan survey)
(n=49 households)

Confirmation interview

Summer **TRIALS** **One-month**
(n=49)

winter **TRIALS** **3-5 months**
(n=11)

1year post-trial survey
(n= 334 SAS , + 49 participants)

Weekly interviews
4 per participants
(n=+-200)

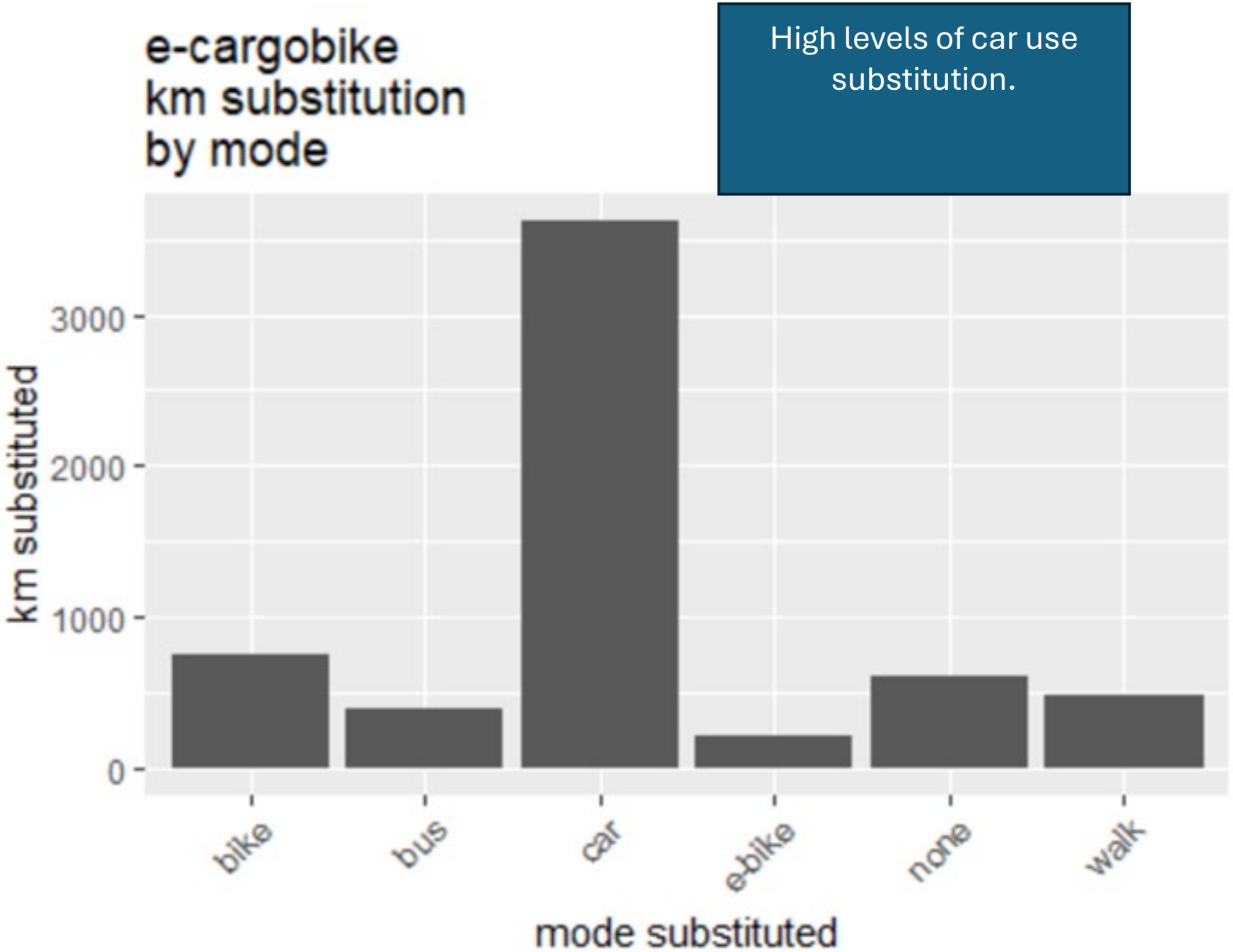
End-of-loan survey
(n=45)

Travel diaries
(n=48, one missing)

GPS tracking
(n=49)

Smart watch
(n= low; maybe 10 part.)

Other vehicle info
Odometer + vehicle mileage + ecargo bike motordiagnostic



High levels of car use substitution.

Some qualitative evidence of car use reduction

"Um, **it has,** I think, **massively reduced our mileage.** I mean, **I've barely driven these last 4 weeks at all,** ....
I think I've been averaging around 20, 23 miles a week, I wouldn't do more than that in a car so **that's,** you know, **100 miles of car travel that I haven't done,** in theory, I don't know the exact numbers but no, **for me, it's really decreased my car mileage.**"

Some further findings

1. Electric cargo bikes (ECBs) somewhere between a bike and a car – “challenge car dependent practices”
2. Could aid those experiencing forced car ownership / low mobility
3. Trials promote awareness of ECBs
4. Trials provide skills and knowledge before purchase
5. Winter trials – people ride in wet and dark and cold.
6. Long trials (3-month or more) create habit, trust, familiarity
7. We are examining where ECBs go – to inform debate on safety, infrastructure, road space etc.

The ELEVATE surveys and how they compare with the Transport & Technology Tracker

ELEVATE surveys:

- YouGov panel, May-July 2023
- Online surveys and use of 5-point scales
- English adults aged 18+
- 2000 national respondents, and c. 400 respondents in Brighton, Leeds and Oxford
- Weighted by age, gender, ethnicity, region and social grade to represent England.
- Focus on e-bikes, e-scooters, e-cargo bikes, and all other transport modes

Transport & Technology Tracker:

- Ipsos panel, Dec 2023 (Wave 11)
- Online surveys and use of 5-point scales
- English adults aged 16+
- 3,622 national respondents
- Weighted by age, gender, ethnicity, region, IMD quintile, education and number of adults in household to represent England.
- Focus on e-bikes, e-scooters, and a range of other new transport technologies

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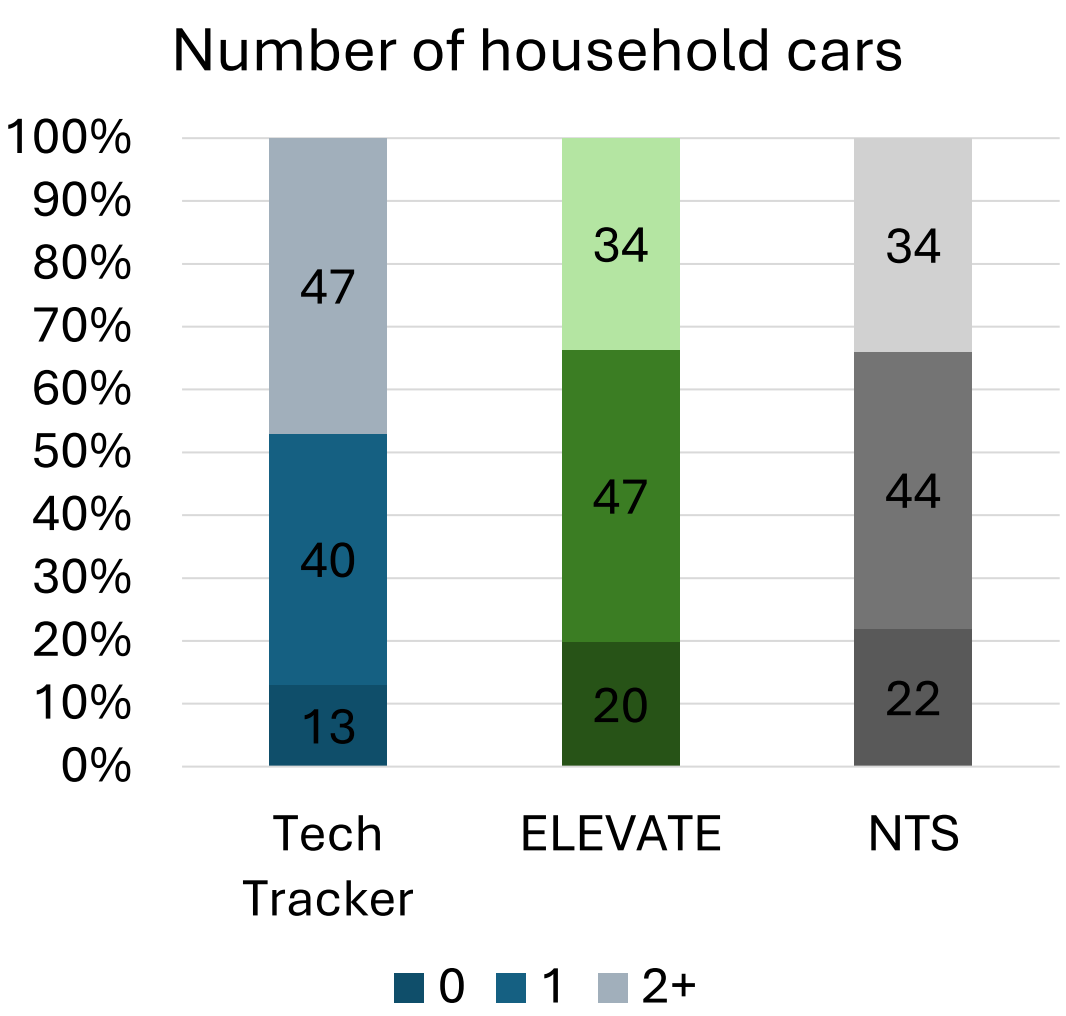
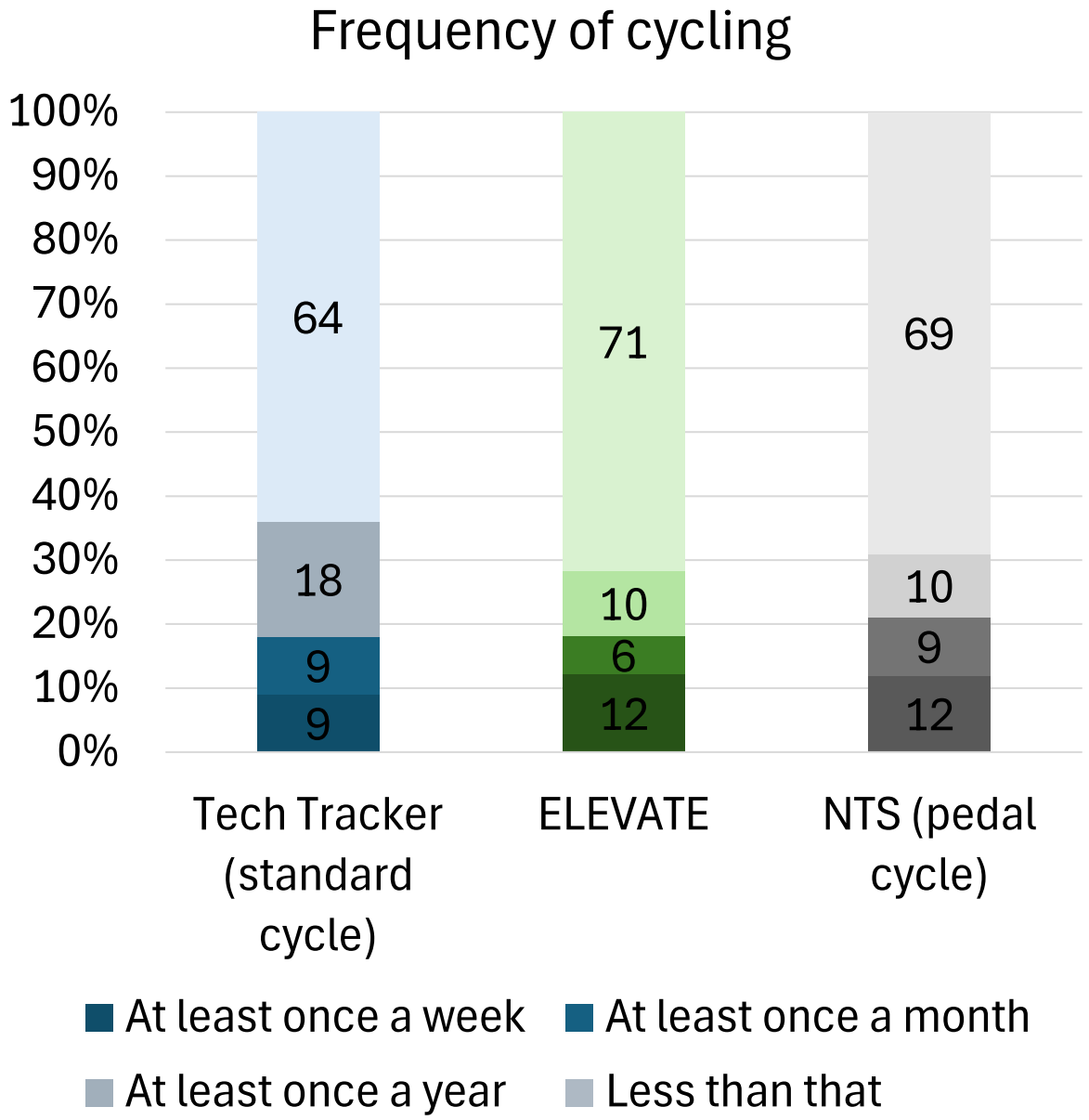
Car ownership and cycle use





NTS: 21,758 households in 2023, surveyed face-to-face

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Electric scooters

Transport & Technology tracker:

- Do you personally own an electric scooter?

  2% own

- How often, if at all, do you personally use an electric scooter in the UK?

  6% at least once a month;
  11% at least once a year

- How likely or unlikely are you to purchase an e-scooter in the next 12 months?

  4% very or fairly likely to do so

ELEVATE:

- How many e-scooters does your household own (or lease)?

  5% own or lease

- How often, if ever, do you use an e-scooter?

  6% at least once a month;
  10% at least once a year

NTS:
1% at least once a month;
4% at least once a year

- How likely is your household to buy an e-scooter (or another e-scooter) in the next 12 months (if it became legal for privately-owned e-scooters to be ridden where you can ride a standard pedal cycle)?

  8% very or somewhat likely to do so

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Electric cycles

Transport & Technology tracker:

- How often, if at all, do you personally use an e-cycle?

6% once a month or more;
10% at least once a year

- How likely or unlikely are you to purchase an e-cycle in the next 12 months?

3% already own an e-cycle
5% very or fairly likely to do so

- How likely or unlikely would you be to use an e-cycle share scheme if it was available in your area?

10% very or fairly likely to do so

ELEVATE:

- How often, if ever, do you use an e-bike?

8% at least once a month;
12% at least once a year

- How many e-bikes does your household own (or lease)?

9% own or lease

- How likely is your household to buy an e-bike (or another e-bike) in the next 12 months?

9% very or somewhat likely to do so

- How often, if ever, do you hire any kind of cycle from an on-street bike share scheme or bike shop?

8% done so in the last 12 months

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Variations in proportions of different groups *using an e-cycle at least once a month*

Transport & Technology tracker:

England: 6%

ELEVATE:

England: 8%

Regional variation

From Yorkshire & The Humber (3%) to London (11%)

From East of England (4%) To London (15%)

Smaller-scale variation

Oxford: 13%

Brighton: 5%

Leeds: 4%

Both surveys also show higher levels of use by younger age groups (<35) and those of non-white ethnicity

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Lack of knowledge, but potential interest…

Transport & Technology tracker:

- **26% know a 'great deal' or 'fair amount' about e-cycles**; 48% know 'a little'; and '21%' have heard of them but know nothing about them. (2% don't know.)

ELEVATE:

- **27% know someone personally** (e.g. friends, family, neighbours, work colleagues) **who regularly rides an e-bike**

- **31% would be very or fairly interested in the free loan of an e-bike for a month; 17% would be somewhat interested**; and 49% would be not very or not at all interested. (4% don't know or prefer not to say.)

Of those who don't use an e-bike at least once a month:

- **25% somewhat or strongly agree that 'I see myself as the kind of person who might regularly ride an e-bike'**; 21% neither agree nor disagree; 49% somewhat or strongly disagree. (5% don't know or prefer not to say.)

- **33% somewhat or strongly agree that 'people who are important to me would approve of me riding an e-bike';** 34% neither agree nor disagree; 22% somewhat or strongly disagree. (12% don't know/ prefer not to say.)

Broad support for addressing climate change, car use and promoting e-bikes

ELEVATE:

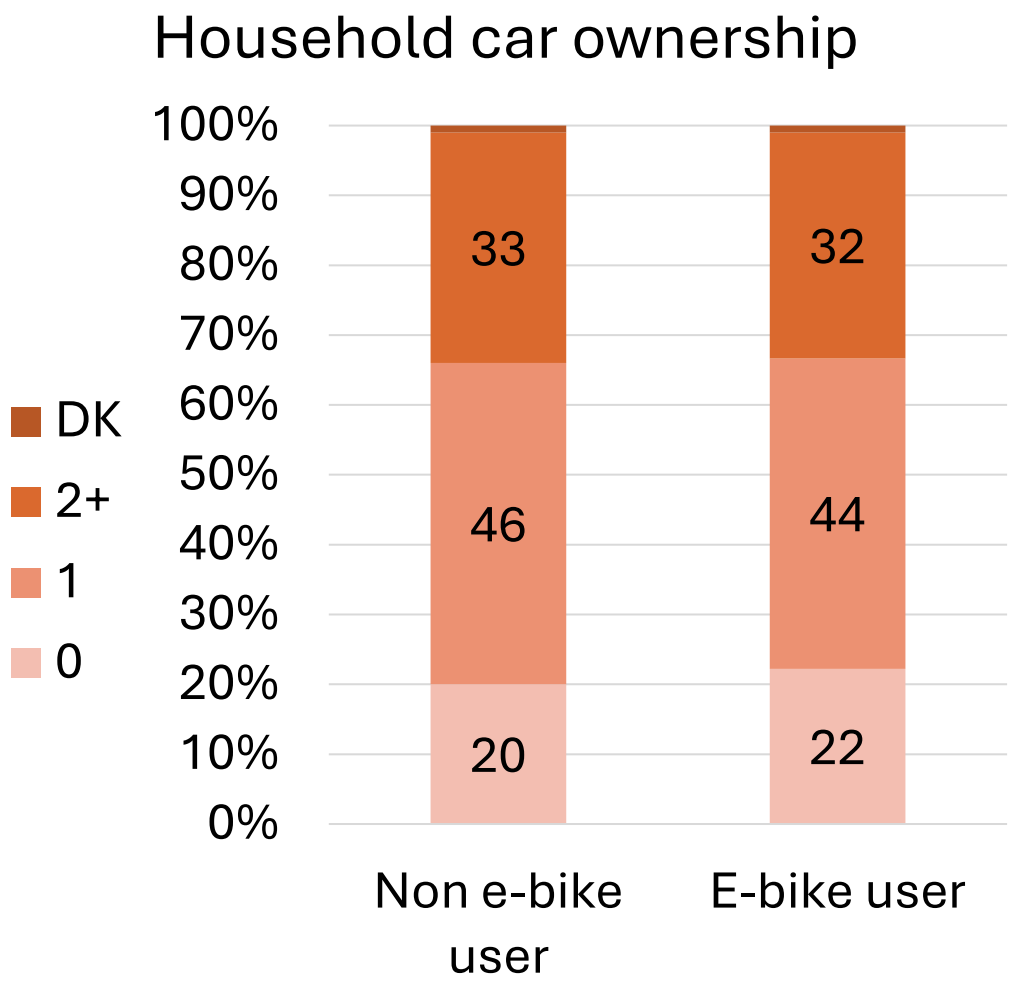
- **56% are very or fairly concerned 'about climate change, sometimes referred to as global warming'**; **22% are somewhat concerned**; 18% are not very or not at all concerned. (5% don't know or prefer not to say.)

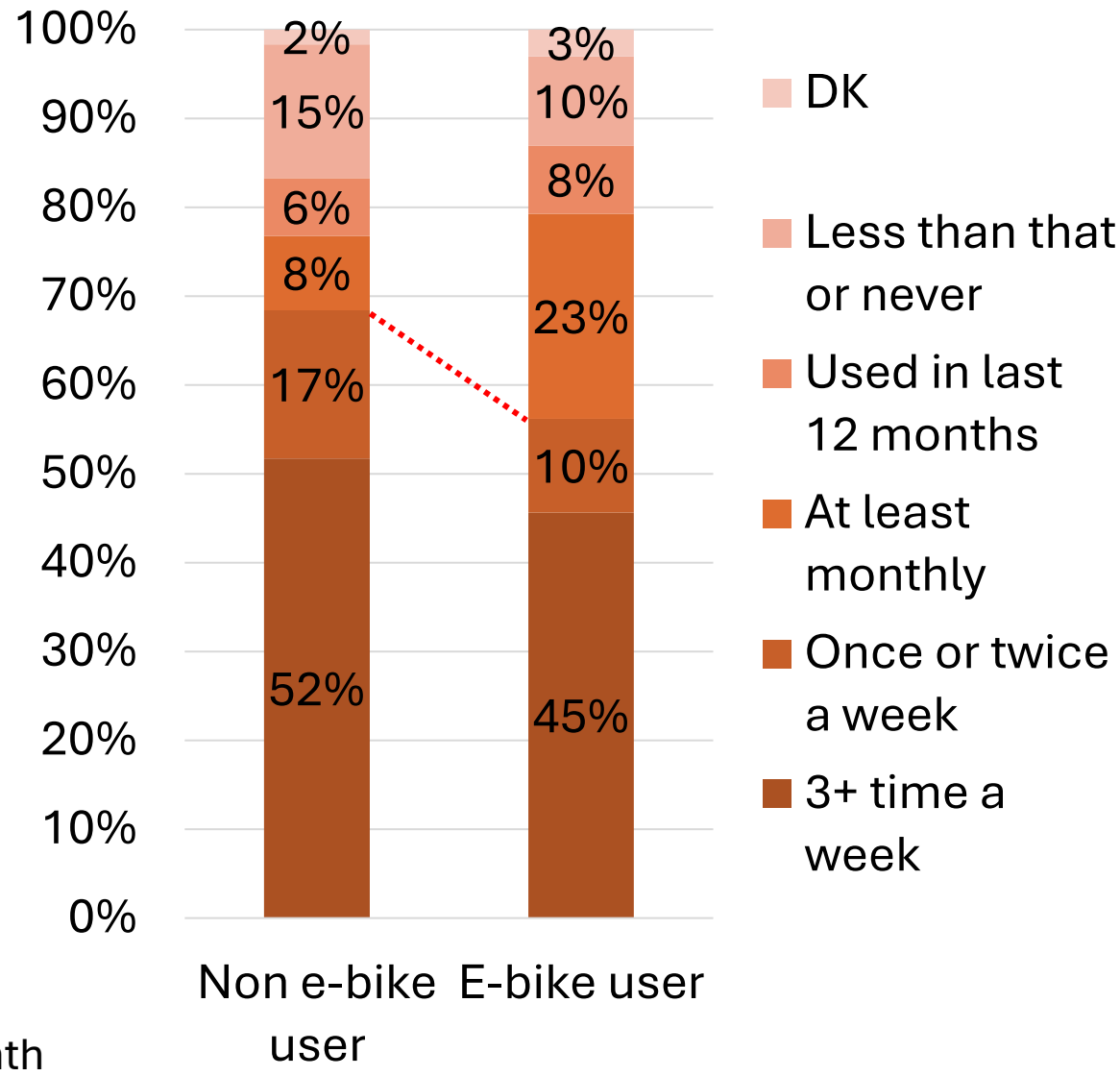
- **Nearly twice as many drivers chose 'I drive, but try to minimise my car use'**, compared to 'I drive, and am not interested in reducing my car use'

- **69% somewhat or strongly agree that 'E-bikes can be a realistic alternative for some car journeys'**; 14% neither agree nor disagree; 13% somewhat or strongly disagree. (4% don't know or prefer not to say.)

- **53% somewhat or strongly agree that 'The Government should do more to support e-bike use'**; 25% neither agree nor disagree; 15% somewhat or strongly disagree. (6% don't know or prefer not to say.)

Links between e-bikes and car use (ELEVATE)





User defined as someone using an e-bike at least once a month

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Significance of pricing

Transport & Technology tracker:

- **68% chose 'they are expensive to buy'** as a disadvantage of e-cycles - the most commonly chosen disadvantage.

ELEVATE (national survey):

- For those not owning an e-bike, **only 36% somewhat or strongly agree that 'my household could easily afford to buy an e-bike'.** 42% somewhat or strongly disagree. 21% neither agree nor disagree, don't know or prefer not to say.

ELEVATE (2024 neighbourhood surveys):

- **57% somewhat or strongly agree that "Cost is a very important factor in whether my household will buy an e-bike or e-cargo bike in the next 12 months."** 28% somewhat or strongly disagree. 15% neither agree nor disagree, don't know or prefer not to say.

- **If there were vouchers** (from the Government) **that your household could put towards the cost of an e-bike in the next 12 months**, how likely would you be to apply for them?
  £250 voucher – 38% very or somewhat likely
  £500 voucher - 56% very or somewhat likely

Interviewees highlighted: *increasing the Cycle to Work scheme threshold; extending it to those on low incomes/not working; removing VAT on bikes; interest-free loans for payment*

Significance of theft, battery safety and cycling conditions

Transport & Technology tracker:

- **57%** chose **'likely to be stolen'** and **40%** chose **'risk of battery fire'** as disadvantages of e-cycles.

ELEVATE:

- For those not owning an e-bike, **71% somewhat or strongly agree that 'if I owned an e-bike, I would worry about it getting stolen (at home or when out)'.** 11% somewhat or strongly disagree. 18% neither agree nor disagree, don't know or prefer not to say.

- For all respondents, **36% somewhat or strongly agree that 'using an e-bike is dangerous in my neighbourhood'. 30% somewhat or strongly disagree.** 34% neither agree nor disagree, don't know or prefer not to say.

But

- On a scale of 1-5, **only 19% are very or fairly confident 'cycling on roads in your local area',** 10% are somewhat confident, whilst 57% are not very or not at all confident and 9% don't know/prefer not to say.

Interviewees highlighted *importance of speed limits (e.g. increase e-cargo bikes to 20mph and introduce more 20mph zones)*.

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Summary of key points from the survey analysis

- Transport & Technology Tracker and ELEVATE surveys both provide data on e-bikes and e-scooters – offering opportunities to compare and contrast results

Potential interest in e-cycles:

- Both surveys show substantial variations in uptake (including places and people who might be more interested than average)

- Knowledge gaps and interest in trials – only 26% know at least a fair amount; nearly half of ELEVATE respondents were at least somewhat interested in monthly loans.

- Majority concerned about climate change, and 2/3rds of drivers trying to minimize car use

- Majority believe e-bikes can be a realistic alternative for some car journeys and would like to see more Government support for them.

- Evidence that regular e-bike users use cars less than non-users.

- Key factors deterring uptake include price, theft, concerns about battery safety and road conditions.

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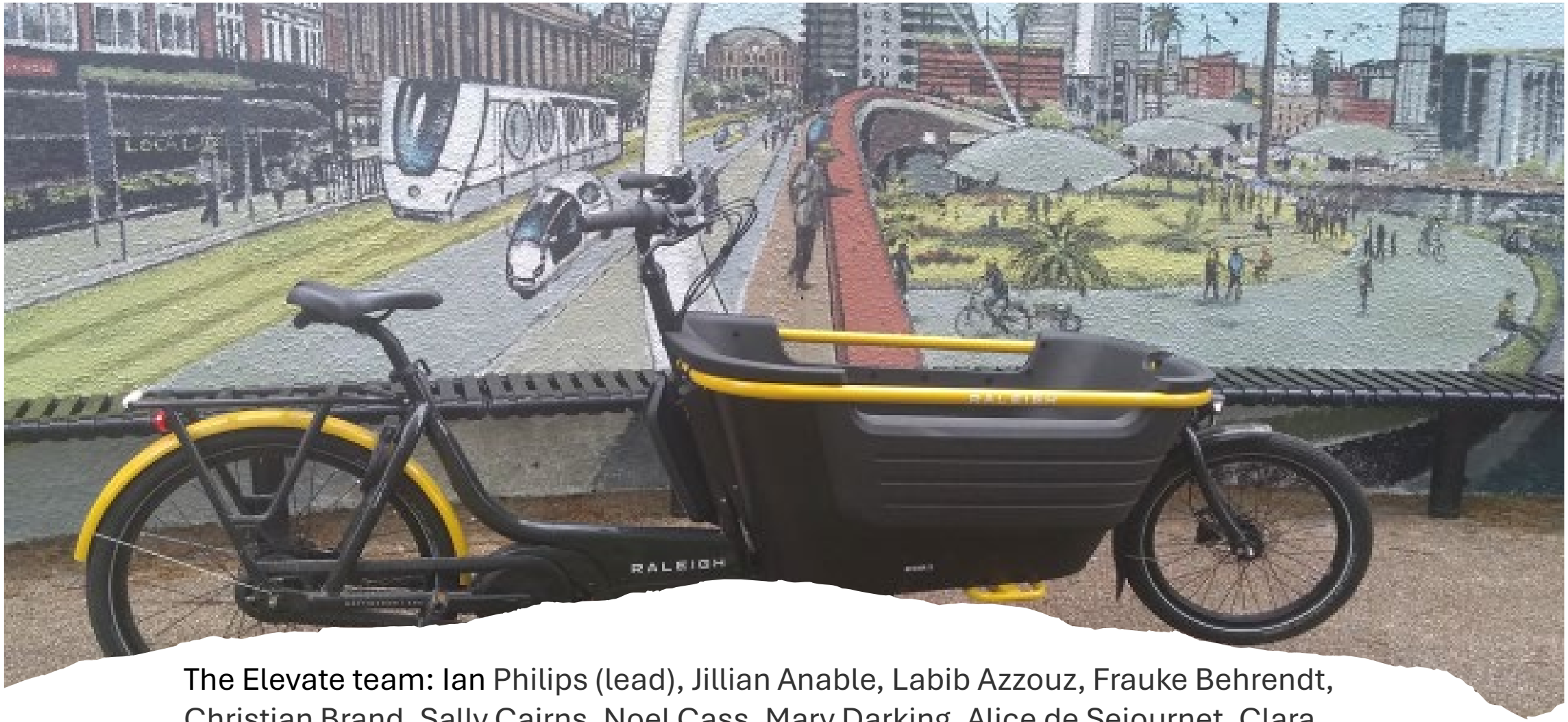
Outputs: https://blogs.brighton.ac.uk/elevate/research-outputs/



The Elevate team: Ian Philips (lead), Jillian Anable, Labib Azzouz, Frauke Behrendt, Christian Brand, Sally Cairns, Noel Cass, Mary Darking, Alice de Sejournet, Clara Glachant, Eva Heinen, Pirjo Johnson, Nick Marks and Theresa Nelson.

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