

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 Project:

Overview of key findings

Active Travel England webinar
Feb 2026
Ian Philips



EPSRC

Engineering and Physical Sciences
Research Council



UNIVERSITY OF LEEDS
Institute for Transport Studies



University of Brighton



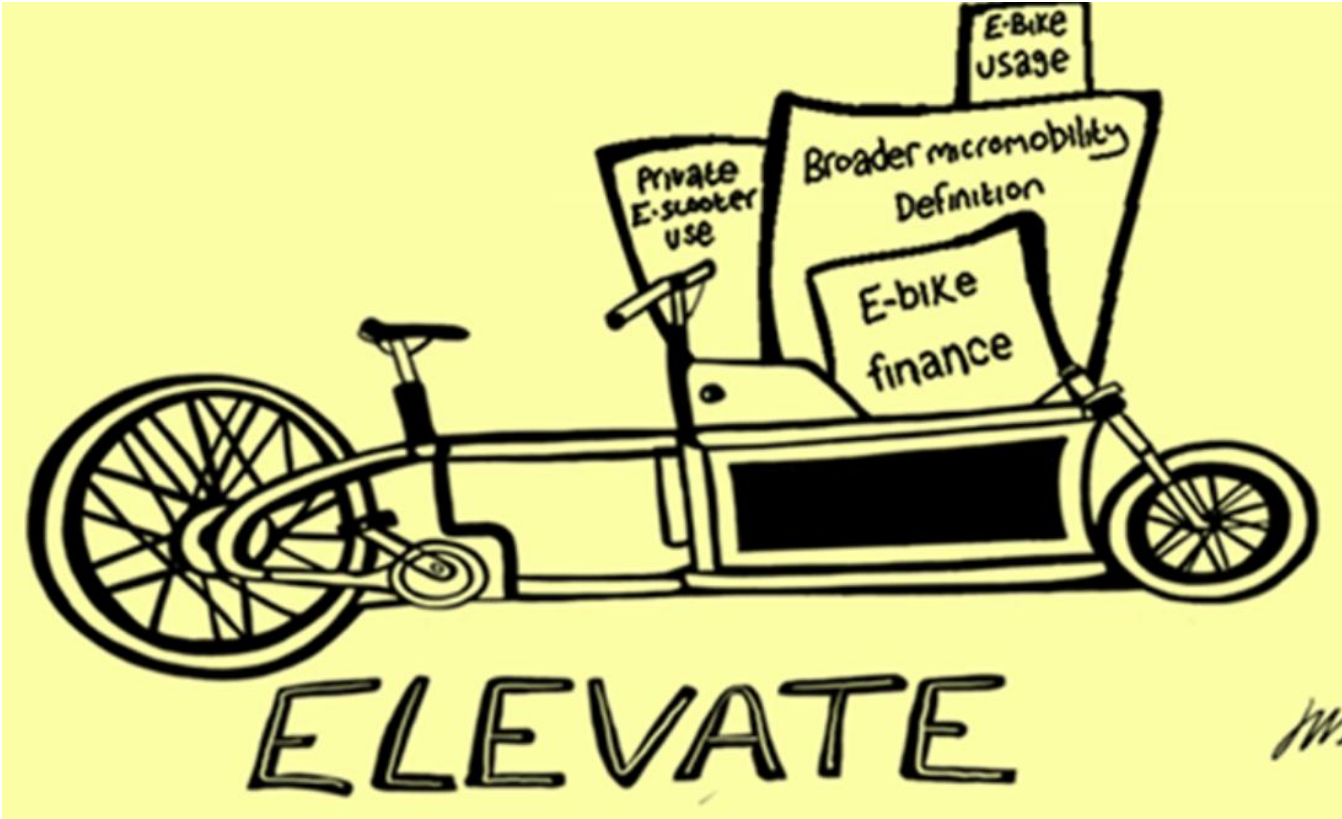
ELEVATE

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:

- Future uptake
- Barriers and enablers
- Physical and mental health & wellbeing
- Carbon reduction potential
- Implications for industry, policy, and end users



Biggest work-package:

- Surveys and Trials of household e-cargo bike use in suburbs outside London

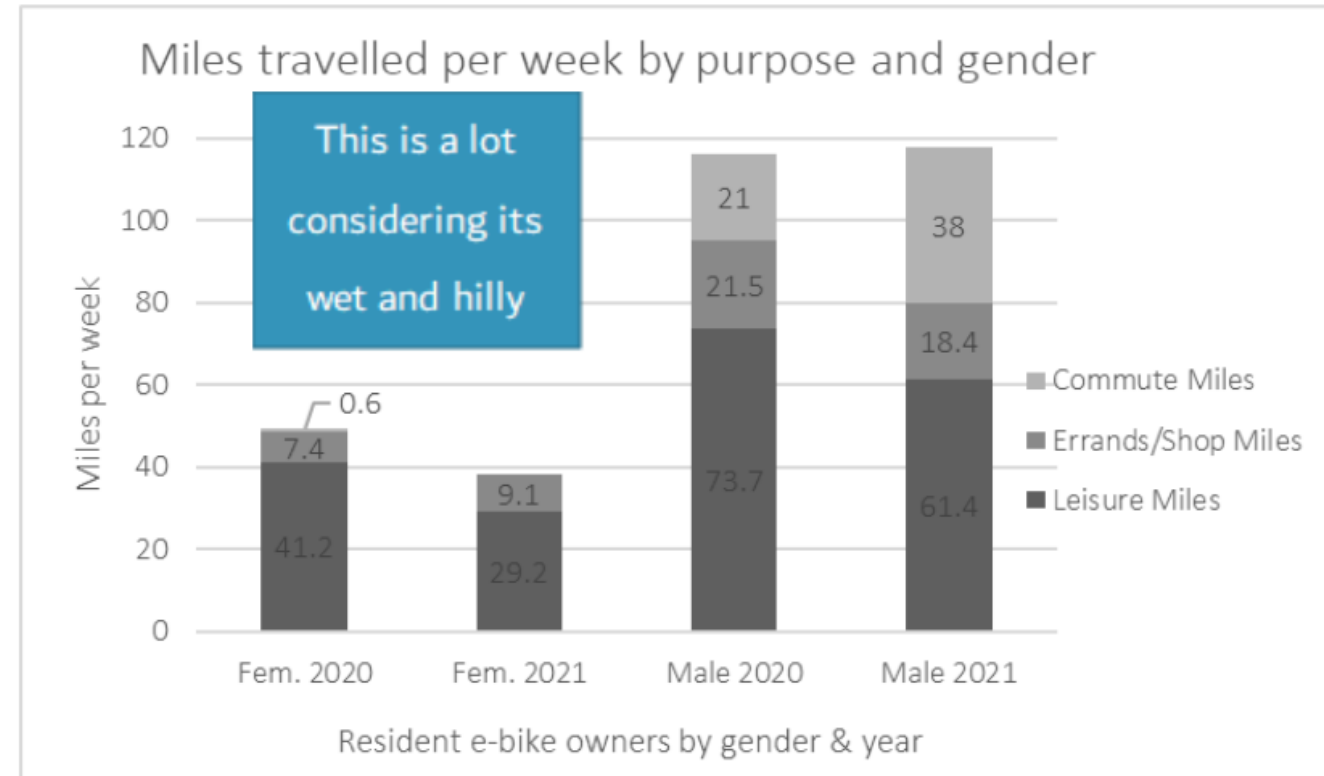
Other work

- E-bike use in the Lake District,
- Finance of e-bikes
- Private use of e-scooters

E-bikes in the Lake District

Also working on a report on potential for **rural e-cargo bike use**

- People ride up hills where **its wet!**
- **Car substitution** for multiple purposes
- Want **secure storage / charging**
- Interested in multi-modality
- Many **amenable to some car restraint**



Blog: [What do people have to say about e-bike use and ownership in the Lake District National-Park?](#)

Paper: Philips I, Brown L, Cass N. 2024. E-bike use and ownership in the Lake District National-Park UK. Journal of Transport Geography. <https://doi.org/10.1016/j.jtrangeo.2024.103813>



E-bike finance and access to e-bikes workshop

- Does simply increasing access to cycles increase cycling?
- Is affordability a 'real' barrier to cycle ownership?
- Are financial incentives effective in encouraging people to cycle more?
- Does the chance to 'try before you buy' alter perceptions of value for money and subsequent purchasing of cycles?
- Are leasing schemes popular and financially viable – and what are their pros and cons compared to personal ownership?
- What is the scope for increasing bike share schemes – and how do they interact with ownership?
- What are the policy priorities for local and central Government?



[Workshop summary](#)

Finance ways forward



[Workshop summary](#)

- Reform of Cycle to Work Scheme
- Expand access through incentives and visibility
- Support maintenance and leasing
- Strengthen Industry messaging and unity
- Strategic framing for National Level Advocacy
- Relevant blogs
 - [E-cargo bike access: Total Cost of Ownership, the appeal to second car owners, and leasing](#)
 - [Don't subsidise cycling but do subsidise flying: risks to decarbonisation and its co-benefits](#)

Elevate National Survey

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



Paper prepared for submission

Elevate National Survey

- 11% of households owned an e-bike, e-cargo bike and/or e-scooter; 9% of adults were using one at least monthly. (higher uptake than electric cars)
- 47% of users were using a car 3+ times a week, compared to 55% of non-users, even though levels of car ownership were similar.
- Over 50% of adults were interested in trying out an e-bike, e-cargo bike and/or e-scooter, either for a few minutes in a park or via a free monthly loan.
- 60% of non-users thought e-scooters were dangerous to use in local neighbourhoods compared to less than 40% for e-bikes and e-cargo bikes.
- On average, e-micromobility users were undertaking more active travel than non-users, utility cyclists and frequent walkers

Elevate National Survey



Broad support for addressing climate change, car use and promoting e-bikes amongst National Survey respondents Users and non-users

- **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’**
- **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.)**

Research trials: Household e-cargo bikes in provincial suburbs



- Interested in all e-micromobility
- But
- Trials focus on e-cargo bikes
- **Research Gaps**
- 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

Kennington: suburb of Oxford



4033 inhabitants/km²



50 % live in (semi-) detached houses



10% of households do not own a car

Research trials



Guiseley and Otley: satellite towns of Leeds



2158 inhabitants/km²



64 % live in (semi-) detached houses



11% 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

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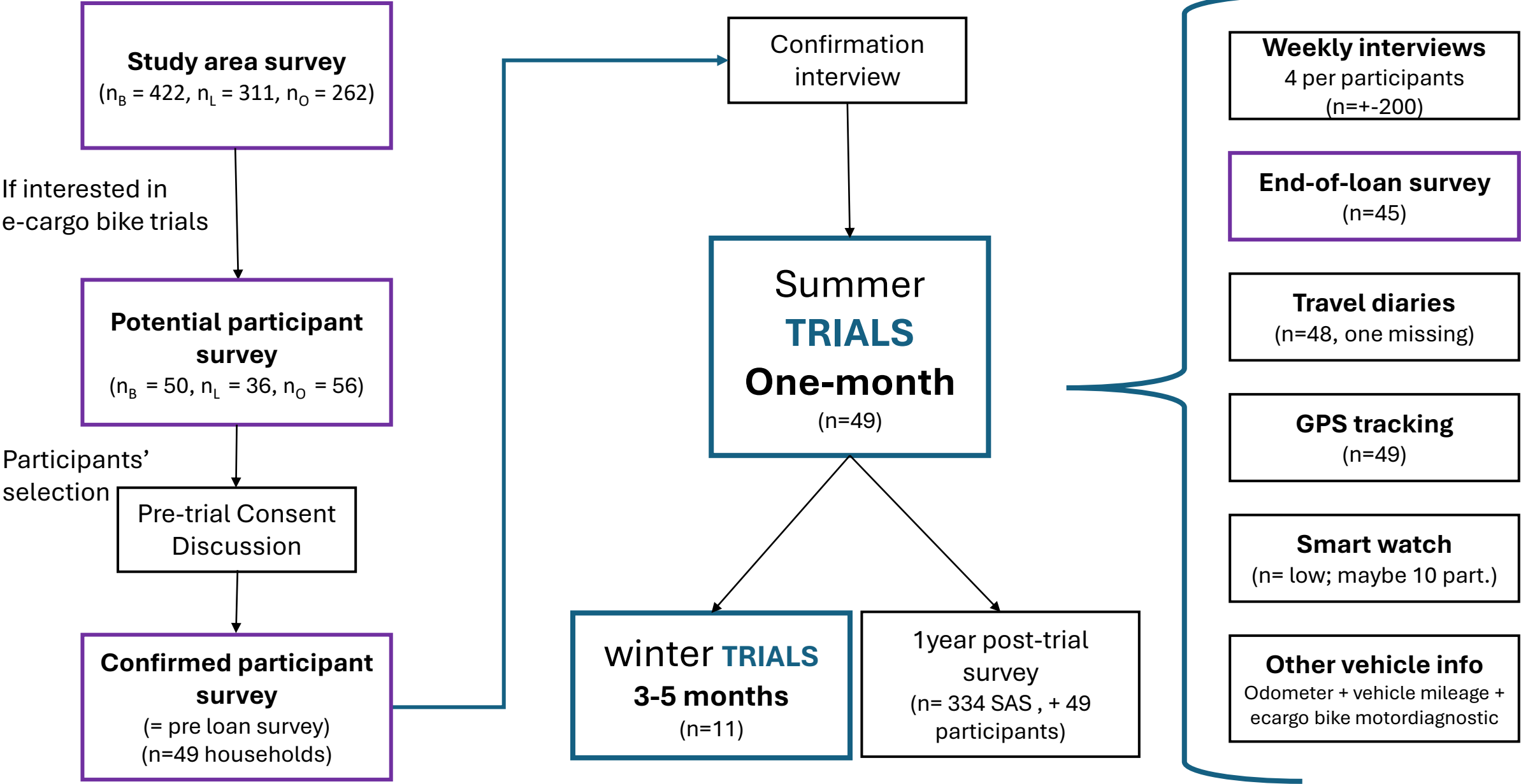

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STUDIES UNIT



University of Brighton


ELEVATE



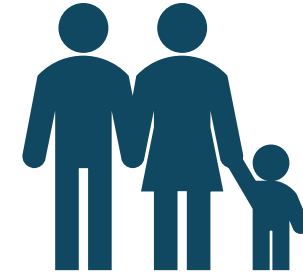
Who are our participants ?



- 67% within age range **35-49**
- Most are **employed**
- **Higher education** degree



- High **car use and ownership**
- But intent to **reduce** it
- 84% **cycle** regularly



- 60% have **children**
- 51% children **under 10 years old**

Usage



Days of use

2 to 29
mean 13 days or
3 days/week



Number of trips

2 to 50

Mean 20

Mean 5 round
trips/week



Total distance

15 to 345km

Mean
38-42 km/week



Trip length

1km to 76km

Most under 25km

Mean 8km / round
trip



Trials: Carrying children

54% of trips (49% distance) carried children

Oxford - 62% trips/53% distance

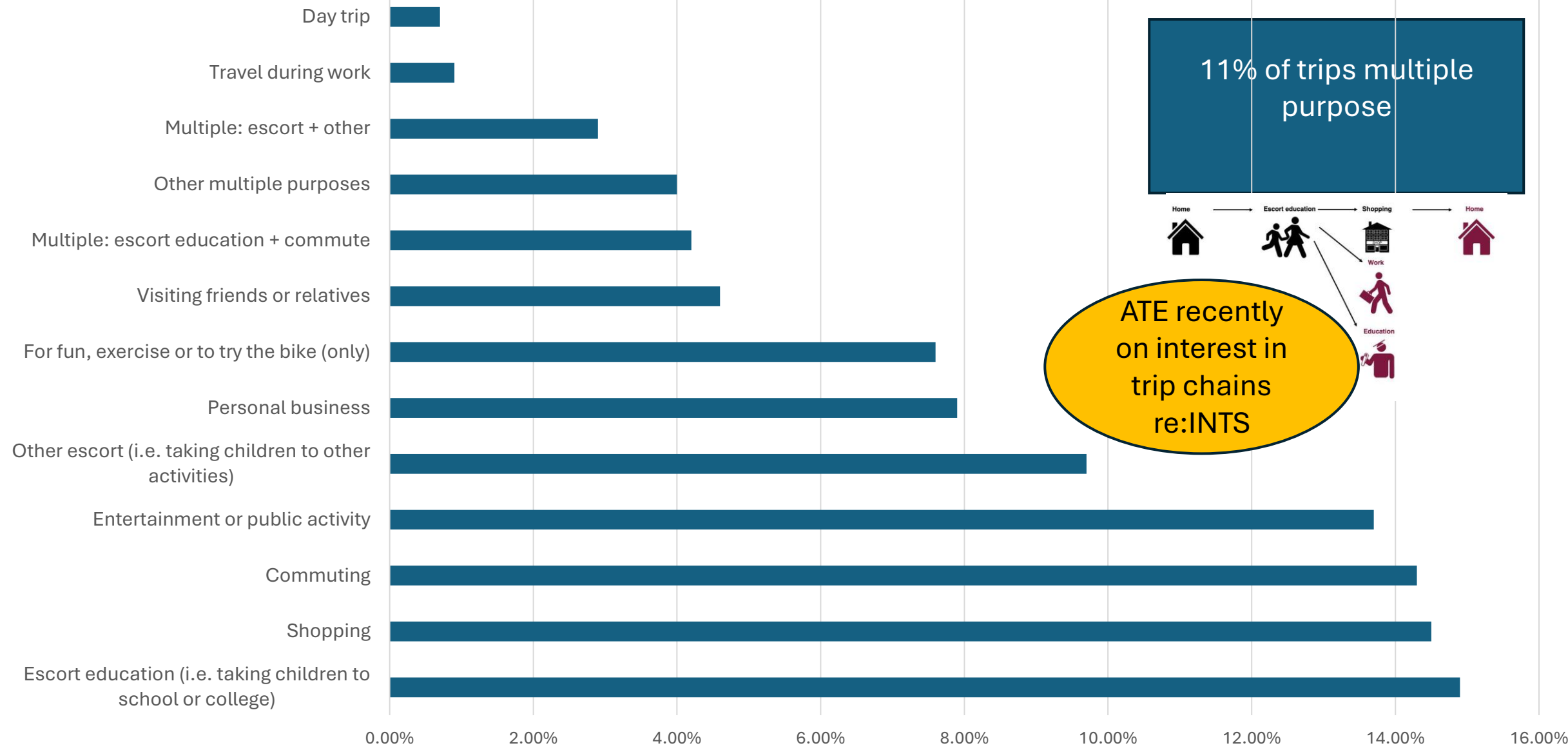
Leeds – 44% trips/42% distance

9 households (19%) no trips with kids

Trip purpose

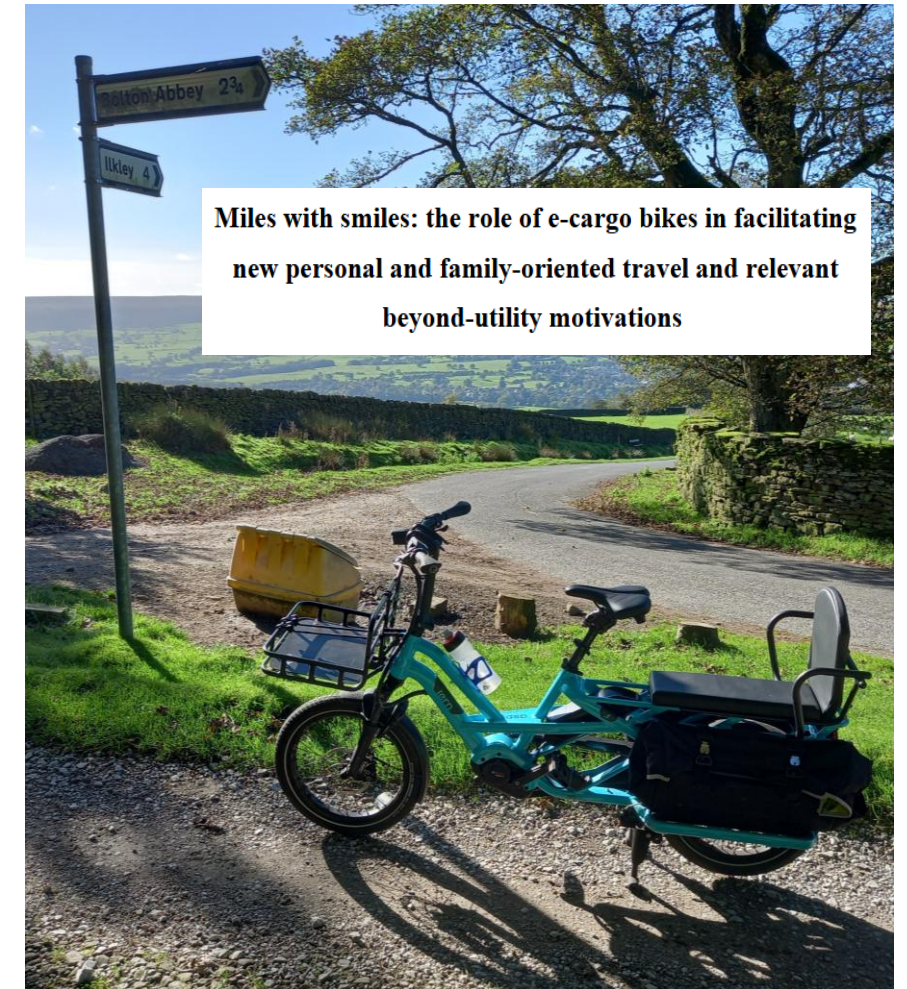
Lots of different trip purposes

Percent of trips



10% New Trips: Induced demand or something better?

*“They promoted **well-being**, offered **therapeutic outdoor experiences**, disrupted daily routines, and **supported personal growth, freedom, and autonomy**. Caregivers particularly valued ECBs for the control, **spontaneity**, and **flexibility** they provided in managing complex household schedules. Parents’ and **children’s enjoyment, curiosity**, and **sense of adventure** encouraged additional travel, transforming routine journeys into playful and memorable family experiences. New ECB travel enhanced **family bonding**, strengthened intra-household cohesion, and increased children’s willingness to participate in activities that might otherwise have been resisted. Households used ECBs to cultivate sustainable travel identities, model pro-environmental behaviors, and **instill active mobility norms in children**”*

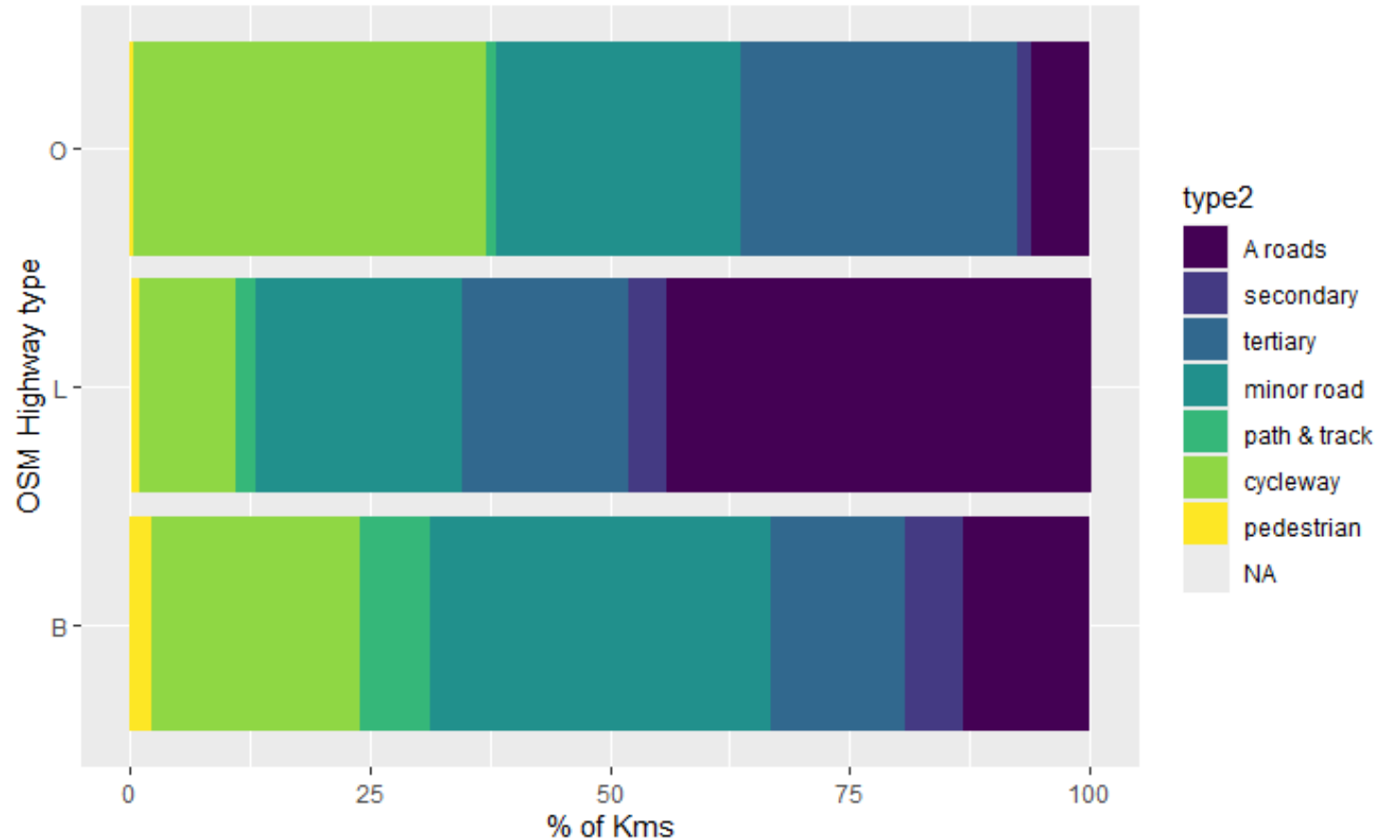


Miles with smiles: the role of e-cargo bikes in facilitating new personal and family-oriented travel and relevant beyond-utility motivations

Paper: Miles with Smiles, Azzouz et al <https://doi.org/10.1016/j.tbs.2025.101217>

Where do e-cargo bikes go?

- On main roads where infrastructure is poor.
- Bike size and motor helps rider confidence in traffic



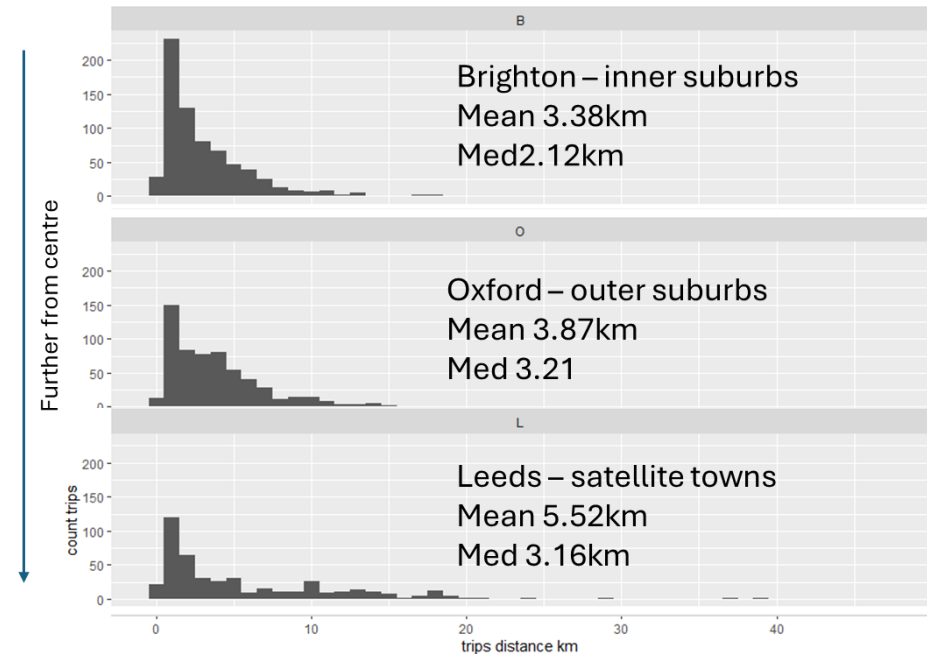
Paper in review

Speed varies with route type

OSM tag	type	mean speed km/h
trunk	A Roads	23.4
primary	A Roads	22.8
secondary	secondary	21.9
tertiary	tertiary	20.6
unclassified	minor road	19.3
residential	minor road	18.1
service	minor road	15.4
cycleway	cycleway	19.9
pedestrian	pedestrian	17.9
bridleway	path & track	17.5
footway	path & track	16.9
path	path & track	14.9
track	path & track	13.8

~Busy roads

~ Car restricted



Hills don't stop e-cargo bikes

City	mean height gain per trip (m)	mean height gain per km travelled (m)
Brighton	54	16
Oxford	36	9
Leeds	70	13

Trials: Reasons for use and non-use

Reasons for use

Practical journey purposes
Fun
Exercise
Trying out the bike

Reasons for non-use

Concerns about routes
Safety
Security
Parking at unfamiliar destinations

10% of trips were 'new trips'

"it's allowed us to do more things outdoors than... we would have done previously and to go to places that we wouldn't have gone to together", (male_35-39_Oxford).

Perceived and experienced barriers

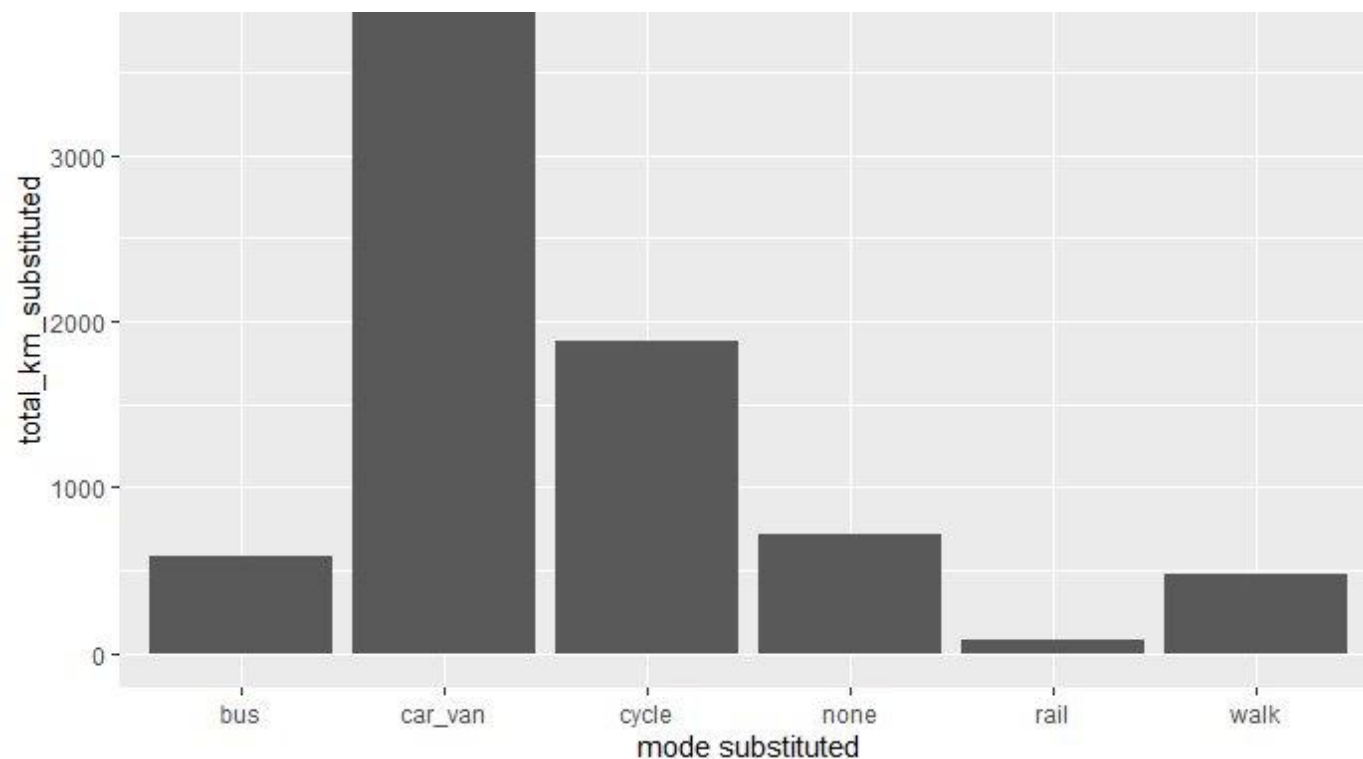
- Trials give experience
- Experience overcomes / reduces perceived barriers
- Some persist spatial barriers persist: too much car traffic

Spatial barriers	Material barriers	Societal barriers	
<ul style="list-style-type: none"> • Lack of cycling infrastructure • Fear of conflict with active modes • Fear of conflict with cars • Lack of clarity on where they should be ridden (Where do they fit) • Infrastructure not adapted to the size of e-cargobikes • Concerns about passengers (children) safety • Lack of secure parking 	<ul style="list-style-type: none"> • Logistic-only vision of the e-cargo bikes • Cost • Difficult to store • Difficult to manoeuvre • Theft • Battery safety 	<ul style="list-style-type: none"> • Not for me / lifestyle • Lack of awareness • Image associations • Battery production • Replace other active modes • Not being fit enough • Not legitimate exercises 	<div> <div>Most commonly reported</div> <div></div> <div>Least commonly reported</div> </div>

• Glachant, C., Séjournet, A. de, Philips, I., Behrendt, F. and Cairns, S. (2025). Experienced and Imagined Barriers to E-Cargo Bike Adoption: Findings from Trial Loans in the UK. *Preprints.org*. doi: <https://doi.org/10.20944/preprints202508.0437.v1>

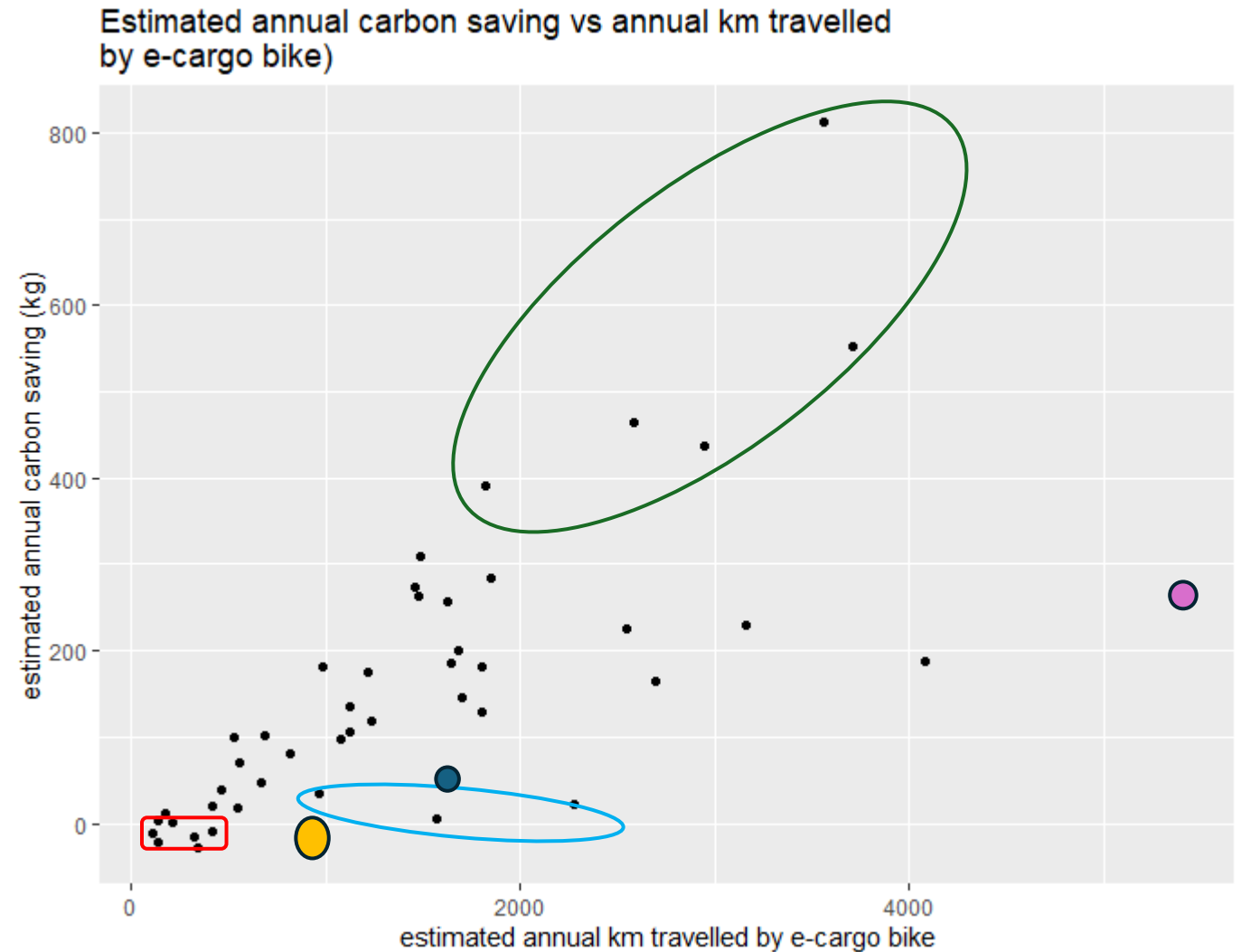
Mode substitution

- **50-52%** of trips and miles replaced **car/van** trips
- Reinforces this mode in private hands **does not** primarily **replace bus** or **cycle/walk**
- **Not in conflict** with sustainable travel priorities and co-benefits:
 - **Carbon** implications being worked out
 - **Health** benefits



Carbon savings from substitution

- E-cargo bikes save carbon but not if they stay in the shed!
- Some super savers
- Some Oxford cyclists
- Someone who had their bike stolen
- Very high usage participants



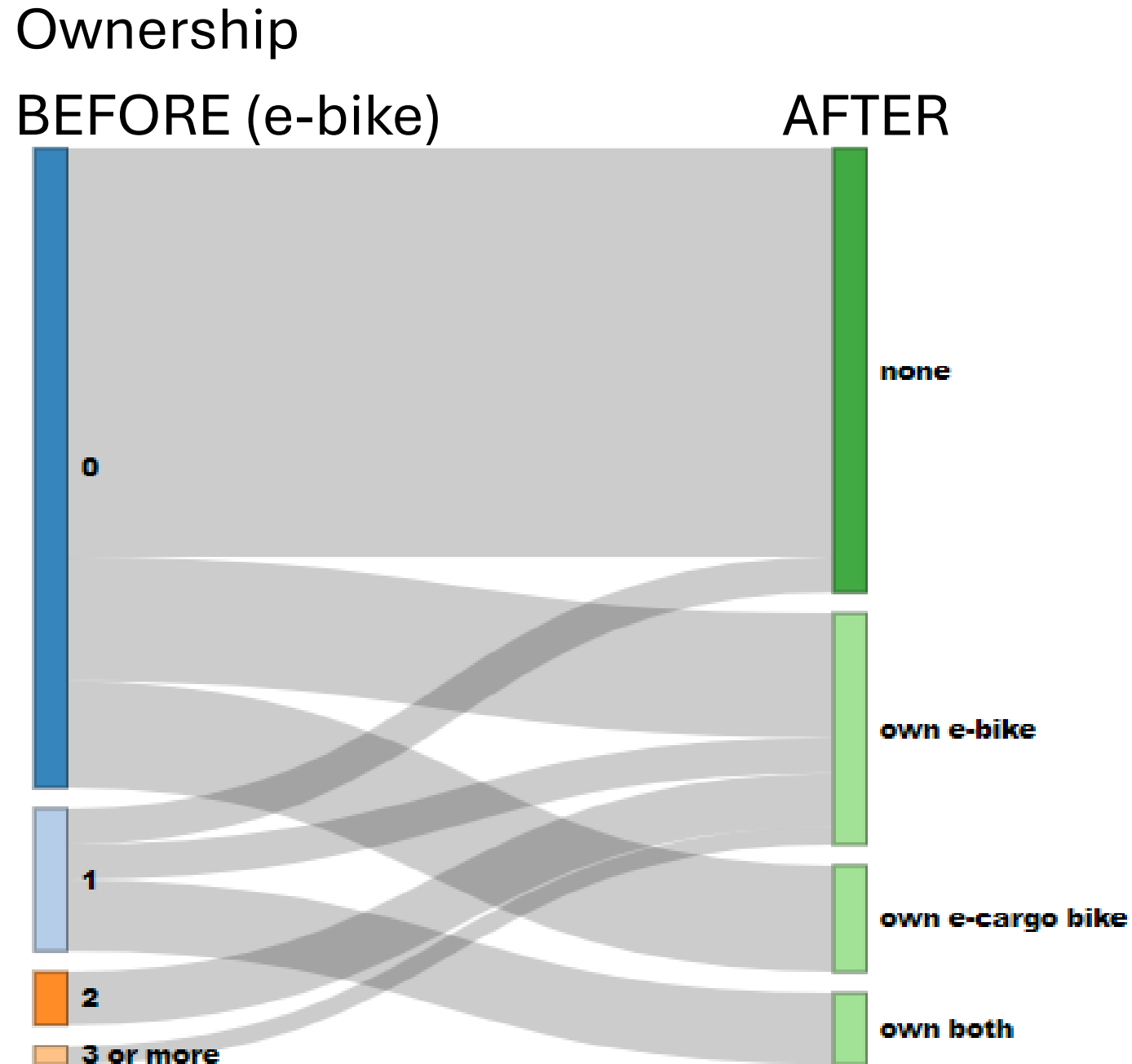
Change in e-bike ownership?

+10 e-cargo bike

+ 7 e-bike owners

+ 13 owning any kind of e-bike

Trial participant before and after surveys



Effects on cars.... the second car

3 households got rid of a second car

14 decreased their car mileage

6 out of the 10 e-cargo bike owners
have decreased their car use

4 out of 7 new e-bike owners
decreased

Of the 18 who increased their cycling, 11 decreased
their car mileages by a similar or larger amount!

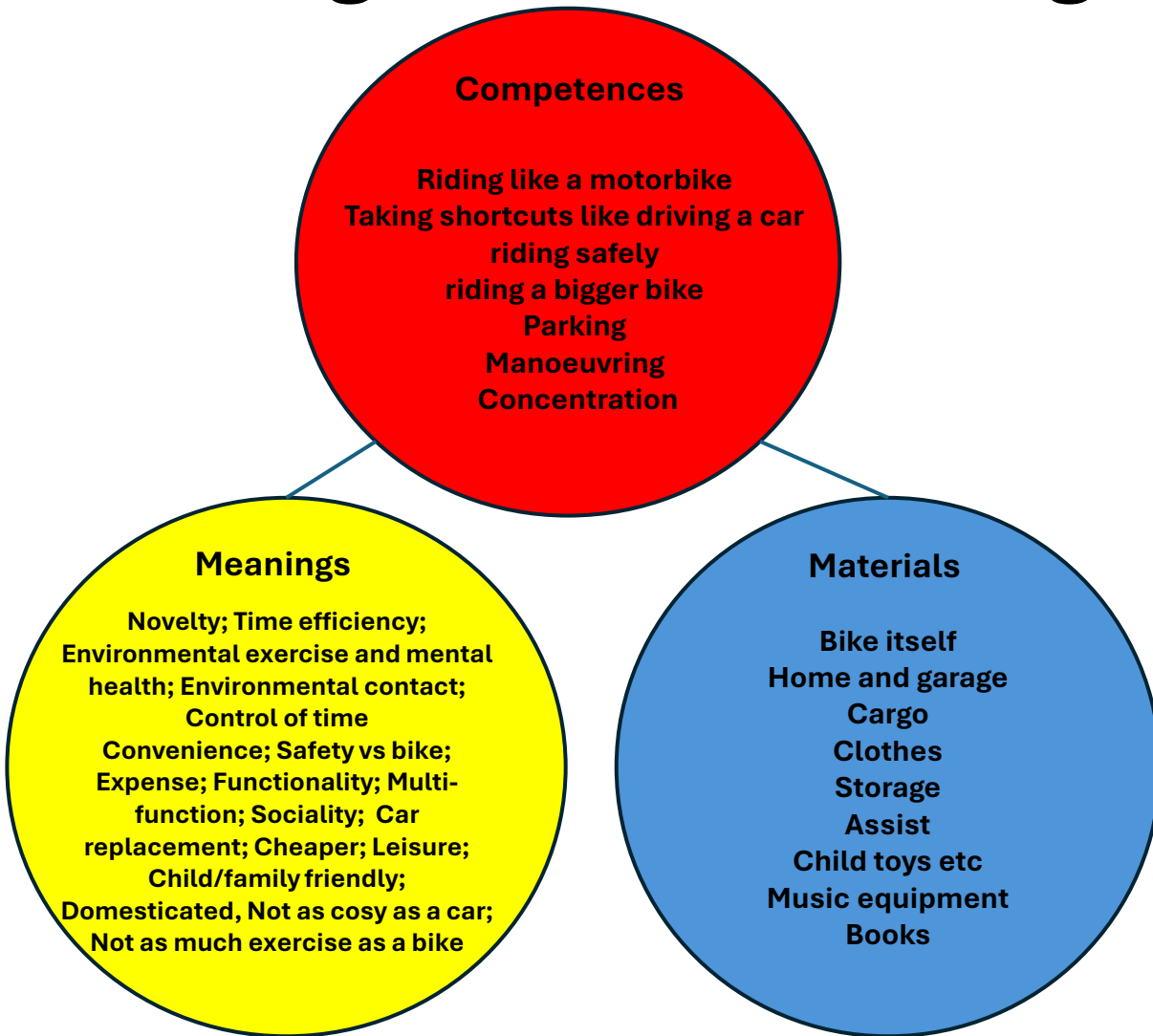
We got rid of our second car due to participation in the trial. It was clear to us whilst we had the e-cargo bike that we did not need a second diesel vehicle.

[...]

I am desperate to replace it with an e-cargo bike, we just need to find the money



E-cargo bikes challenge car dependent practices



- They fit easily into some households daily lives without having to change lots of other “practices”
- Some participants already had cycling skills We provided training that helped some people make good use of the bikes
- Experience helped people see the usefulness, fun and value of the bikes

Culture – cycling citizenship: From MAMIL to NORMAL

- e-cargo bike citizenship broadens cycling identities in contexts where cycling has negative cultural associations
- ‘the recognition of cyclists as legitimate public space users
- e-cargo bike citizenship is often family citizenship, contrasting with individualised cycling, and contesting the norm of motorised family mobility
- *‘people do actually give you a lot of space compared to when I’m in Lycra on my road bike where I think I’m dehumanised (...) I’m just one of those idiots slowing down people. But when somebody sees that it’s a bloke stood upright with two kids in the front clearly doing a chore rather than a pleasure ride, (...) people do give you more space and patience’ (Leeds, Male, 40–44, Sum.).*
- This is part of why trials are effective, they increase visibility of cycling / active travel in a positive way

Glachant, C., Cass, N., Marks, N. and Labib Azzouz (2025). Between or Beyond Bicycles and Cars? Navigating E-Cargo Bike Citizenship in the Transition to Sustainable Urban Mobility. *Geoforum*, 166, pp.104416–104416.
doi: <https://doi.org/10.1016/j.geoforum.2025.104416>.



E-cargo bike next users... Target areas similar to those in our trials

	Fast	Slow
Hardware	Bikes (trials, loans, finance)	Infrastructure networks
Software	Training	Culture

- E-cargo bikes can make use of what already exists on the road network(maybe less so on cycle infrastructure)
- Some uptake can be achieved with things that can be changed quickly
- Cass et al [in review]

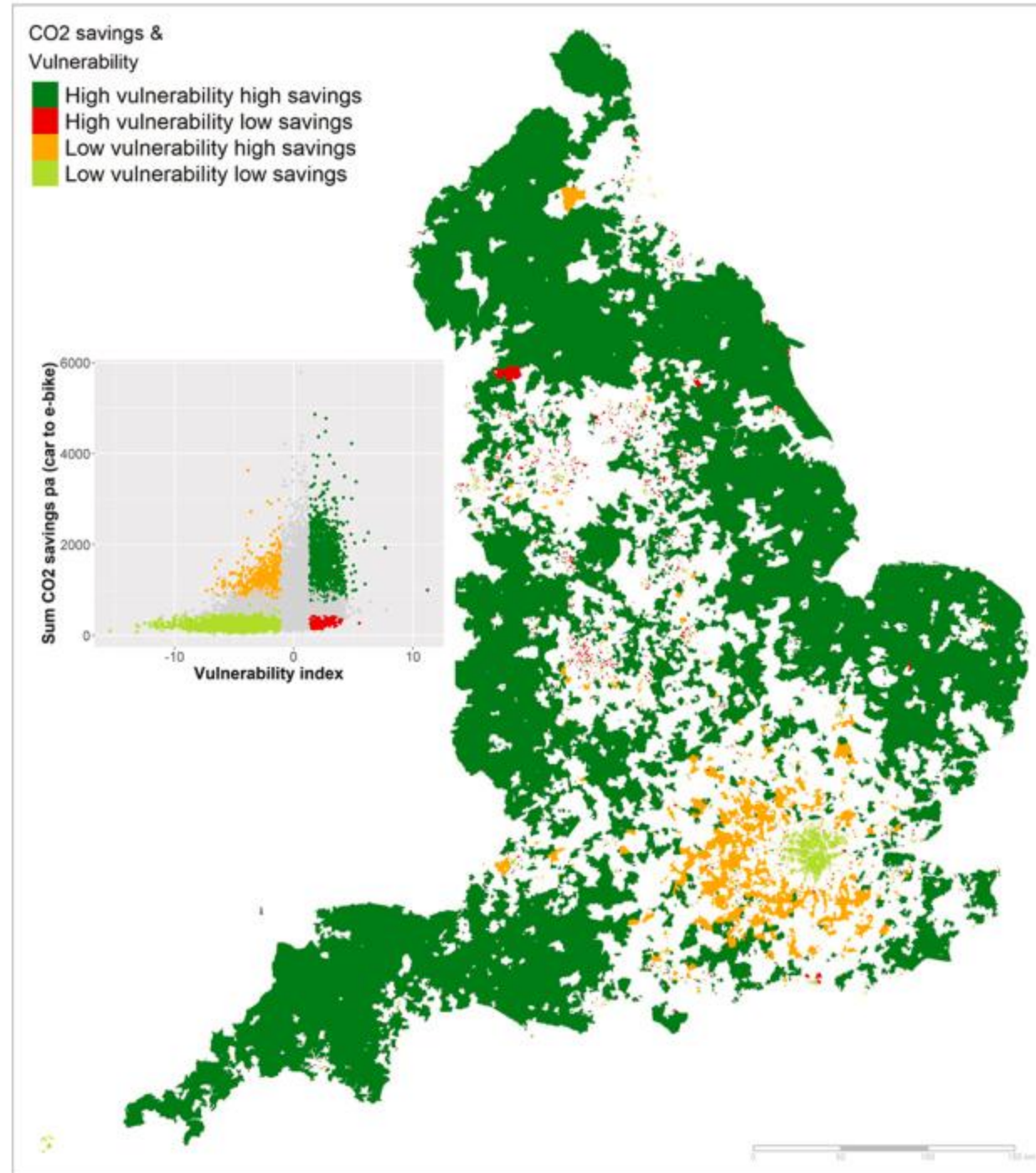
Suburban families in provincial towns and cities where adults are cyclists with young children and storage are easily recruited to this social practice.

“The revolution will happen on the school run! (paraphrasing L45)”

Where else who else what next?

- High car use households with young children in provincial cities and small towns Peri-urban / accessible rural areas. (**Yellow areas**)
- Suburban / peri-urban households vulnerable to car related economic stress (**green areas**)

E-bike CO2 reduction capability: <https://doi.org/10.1016/j.tranpol.2021.11.01>



Other work

Winter trials – people ride in wet and dark and cold.

Future scenarios

Physical activity levels from e-cargo bike usage



i.philips@leeds.ac.uk

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



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[Outputs](#)



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