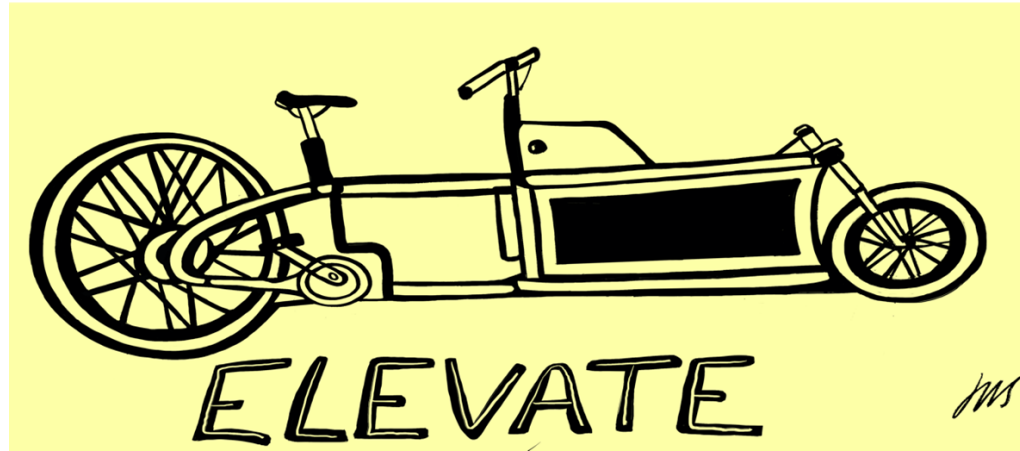


# Contents of this slide pack

- 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](mailto: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/>





## E-cargo bikes for a household shift to sustainable mobility?

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*This work has been presented at the 17th NECTAR conference and at the 6e Rencontres Francophones Transport et Mobilité (in French) in June and July 2024*

# 1. Introduction



# E-cargo bikes for more sustainable mobility?

- E-cargo bikes could substitute car and van trips (Bissel & Becker, 2024; Carracedo & Mostofi, 2022)
- Benefits could be:
  - Reduction of CO<sub>2</sub> emissions
  - Increase of physical activity
  - ... and more!



# Academic, policy and industry interest



E-cargo bikes for last-mile logistics



E-cargo bikes in sharing schemes

# But still some gaps



**Household** setting,  
Not logistic



**UK context, provincial  
and suburban**  
Not a capital city context



## 2. The ELEVATE project



# The ELEVATE project

**Project Start Date:** 01.06.21  
**Project Finish Date:** 31.05.25  
**Value:** £1.7M

## Aims:

1. Assess current and **possible future uptake** of e-micromobility.
2. Understand **barriers and enablers of e-micromobility uptake** and more specifically the uptake of e-cargo bikes.
3. Understand the impact of e-micromobility (particularly e-cargo bikes) ownership and use **on physical and mental health** as well as well-being.
4. Establish the impact of e-micromobility (particularly e-cargo bikes) ownership and use **on energy consumption and lifecycle carbon emissions**.
5. Provide insights into e-micromobility implications for **industry, policy, and end users**.

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## England



438 inhabitants/km<sup>2</sup>



54 % live in (semi-) detached houses



22% of households do not own a car

## Kennington: suburb of Oxford



4033 inhabitants/km<sup>2</sup>



50 % live in (semi-) detached houses



10% of households do not own a car

## Guiseley and Otley: satellite towns of Leeds



2158 inhabitants/km<sup>2</sup>



64 % live in (semi-) detached houses



11% of households do not own a car

## Preston Park and Hove Park: neighbourhoods of Brighton



8970 inhabitants/km<sup>2</sup>



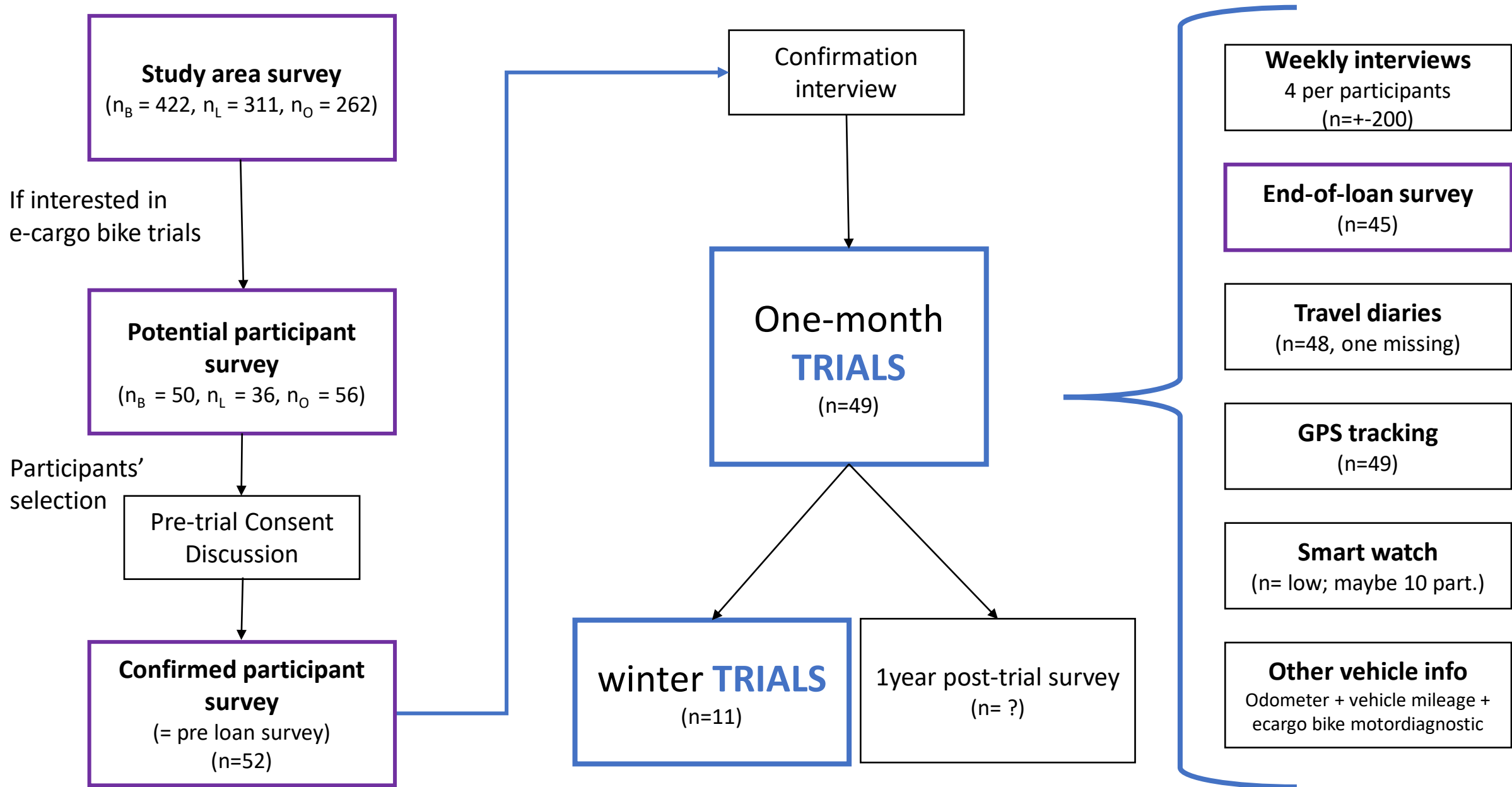
35 % live in (semi-) detached houses



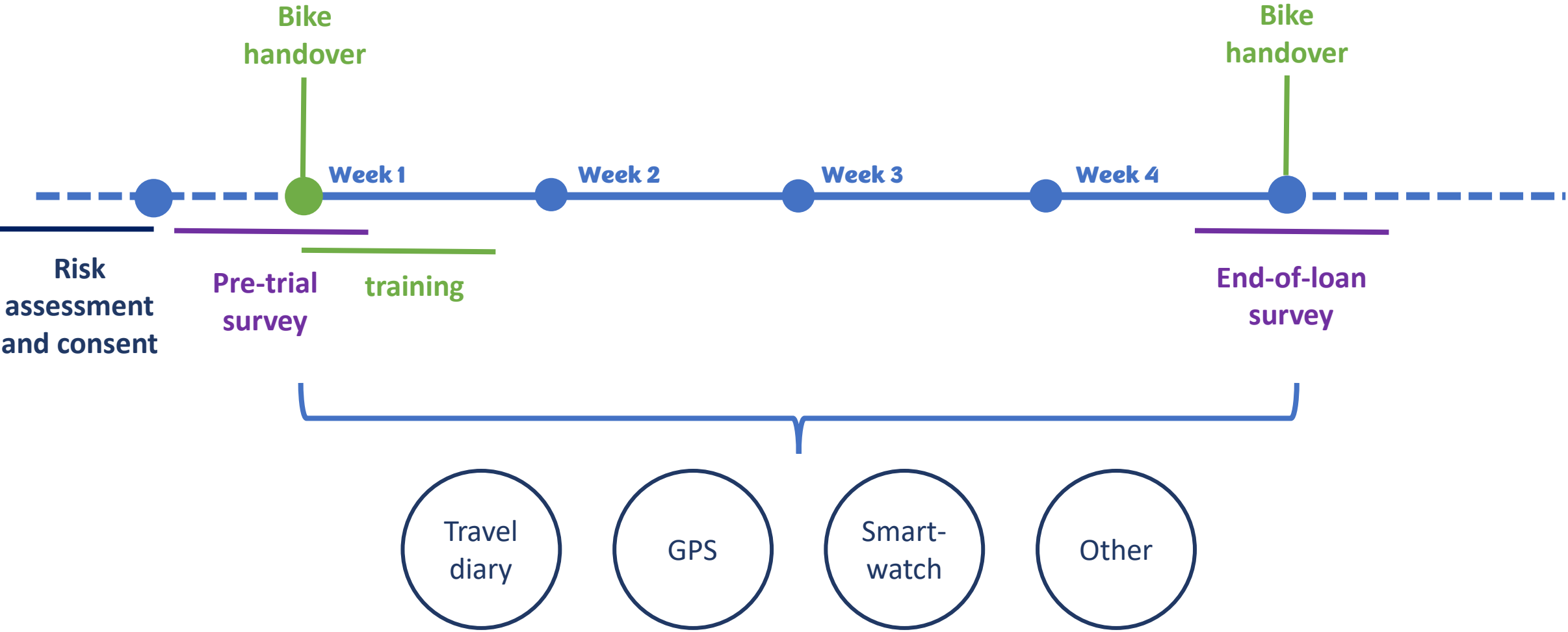
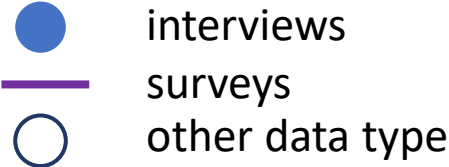
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# E-cargo bike one-month trials



# 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**



# 3. Results - uptake

# Usage



## Days of use

2 to 29  
mean 14 days or  
3 days/week



## Number of trips

2 to 50  
  
Mean 5 round  
trips/week



## Total distance

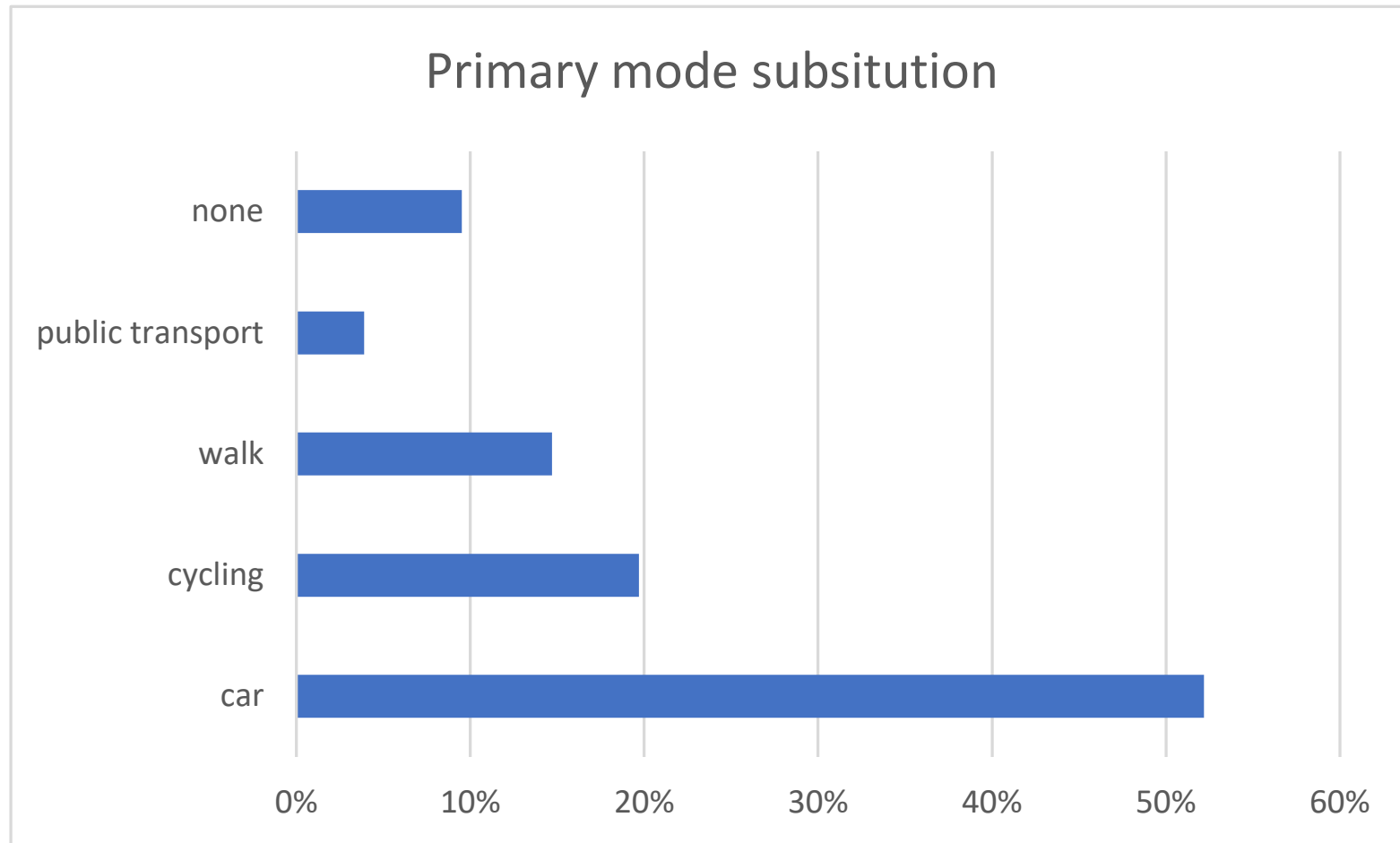
15 to 345  
  
Mean 38km/week



## Trip length

1km to 76km  
  
Most under 25km  
  
Mean 8km / round  
trip

# Modal shift





## (Second) car substitution

*“[E-cargo bike use] I think, massively reduced our mileage. I mean, I’ve barely driven these last 4 weeks at all [...] even though the bike still wasn’t an option to [my wife] she was **influenced by being part of the trial** and so started getting the bus more.”* (Oxford, male, 30-34 yo)

*"if a dual-car household thought about could **they become a single-car household** if there was an e-[cargo] bike in the house, I think they would absolutely find that they could, and yes, e-[cargo] bikes cost money, but a damn sight less than cars.”* (Leeds, female, 40-44 yo)

# Reduction in weekly car use

Before

-49km

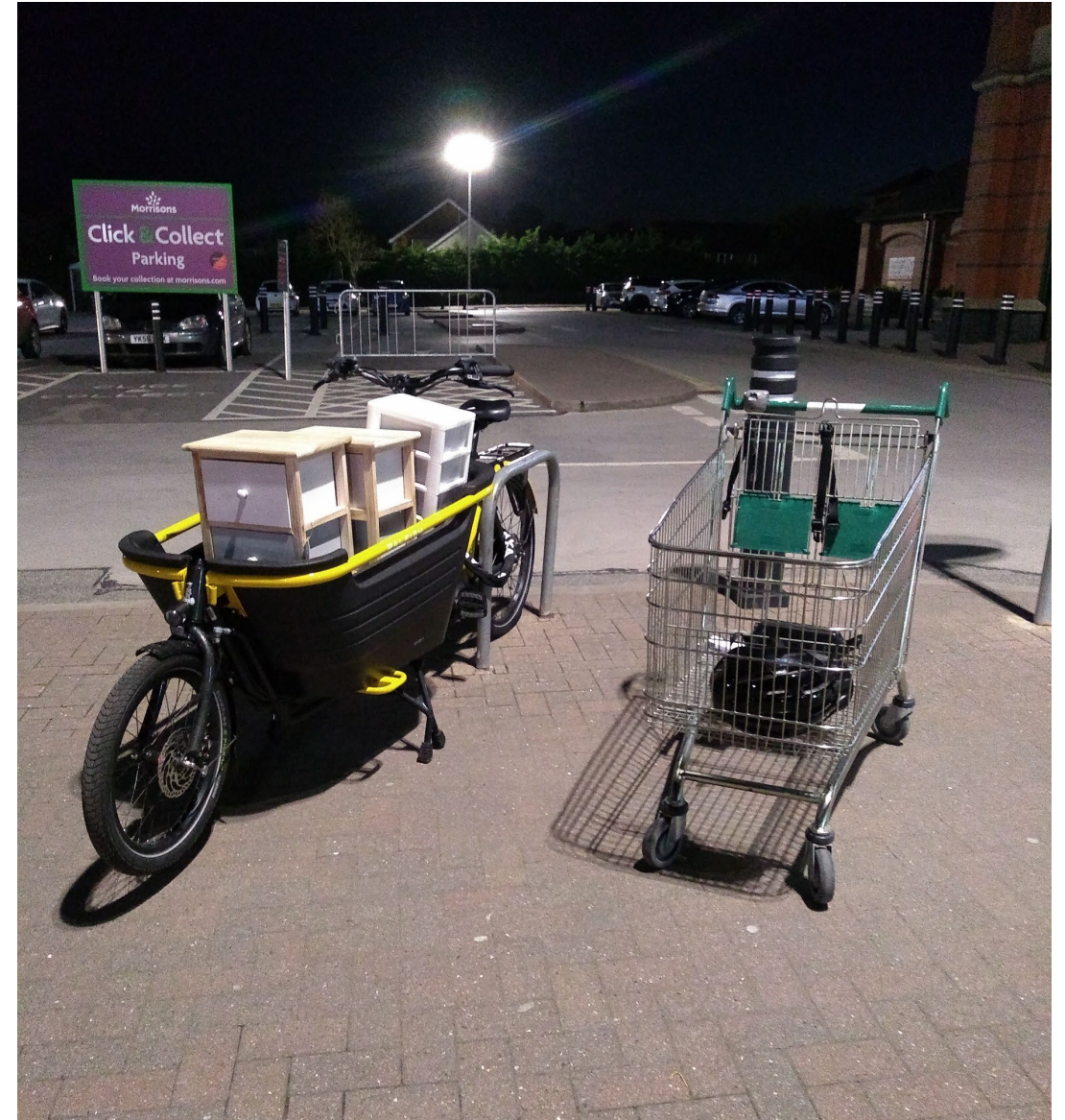
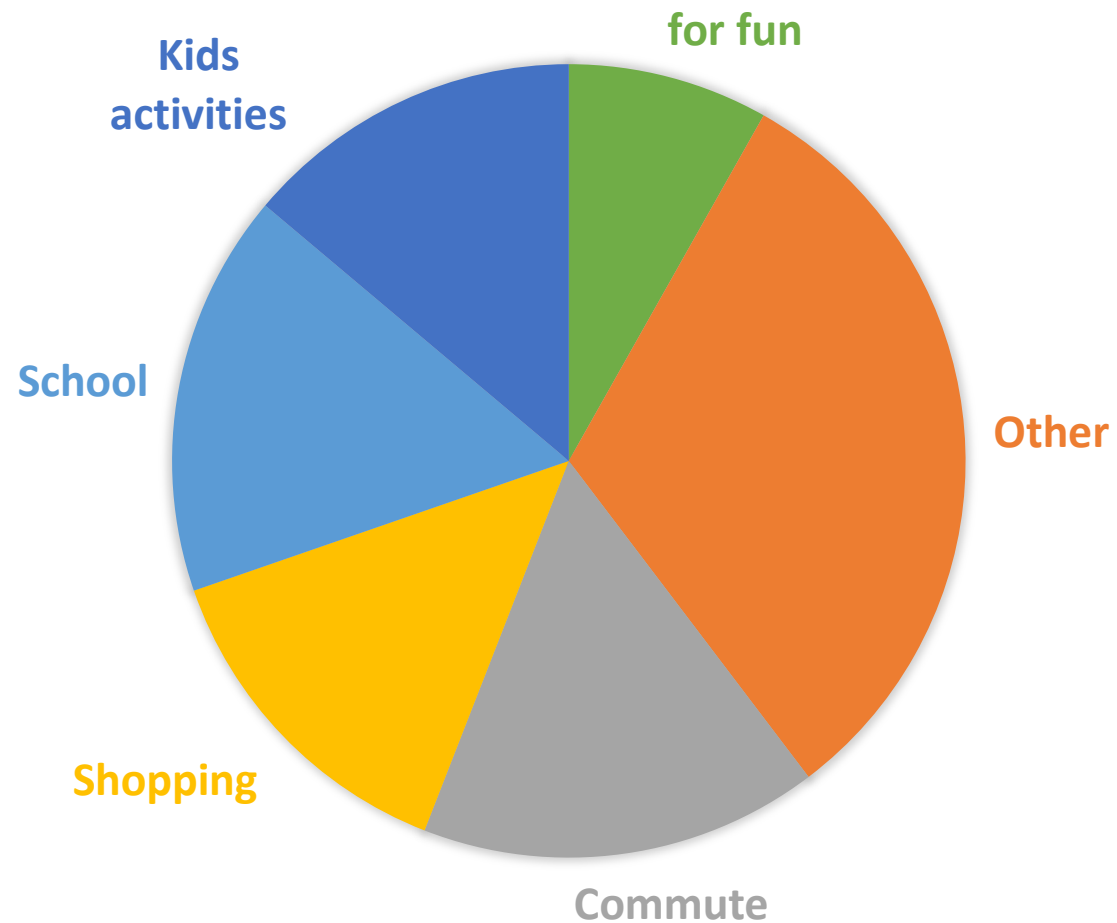


+35km

After

- 15km

# Trip purpose





# Multi-cargo

*"In the basket section, yeah, is a plant pot full of more shopping. But we've had guitars strapped to it, we've had, yeah, we've had hamster cages, we've had all kinds of stuff strapped to the bike and just transporting things and people it's wonderful for."*  
(Leeds, female, 30-40, winter)





# Family mobility



1/3 of all trips carried child(ren)



Only 2% with adults as passengers



# Family mobility

- Works well with the **flexibility** needed for household duties and exercising: *“When you’ve got two young children, it isn’t always possible to do regular exercise, (...) so being able to just go on like a 15-minute cycle ride (...) is great”* (Brighton, female, 30-34 yo)
- Contributes to **family interactions** while on the move: *“one thing that’s nice about it, and this is very specific to having a baby, is that he’s sitting in front of you, looking at you, right, whereas at the moment we tow him in a trailer and you can’t see him, you can’t talk to him, whereas with this [e-cargo bike] he’s sitting right there in front of you and it’s actually really nice”* (Oxford, female, 35-39 yo).

# Impact beyond the household: local communities

*“Overwhelmingly **positive**, ridiculous. Like people wanting to come and talk to me, children wanting to get in it. We’ve constantly got visitors in the bike, parents at nursery wanting to come and ask questions about it, but just, you know, everyone” (Leeds, female, 40-44 yo).*

*“if you went through town the kids were like, whoa that’s **so cool**, you know, but also there’s a slight madness to it as well when you’re loaded up because **they’re not everywhere**, they’re not like, you know, commonplace, you’re like oh, my God, **he’s got three kids in that**” (Brighton, female, 40-44 yo).*

# 4. Results – barriers and enablers

# Ease of use

*“I think **the more you cycle it the easier it becomes** and sort of the quicker and you just, the time it takes to get it out of the garage and get going and that kind of thing, like every time you do it it’s just a bit more second nature. And yeah, a bit more confident cycling sort of knowing how wide it is, and that kind of thing.”* (Oxford, male, 40-44 yo)

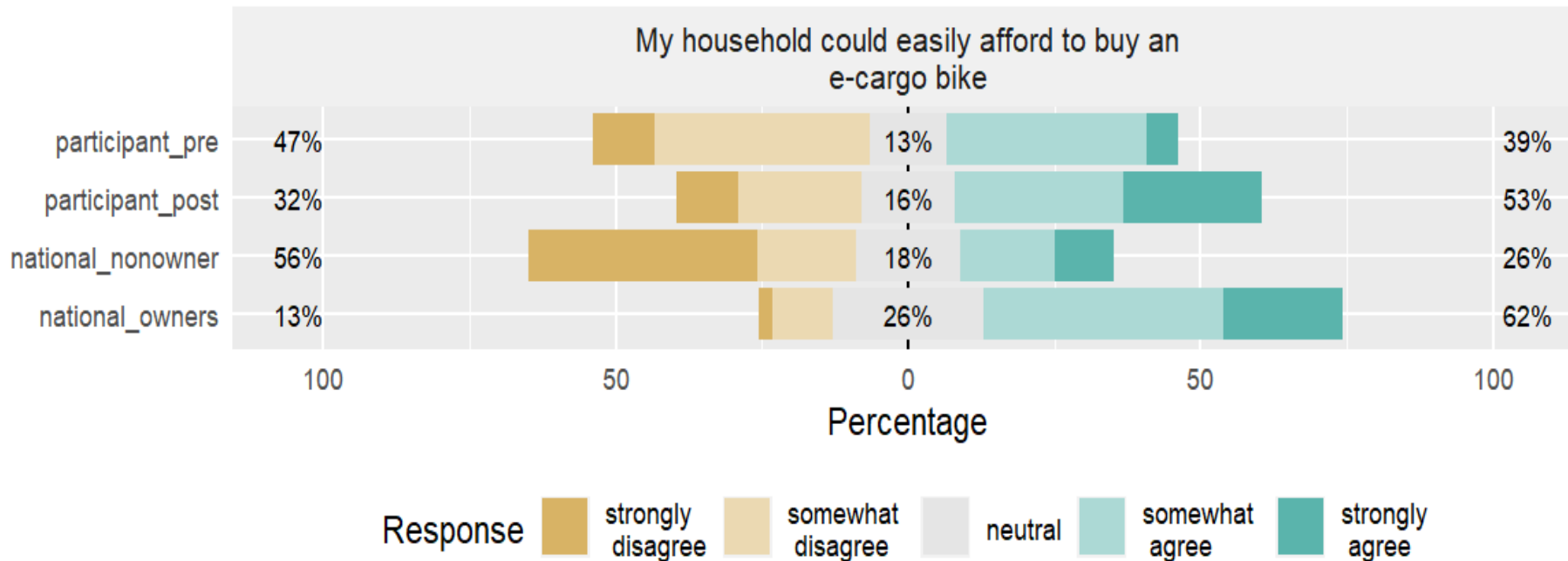
*“If I wasn’t a bicyclist in the first place, I’d probably want to be sure to get the **[training]** in at the start or before because it was quite nice to have that, I appreciated that very much, **even as an experienced cyclist it was actually genuinely useful.**”* (Leeds, male, 55-59 yo)

*“When I first used the bike in the summer I was like “okay, we’ll stick to the cycle lane, we’ll only go places we can go on the cycle lane”, I was quite nervous going on the roads. **Now I would cycle anywhere and everywhere with the children on the bike.**”* (Brighton, female, 25-29 yo)

# Affordability

*"It's just the **price that puts me off**. I'd love one. (...) If I had the money sitting there that would be the first thing I would spend it on."* (Brighton, female, 25-29 yo)

A partir de 5749,00



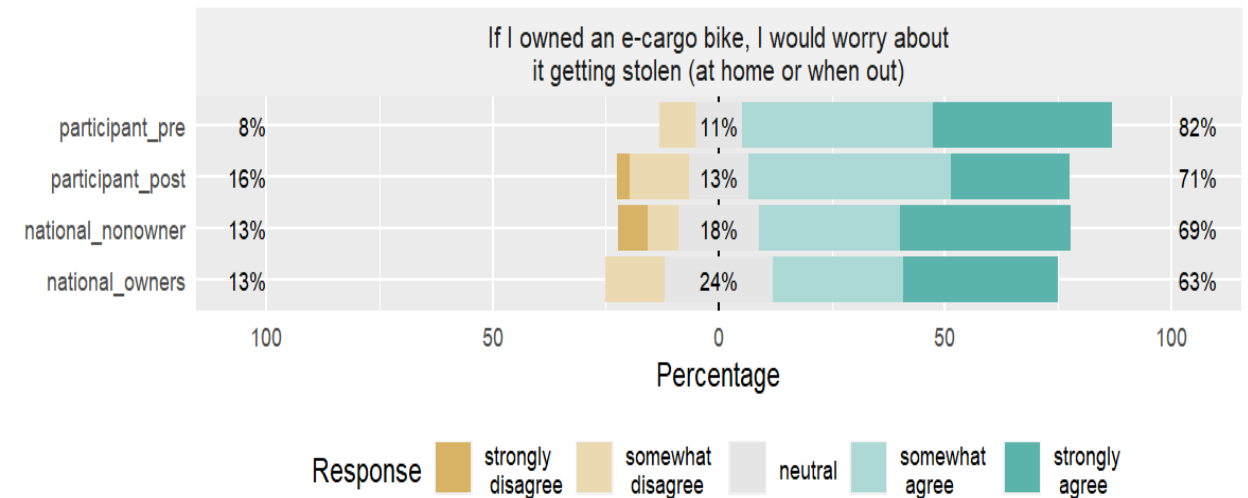
# Storage

*“It’s **expensive**, yeah, so, yeah, and you need **somewhere to park that kind of bike**, you know, it’s not something that you can just whip round the corner of your house because some little drives are really small. So, yeah, **looking after it and parking it at home would be an issue for quite a lot of people**, I would imagine” (Oxford, female, 60-64 yo)*



# Parking

- Fear of theft, mainly due to the lack of secure parking spaces
- *“I wouldn’t feel you know, taking it into like the **multistorey car park** and parking it there, I think I’d probably feel quite **vulnerable and weird, it’s not set up for that**, but equally to try and then cycle it to the **normal parking spaces** like at Westgate for bikes, they’re not **designed to take that style of bike.**”* (Oxford, female, 40-44 yo)





# Safety

- On the road: *“You feel **safer** because it's a **larger road presence**, it's a more dominant road presence, it's much **smoother** and better **controlled**, it's smoother off the line, it keeps up, you know, it doesn't get under, in the way of traffic so much.”* (Brighton, male, 45-49 yo)
- Children on board: *“**If [car drivers] see a child** with a high viz thing on and a helmet, then they tend to be more **careful** than if you just happen to be an ordinary bike rider, I think.”* (Brighton, female, 40-44 yo)
- But cycling infrastructure is limited and often hardly accommodates e-cargo bikes

# 5. Conclusions

# Thank you! Questions?

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