Motivations behind private e-Rideable use in Perth, WA

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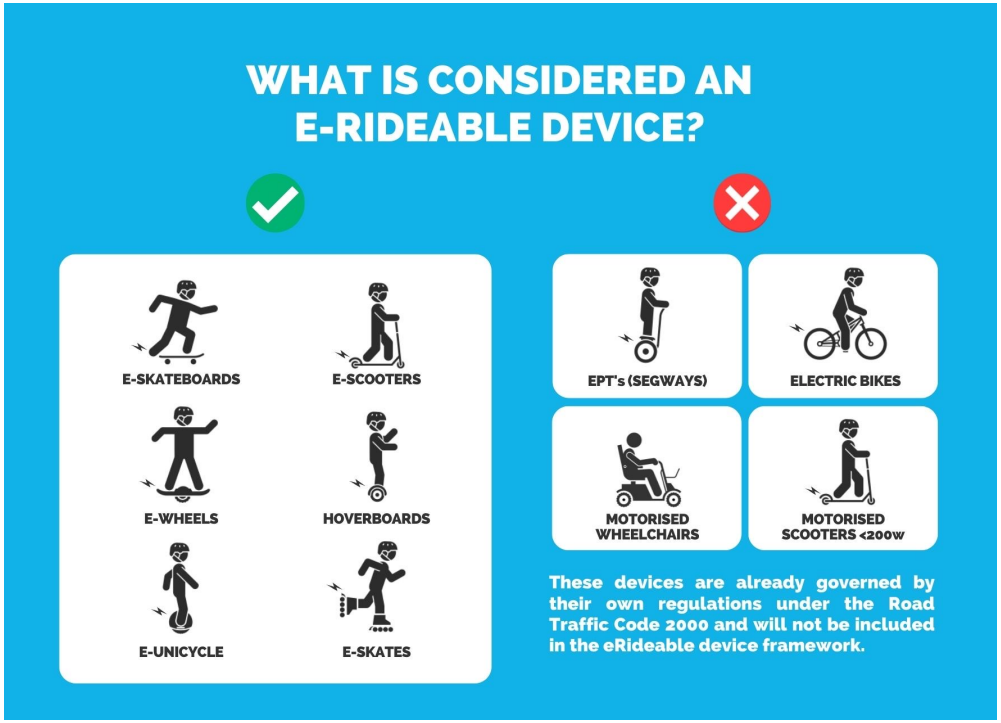
What is an e-Rideable?

The definition used by the Department of Transport and Major Infrastructure (WA) is: one or more wheels, used by only one person, less than 125cm long, less than 70cm wide, less than 135cm high, less than 25kg in weight with a maximum speed of 25 km/h or less on level ground.

A variety of devices are included within the definition, but notably electric bikes (and some other vehicles) are not included.



Scope of the project

The project aimed to provide knowledge on the extent of travel using e-Rideables, their usage patterns and motivations in the context of the city's multi-modal transport system, including potential enablers and barriers of e-Rideables.

The main activities undertaken were two surveys: an intercept survey (conducted between 2-9 May 2024) and an App-based experiential survey (conducted between Jan-Apr 2025).

This aimed to provide inputs to developing a suite of policy initiatives/programs to support the positive aspects of e-rideable mobility (access, environmental benefits, health benefits), while reducing risk of accidents and their consequences in Western Australia.

Notably, the project only focused on **privately owned** e-Rideables.

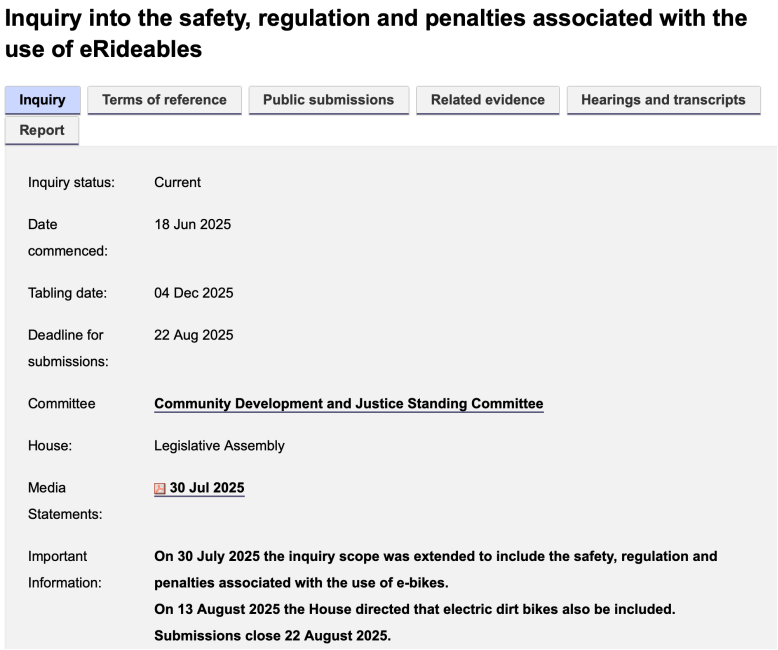
The Perth context

Until June 5, 2025, Beam and Neuron operated throughout local government areas of inner-city Perth.

The services were suspended following the tragic accident, when a 51-year-old male was killed by a drunk rider[1].

Currently, only privately owned and operated devices are in use. Rental scooters continue to be available in Perth suburbs and within regional WA towns.

A parliamentary inquiry was launched into e-Rideable use (but it does not follow the Government's own definition – also includes various e-Bikes).



Inquiry into the safety, regulation and penalties associated with the use of eRideables

Inquiry | Terms of reference | Public submissions | Related evidence | Hearings and transcripts | Report

Inquiry status:	Current
Date commenced:	18 Jun 2025
Tabling date:	04 Dec 2025
Deadline for submissions:	22 Aug 2025
Committee	**Community Development and Justice Standing Committee**
House:	Legislative Assembly
Media Statements:	**30 Jul 2025**
Important Information:	**On 30 July 2025 the inquiry scope was extended to include the safety, regulation and penalties associated with the use of e-bikes.** **On 13 August 2025 the House directed that electric dirt bikes also be included.** **Submissions close 22 August 2025.**

[1] https://thewest.com.au/politics/local-government/city-of-perth-suspends-rental-e-scooters-days-after-51-year-old-father-killed-by-alleged-drunk-rider-c-18930463

Fieldwork undertaken

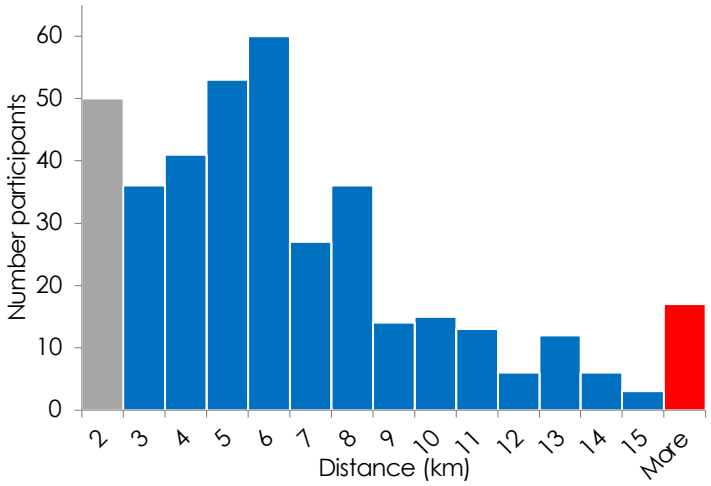
The intercept survey was conducted at 14 sites: Perth CBD (Riverside Drive), East Perth (Matagarup Bridge and Claisebrook), South Perth, Narrows Bridge (both the North and South entries and exits), Canning Bridge (both near Kwinana Fwy and the Raffles Hotel), Murdoch (exit of Kwinana Fwy and entry to Murdoch University), Fremantle (Marine Terrace and City Centre), Scarborough (both the PSP to Trigg and Moorland Street).

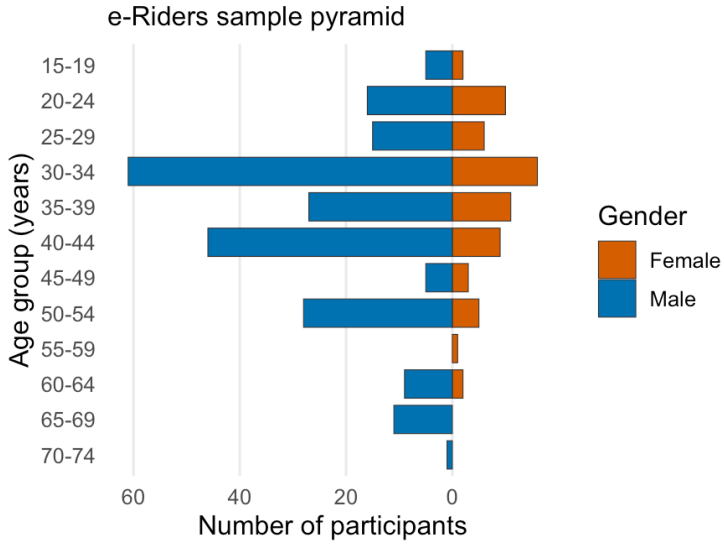
The intercepts were conducted by 26 students (with 8 academic supervisors) and yielded 249 responses, 728 refusals, 63 'repeats', this was augmented by 123 online surveys ($10 voucher) for those who could not complete the survey at the time.

The experiential contacted 10 social media groups, deployed flyers on University campuses and attempted recruitment at relevant community workshops, plus offered to survey respondents. There were 35 experiential survey participants, from many who expressed interest ($70 voucher).

Intercept (+online) results - I

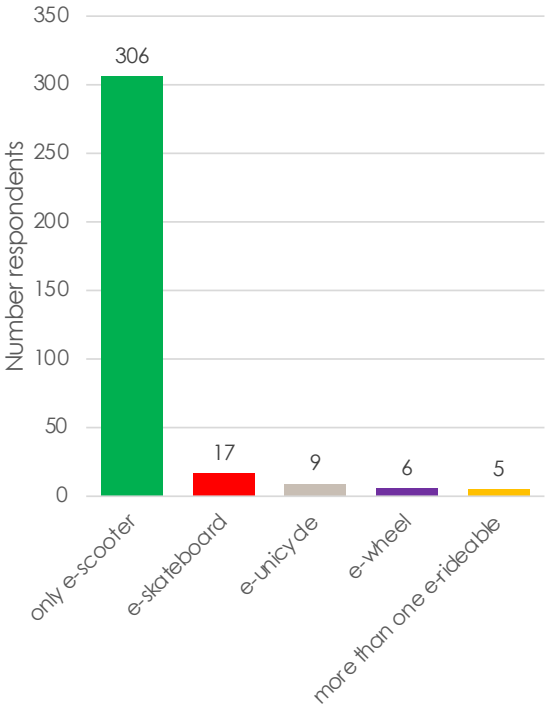
Consistent with the literature – mostly males (80%), between 30-45 years (60%), with tertiary education (~50%). 30% of respondents using e-Rideables in combination with PT. Notably, almost 10% over 55 years of age. Many more e-Unicycle / e-Wheel (17), e-Hoverboard (4) and e-Skateboard (33) riders refused participation, compared to e-scooters ($p < 0.05$).

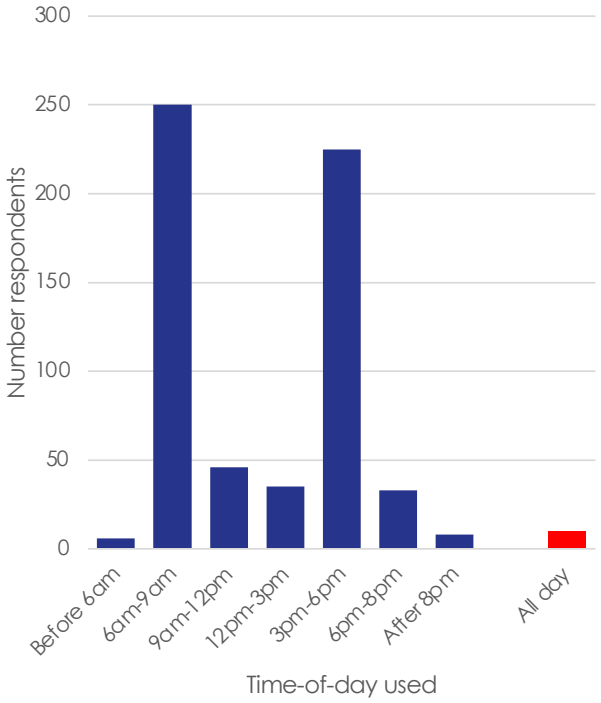


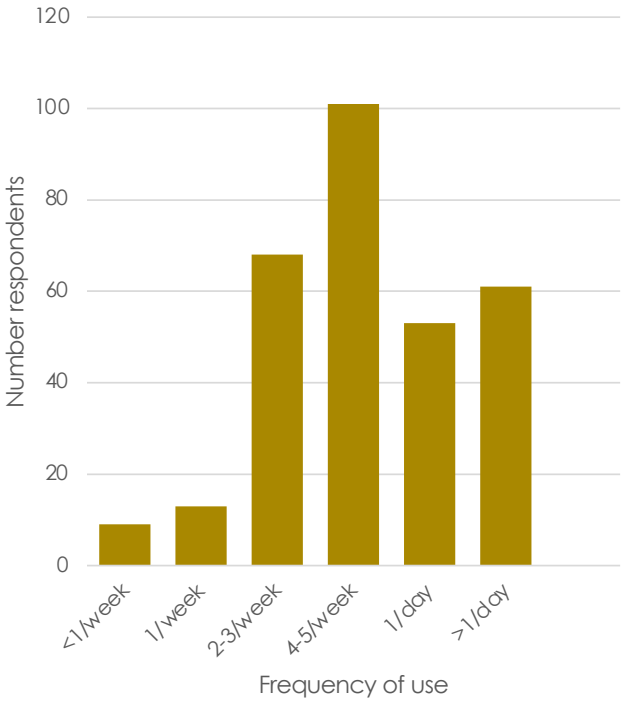


Intercept (+online) results - II

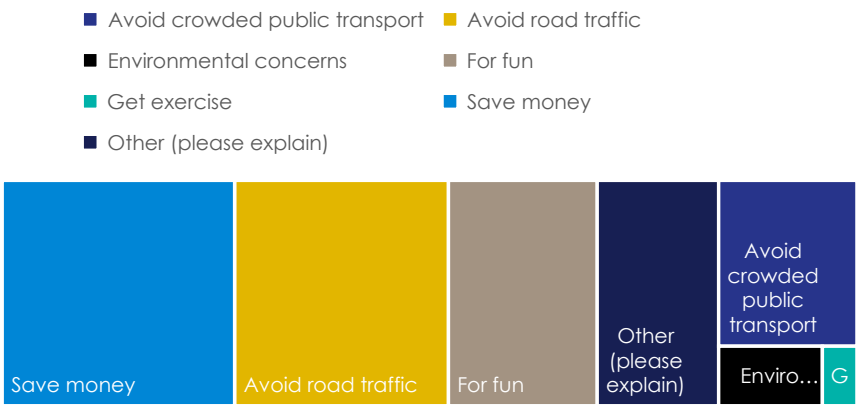
Half are using e-Rideables for commuting. Lowest response rates are during AM Peak (8:00AM-9:00 AM) for commuters.

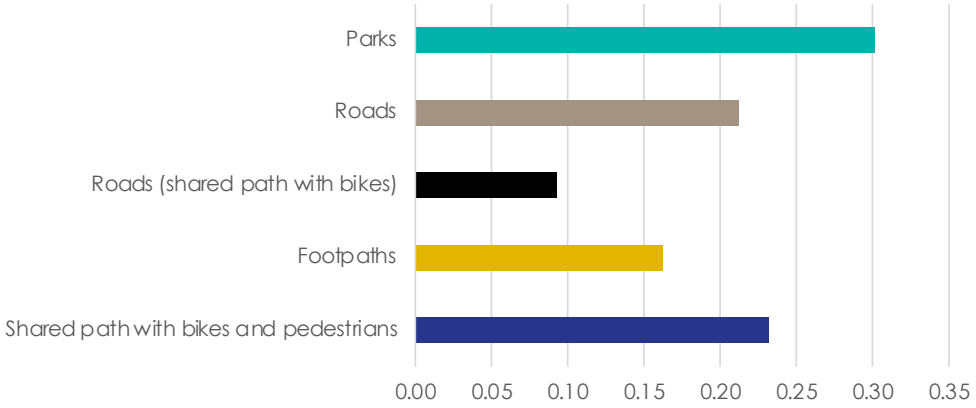


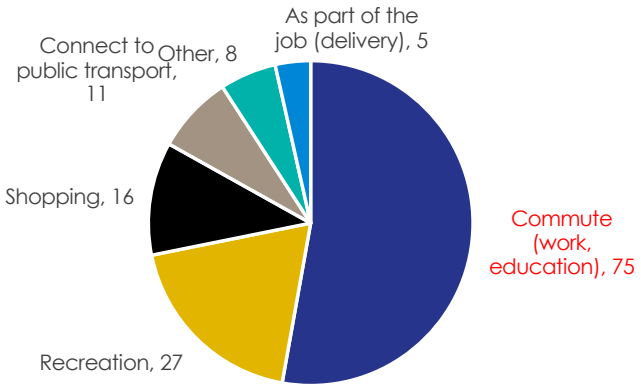


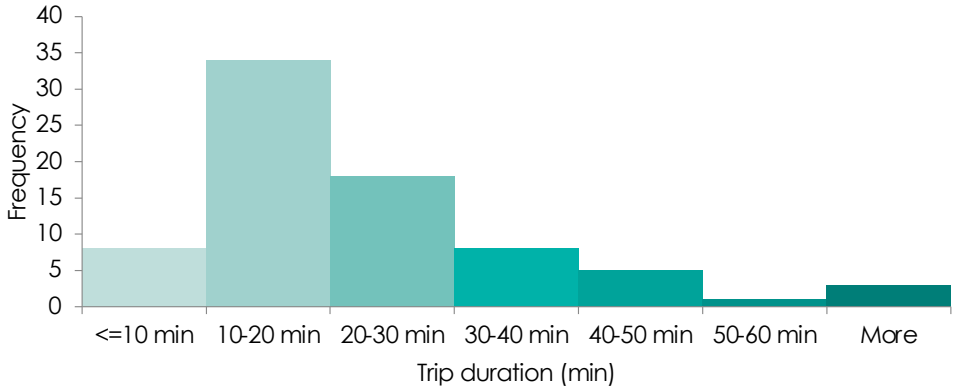


Online only results - I



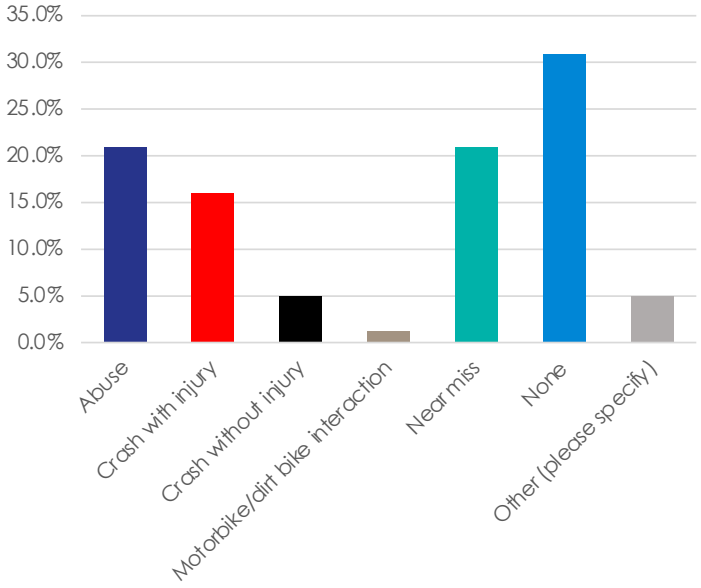






Online only results - II

Some interesting findings: a large proportion of users experienced (different types of) negative events. Safety concerns ranked highly, especially speeding by females. Also of note was that 12.5% were not aware of the rules (is this really a surprise?)



Concern (**ranking**) mean & std. dev.	Male	Female	Total	p
Aggression	3.09 (1.71)	3.19 (1.28)	3.12 (1.61)	0.841
Lack of awareness of the rules	3.3 (1.76)	3.25 (1.69)	3.29 (1.73)	0.917
Dangerous manoeuvres	2.96 (1.49)	3.38 (1.63)	3.06 (1.52)	0.346
Speeding	3.19 (1.43)	**2.19 (1.33)**	2.96 (1.45)	0.015
Lack of skills	*4.83 (1.80)*	*4.75 (1.69)*	*4.81 (1.77)*	*0.875*
Lack of courtesy	*3.94 (1.55)*	*4.5 (1.71)*	*4.07 (1.59)*	*0.223*

Qualitative insights

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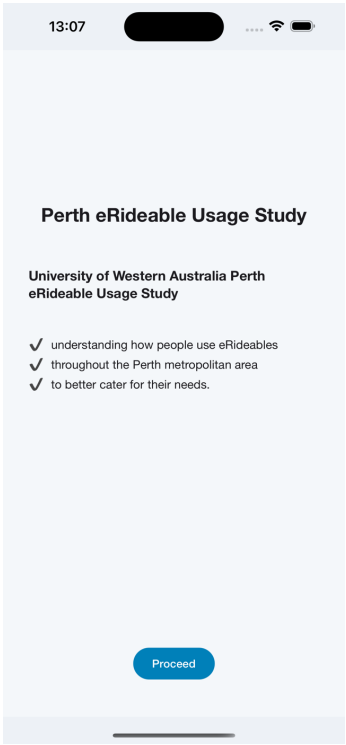
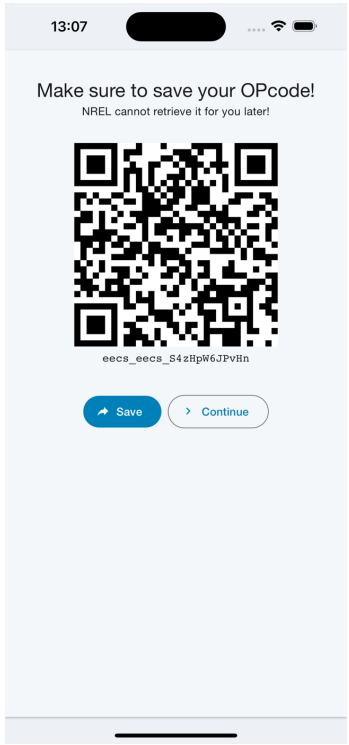
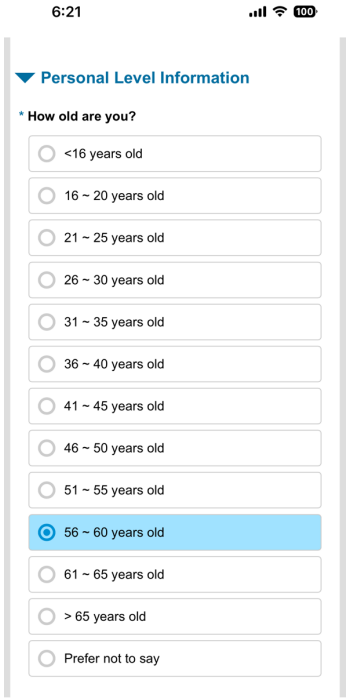
Why using it?

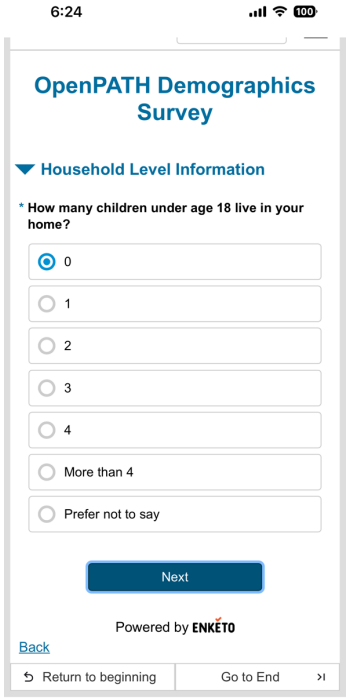
How to improve?

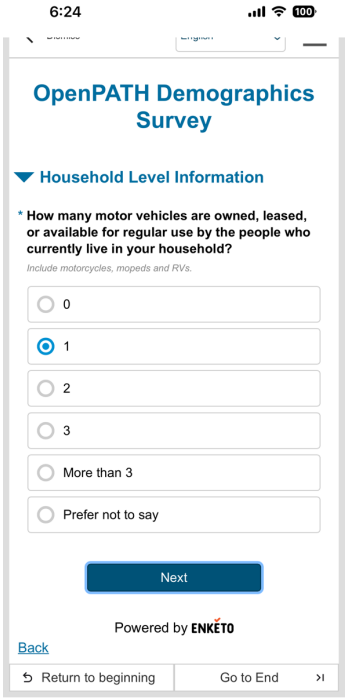
Experiential survey - I











Experiential survey - II

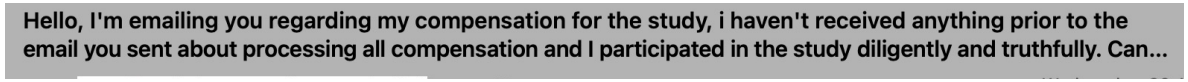
Programmed the Perth ERES app based upon the NREL OpenPath App, including specifically e-Rideables (various mode labels) and local language for trip purpose labels.

Contacted clubs, user groups (media reach), universities, events to recruit participants plus survey.

Efforts after April 2025: EOIs from 12 Uni students, 8 workshop participants, 493 who had seen the flyers – none converted into app download and completion!

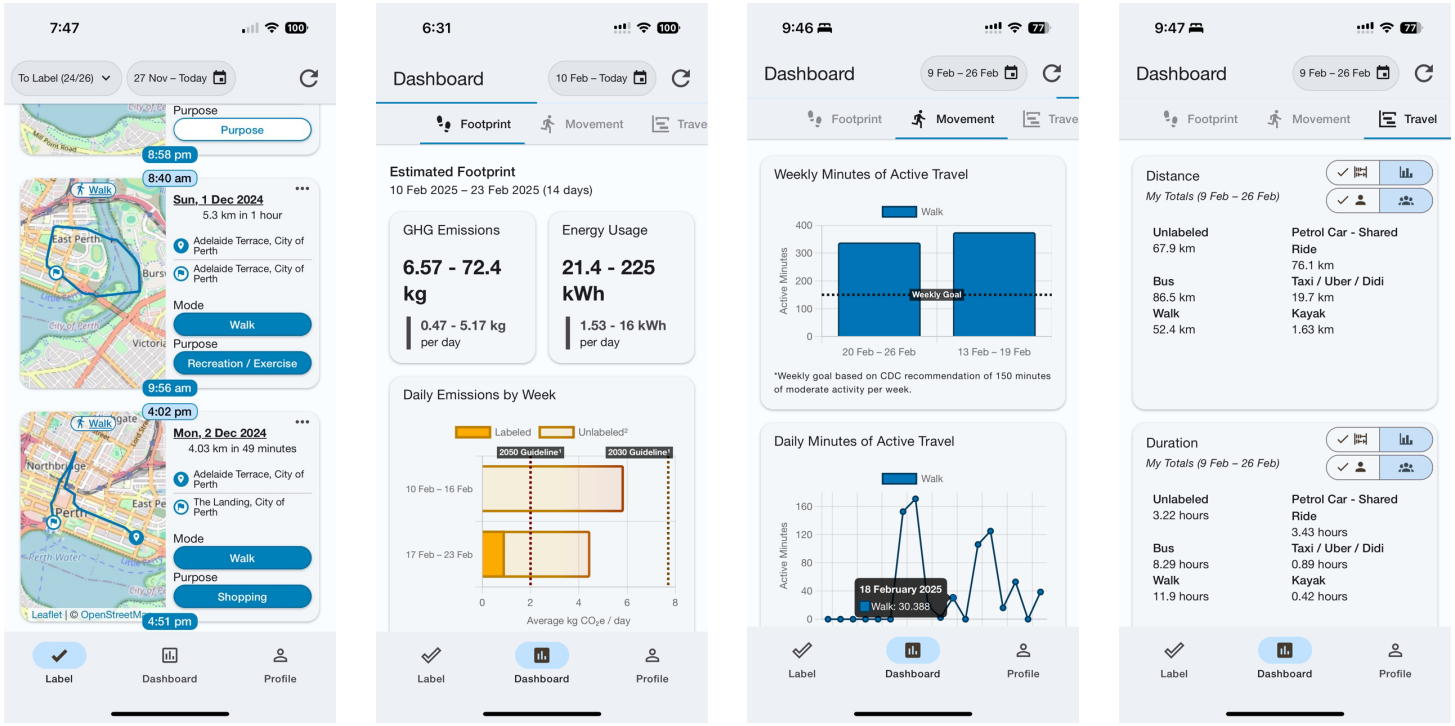
Notably, there were 19 follow-up e-mails from one e-mail address for the voucher. Fraud for online surveys, especially when associated with incentives/compensation ('click farms') is becoming more prevalent – was escalated with Ethics (HREC).

Similar experiences have been reported – see Reflect, Expect, Analyse, Label Framework (Lawlor et al., 2021), Wang et al. (2023), Johnson et al. (2024).



Experiential survey - III

A GUI App (for Android and iOS) that provides feedback to the user and allows trip tagging.



Experiential survey results - I

The sample (35 individuals) resembles the profile of the intercept survey, with 66% being male, 75% being employed full-time, and 71% being professionals (with tertiary education). Most participants are between 30-40 years of age, possess at least one class of driver license and have access to cars.

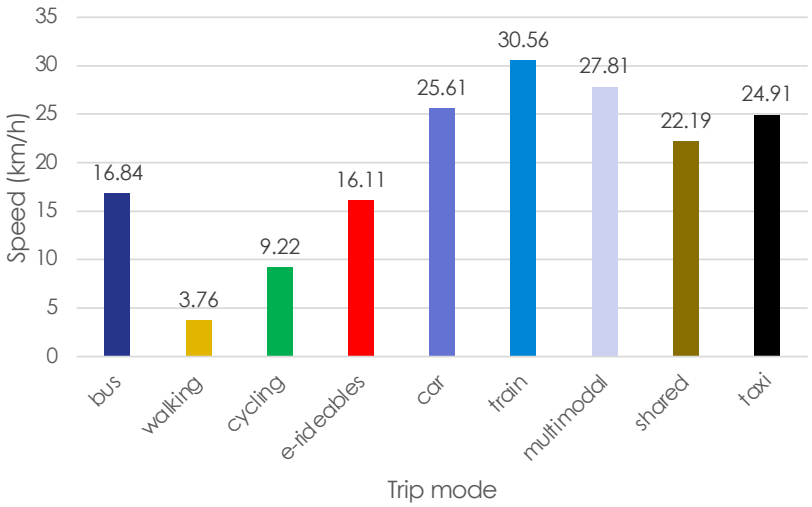
3,922 trips were made over 458 user-days. 500 trips were excluded from the analysis: too short (455 trips at distances less than 300m, either by walking or not a trip), too long (17 holiday, business and fly-in-fly-out trips, over 1,000km), 3) or were not representative for the objective of the project (24 trips by kayak or boat).

Labelling is critical. The internal algorithm correctly identified/detected car use in more than 70% of the cases, walking in about 50%, but active modes (e-Rideables and bicycles) only 27%.

Experiential survey results - II

There was substantial variation within individuals; participants spent a longer time travelling during weekend days (average 86 min) than on weekdays (average 74 min), according to their routines.14% of trips were unlabelled!

In total, 334 trips on e-Rideables were recorded. 102 were to the workplace (commute) and back home, 38 were for recreation (primarily during weekend days), 37 were for shopping and 33 were for personal business.



Experiential concerns

Main concern by respondents was tracking – saw low response rates, as reported by Tabasi et al. (2024) with the same base App:

"I did want to enquire though, it seems that the app runs in the background using GPS? Does this mean it is tracking my speed on my eridable? Ofc I would only do this on private property but would it be able to detect if I am going above 25km/h? I am worried what may be done with this information. Is it anonymous?"

"Is the app recording the speed?"

There are fewer publications on recent data, especially with private e-Rideables (only 20 new publications since Dec 2024, including the Journal of Cycling and Micromobility Research).

Parliamentary inquiry - I

The parliamentary inquiry received 239 submissions (some very large). These were analysed using Leximancer to aid in determining the sentiment of the submissions. Three groups emerged:

Submissions that were mostly negative – public, community associations (e.g., Over 55), insurance, councils/shires, Pedestrian Council of Australia.

Submissions that were mostly positive – public, Electric Sports Racing Association, e-Scooter manufacturers.

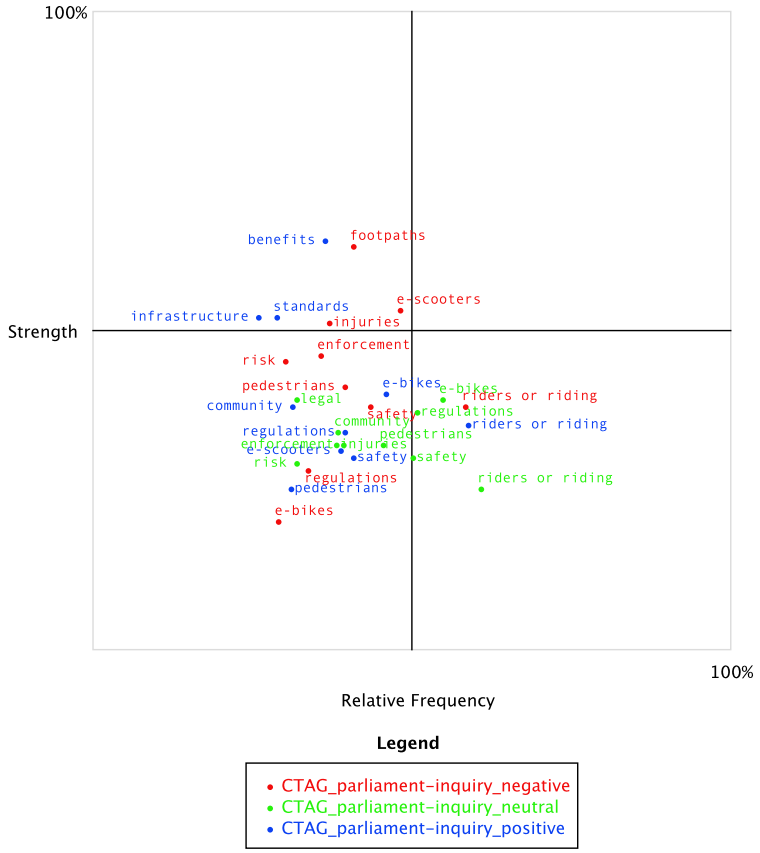
Submissions that were neutral – universities, RSC, AEV WA, Australasian College for Emergency Medicine, eMobility, Motor Trade Association of WA, WestCycle, RAC, DTMI.

Parliamentary inquiry - II

The Insight Dashboard generated by the software is displayed on the right. There are two axes:

Relative Frequency: conditional probability of the concept (e.g. community, given the source)

Strength: conditional probability of the category (positive/negative sentiment) given the particular concept (e.g., e-scooters)



Conclusions

Synthesising together from literature, surveys and submissions:

- There is a place for e-Rideables; they are likely to replace more private trips, yet legislation (more stringent) and enforcement are paramount; classification of devices is required;
- Education is needed to inform users about safety protocols, device capabilities and responsible riding behaviour;
- Alignment of conditions of use for users of e-rideables and e-bikes;
- More separate lanes, especially separation from pedestrian traffic;
- Target deployment of e-Rideable infrastructure (including storage and charging) in areas underserved by PT and allow for integration – very few (if any) combinations with PT;

Thank you – any questions?