



Emerging mobility devices in an uncertain future – the hire e-scooter craze

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Framing the challenges

Disruptive new mobility technologies

Framing the challenges

- Create uncertainty and risk
- Provide opportunities to monitor and evaluate their use and impacts, and how others perceive them
- Pose challenges for regulation and conditions of use
- Offer opportunities to maximise their benefits as part of a modern multimodal transport system



They create uncertainty

*“**Uncertainty** is an uncomfortable position. But certainty is an absurd one”*
(Voltaire)

*“The handling of uncertainty is a **wicked problem**, that is inherently insoluble because it concerns...*

- *Divergence in views, understanding and values across stakeholders*
- *Knowledge gaps and lack of evidence*
- *Dealing with complex relationships between multiple considerations”*

(Prof Glenn Lyons, 2018)

Today we will focus on hire e-scooters



Source: Newshub

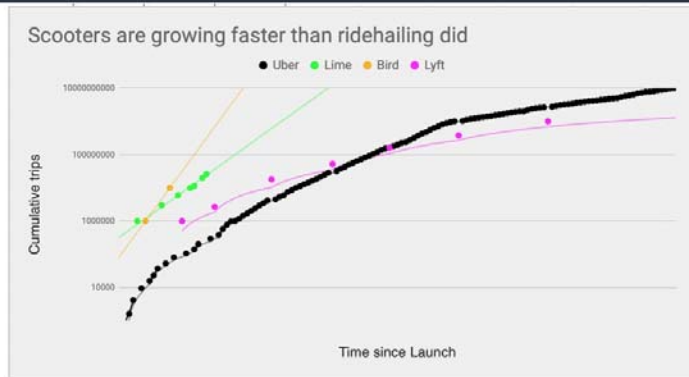
Motorised scooters are not new



Source: mashable.com

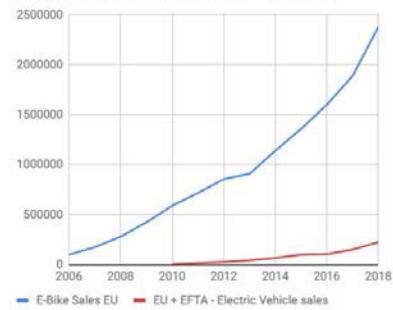
But the dockless business model is

Faster growth than anything we've seen in transport



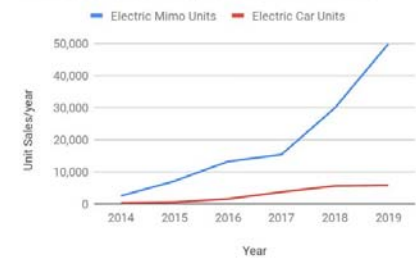
Explosive Growth

EU Annual E-bike vs Electric Car sales



NZ micromobility (ebikes/scooters) vs. electric car imports

Including 2019 projection figures. Data from NZ Customs

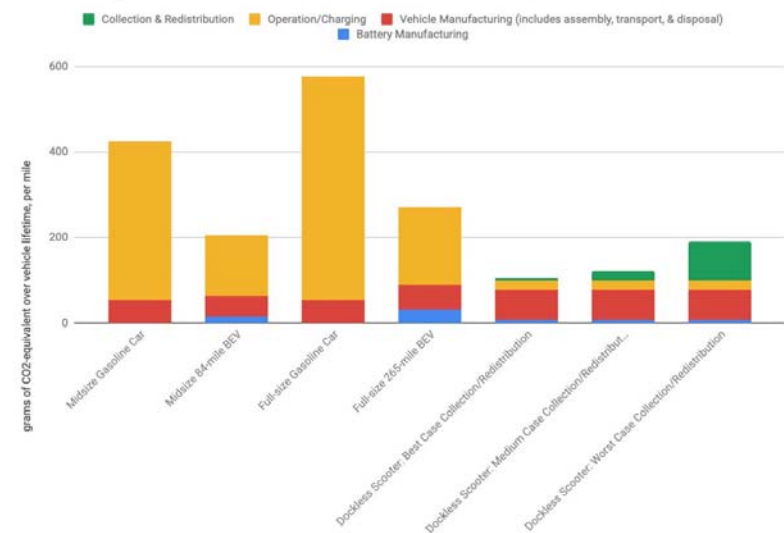


Source: Oliver Bruce, threadreaderapp.com

What are the benefits?

- Low cost and relatively low impact
- Offer new mobility choices, especially for the 'first and last mile'
- Relatively low total life cycle emissions
- Personal safety benefits, especially for women

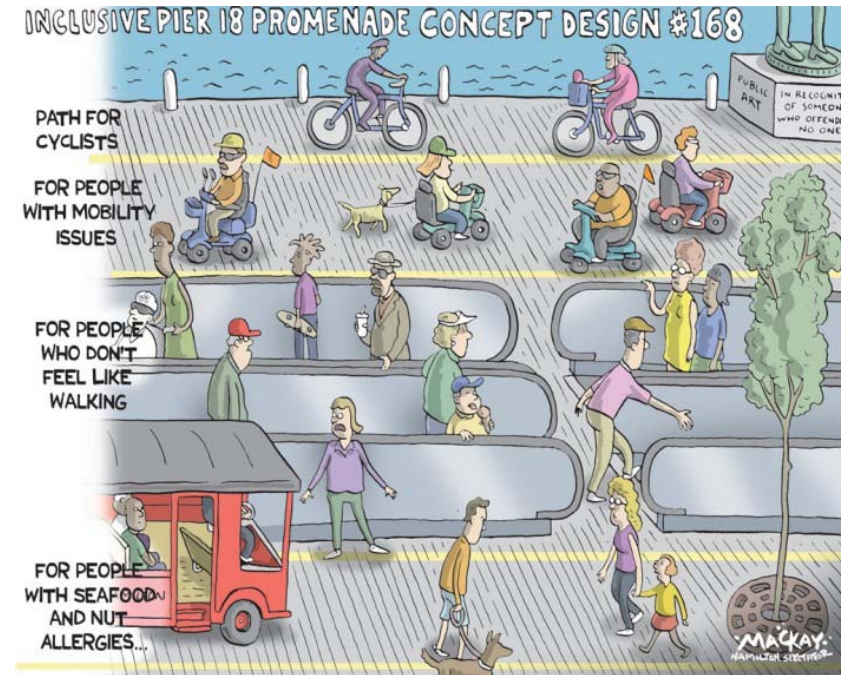
Total Life Cycle Emissions of Dockless Scooters vs. Cars, on per-mile basis



Source: chesterenergyandpolicy.com

What are the challenges?

- They are entering an already crowded urban transport space
- Where do they best fit?
- How can we enable their safe use?



What do we know about them?

Click to edit text

How do places overseas manage them?

Guidelines are emerging, e.g. NACTO

- Covers:
 - General terms and conditions for operators
 - Scope and operations oversight (by relevant Agencies)
 - Public engagement (including promoting safe use)
 - Mobility data and user privacy
 - Infrastructure



How do places overseas manage them?

NACTO guidelines (cont)

- Infrastructure includes:
 - Shared micro-mobility parking
 - Providing safe places to ride
 - Restricted/limited access areas



Santa Monica
Source: Fircroft.com

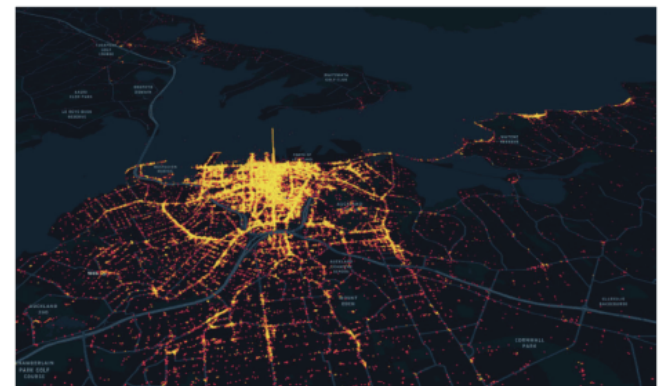


Kansas City
Source: betterblock.org

Where and how are they being used? Auckland

In first 6 months of Lime Scooters operating in Auckland:

- over 1.2 million trips
- 1.4 million kilometres travelled
- 239,000 riders in Auckland



Source: GreaterAuckland.org and Lime Scooters

What trips are they replacing?

46% replaced a walking trip

24% replaced a motor vehicle trip
(car, motorcycle, taxi, Uber)

44% of users made a new trip

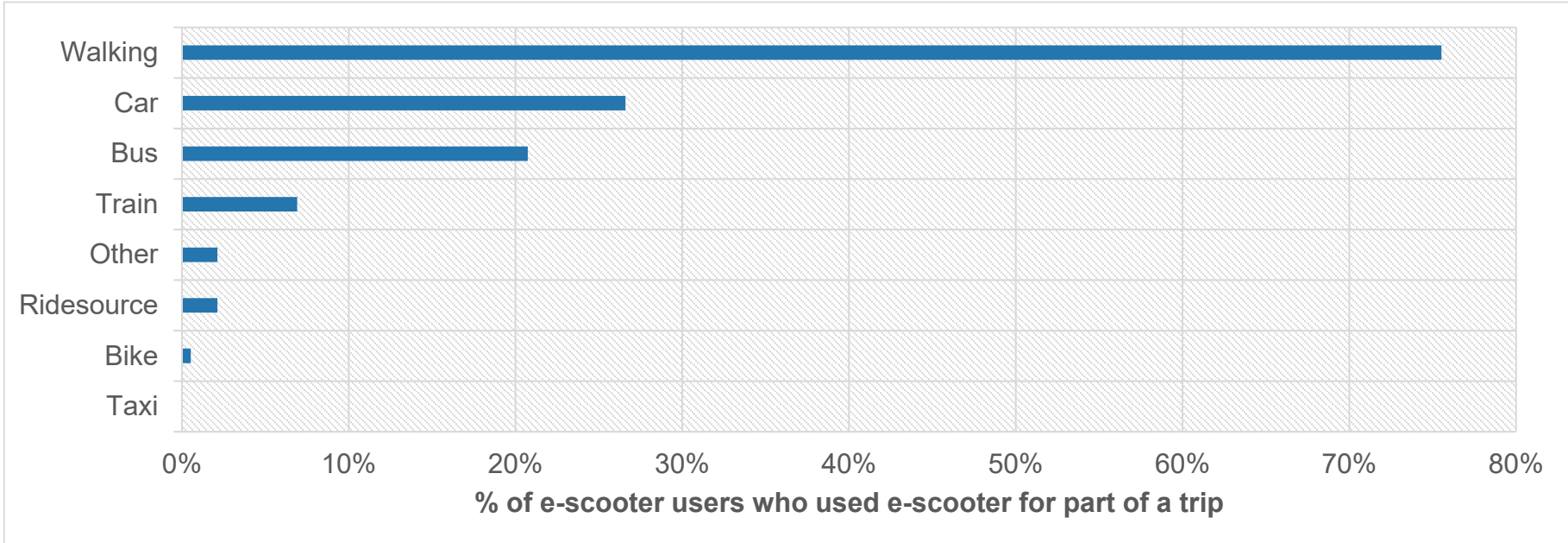
Source: Kantar for NZTA, 2019



Source: NZ Herald

Last mile?

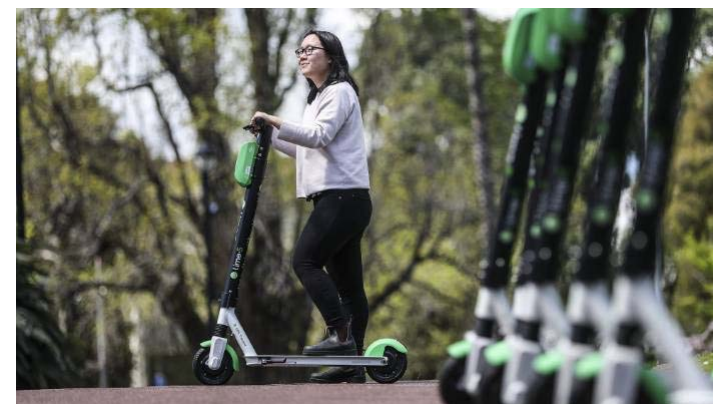
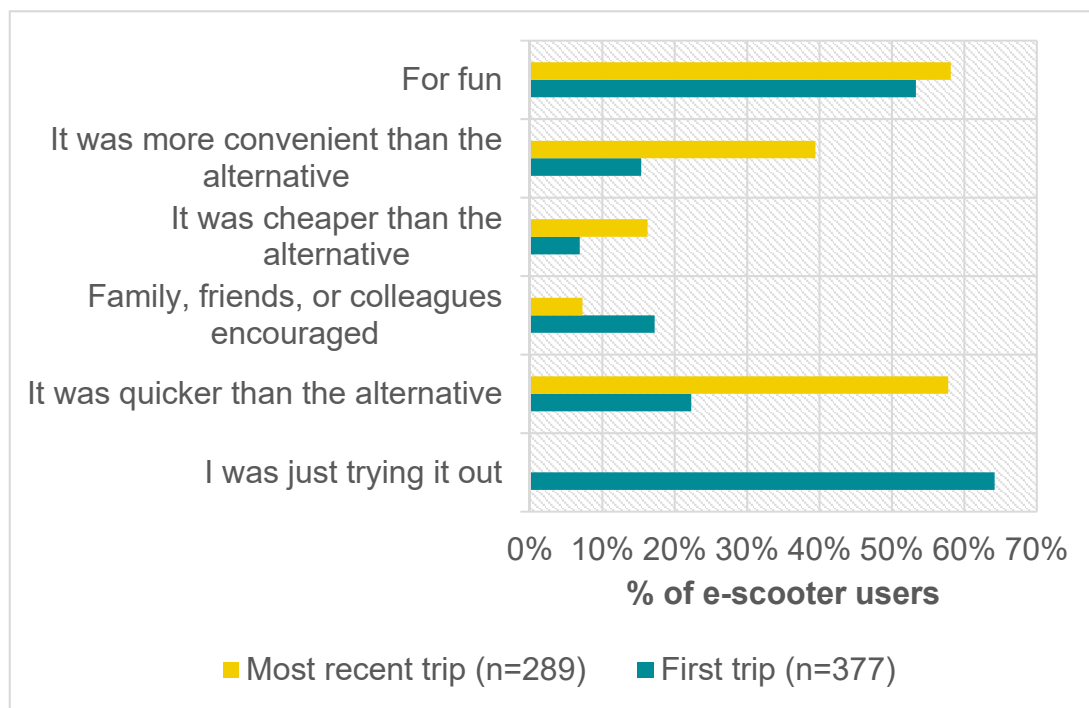
Other modes used to complete a trip – 50% had used another mode



Fitt, H., & Curl, A. (2019). E-scooter use in New Zealand: Insights around some frequently asked questions. Available from: <https://ir.canterbury.ac.nz/handle/10092/16336>

Why are e-scooters being used?

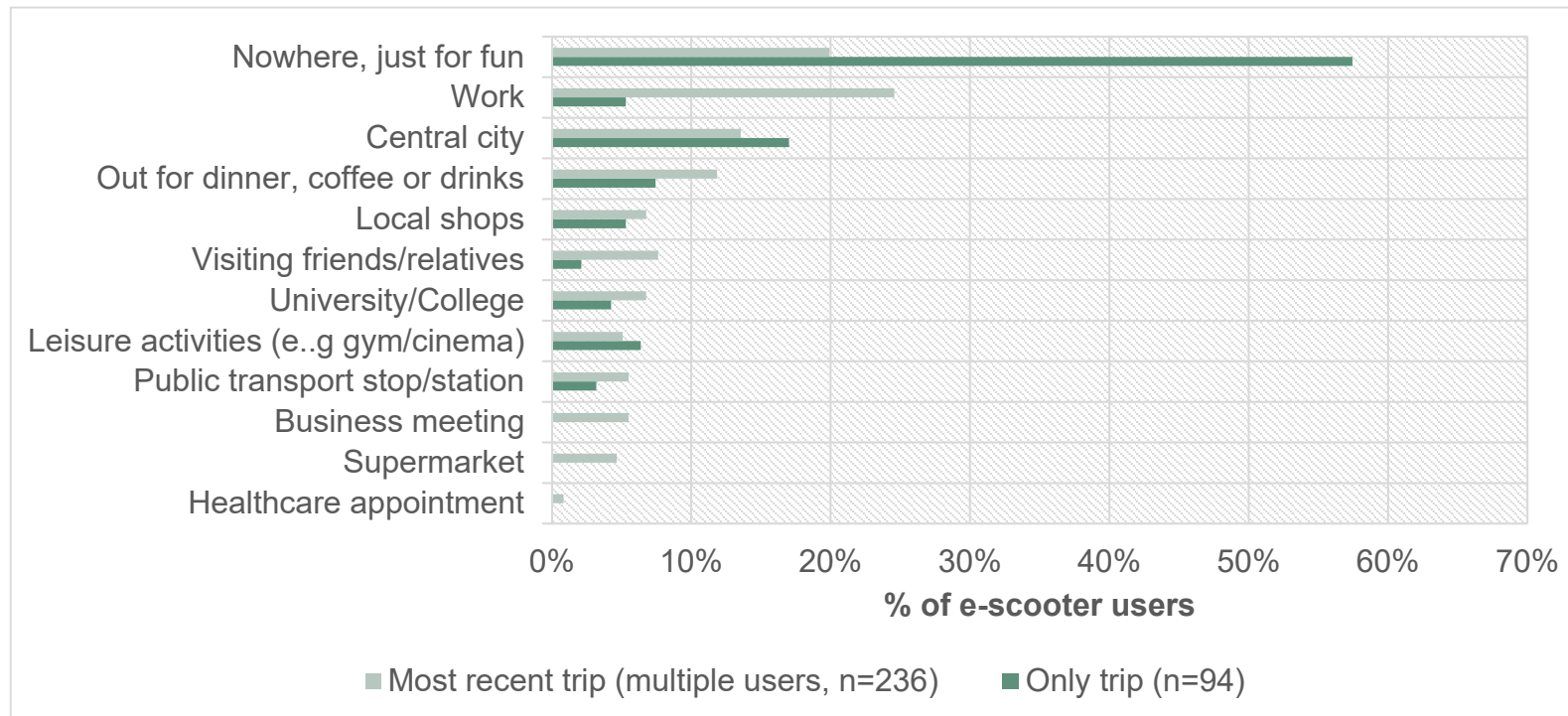
Reasons for use



Source: stuff.co.nz

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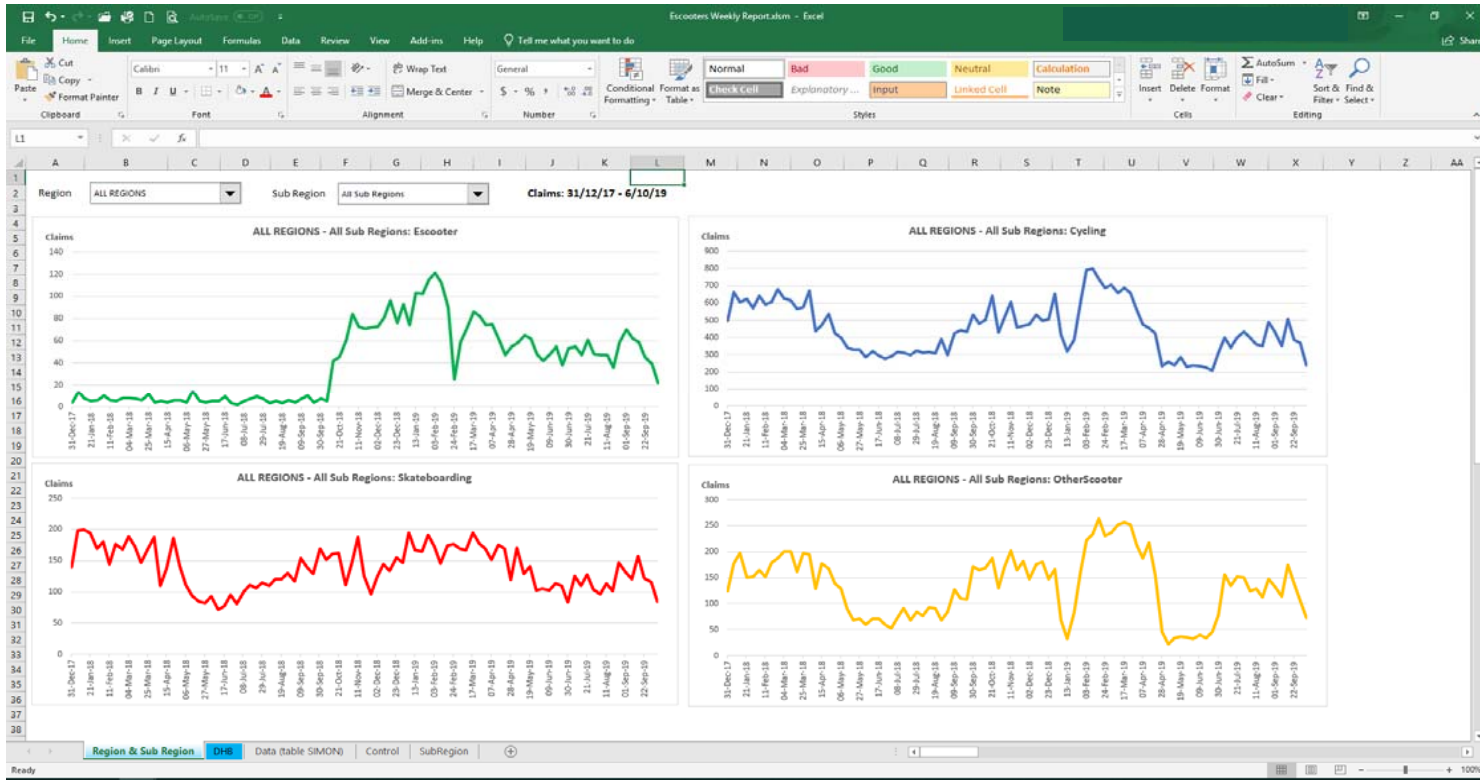
Where are people going on them?



Fitt, H., & Curl, A. (2019). E-scooter use in New Zealand: Insights around some frequently asked questions. Available from: <https://ir.canterbury.ac.nz/handle/10092/16336>

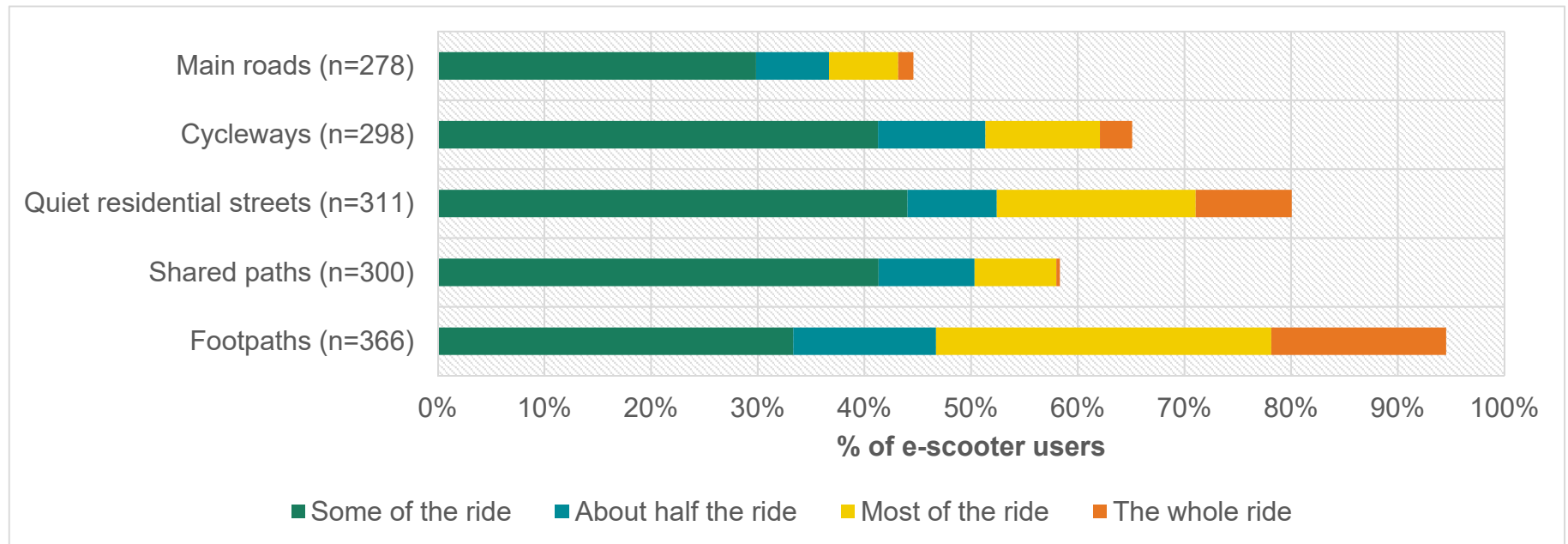
How safely are they being used?

ACC claims per week for e-scooters, push scooters, skateboards and bicycles



Where are they being used?

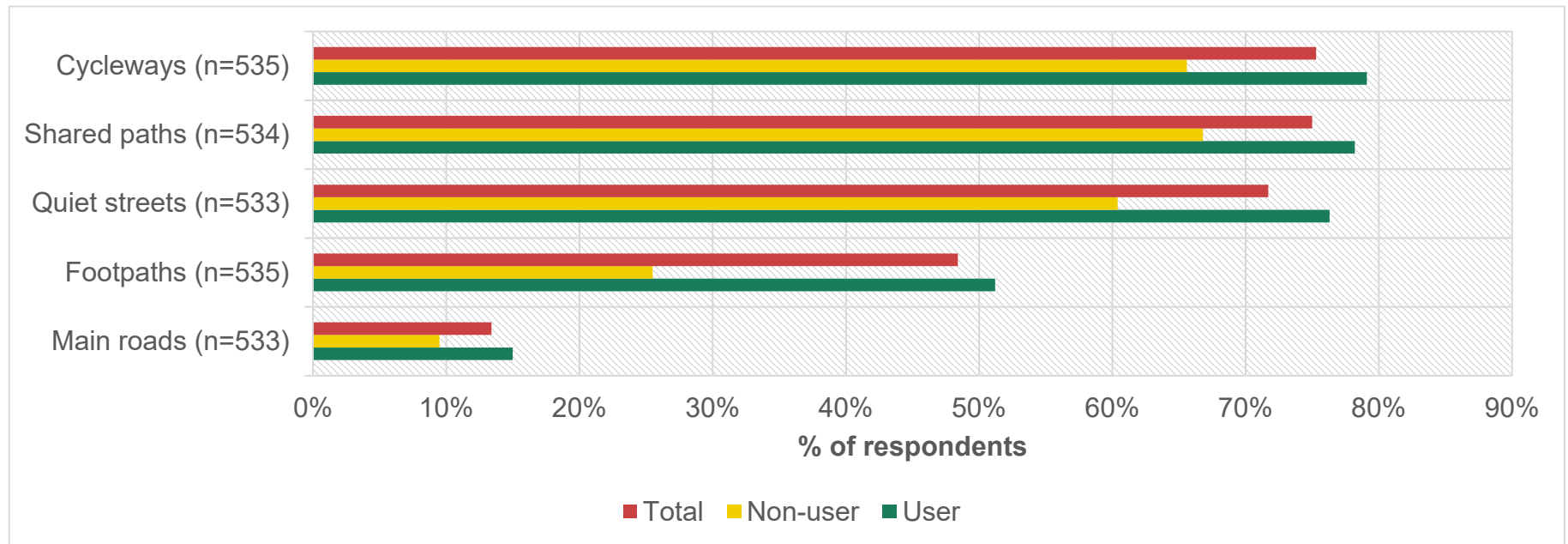
A range of places.....



Fitt, H., & Curl, A. (2019). E-scooter use in New Zealand: Insights around some frequently asked questions. Available from: <https://ir.canterbury.ac.nz/handle/10092/16336>

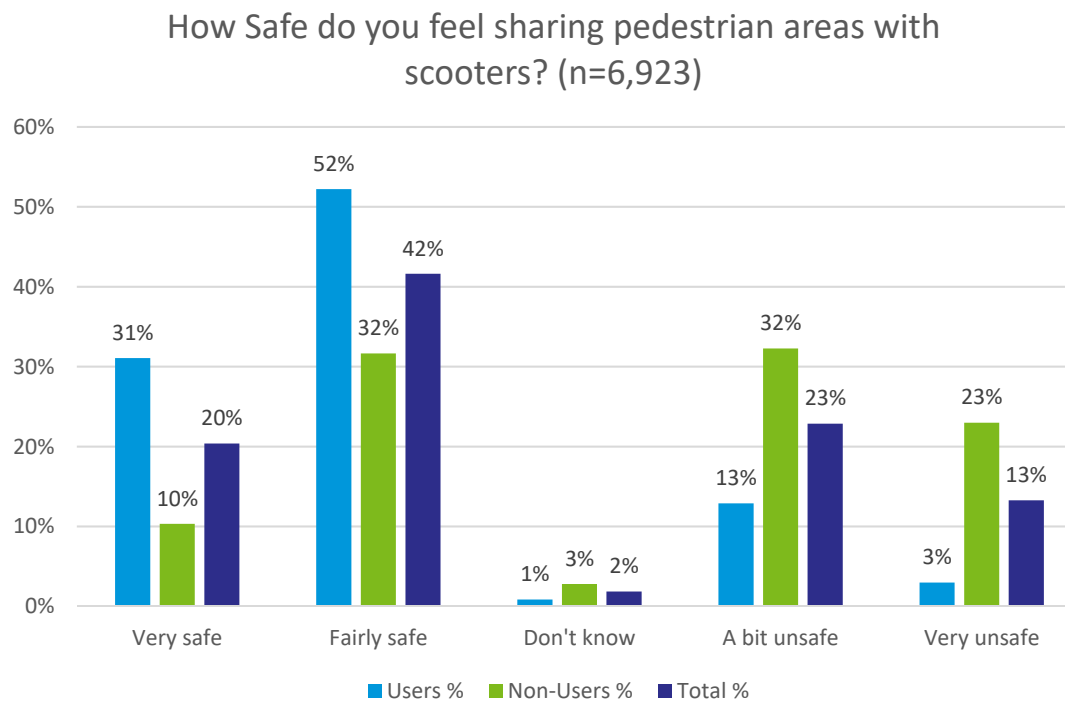
Is this the 'right' place?

Respondents agreeing that each environment is appropriate for e-scooters



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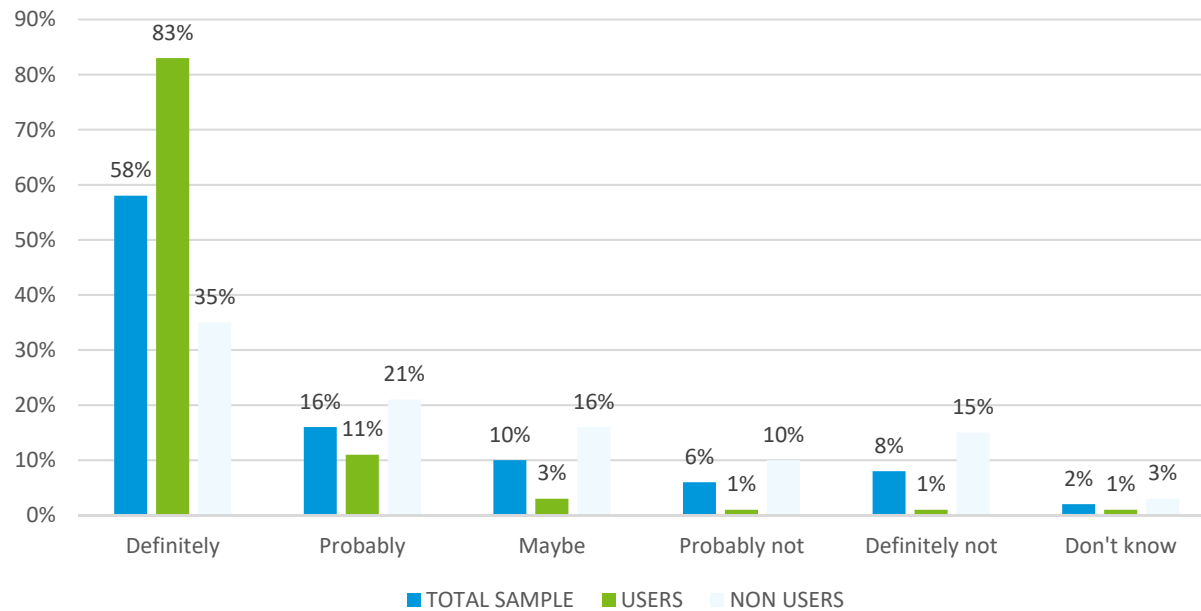
What do people think about them?



Source: Kantar for NZTA, 2019

What do people think about them?

Should e-scooter share companies be allowed to operate in Christchurch after the trial? (n=6,817)



Source: Kantar for NZTA, 2019

Who's using e-scooters?

- E-scooter use varies widely by age
- Users tend to be younger, are more likely to be male and have a higher income
- Survey respondents said they saw e-scooter users as young, students, tourist or business people - often commuting



Source: stuff.co.nz

Summary of surveys

- Considerable positivity towards shared e-scooters and desire for them to operate after trials ends
- Use and interest largely driven by novelty and fun factor and by functional benefits
- Some signs that shared e-scooters have a positive impact on mode change from motor vehicles
- There are important safety concerns, in particular pedestrians feeling unsafe
- This raises broader equity questions around the use of footpaths

How has the media reacted?

How safe are e-scooters? injury numbers are declining but more infrastructure work needed, expert says

Lime's latest e-scooters a 'health and safety issue' for juicers •

If you think Lime scooters are a safety menace, wait till you hear about cars

E-scooters are dominating our cities, but are they safe?

Why Lime scooters are feminist chariots

The benefits of riding an e-scooter outweigh the criticism, says owner •

BUSINESS

How Lime scooters have impacted retail and shopping around Auckland CBD

21 Mar, 2019 11:12am

© 3 minutes to read

What don't we know about them?

- We know people are falling off and we know the injuries they are likely to suffer, **but** we don't have a good picture of **why** they are falling off and **where** because we don't record crashes in CAS
- We can't yet estimate injury exposure rates
- We need more data on who is using them and where they are riding

How do we manage them?

Click to edit text

Some scenarios - what would happen under each?

An elderly pedestrian gets bowled over and breaks a hip after being hit by a:

- hire scooter
- private e-scooter
- child on a push scooter
- mobility scooter
- e-bike
- motor vehicle while using a pedestrian crossing



Current arrangements

Operator	Footpath (RUR 11.1)		Shared path (RUR 11.1A)	
Pedestrian	When practicable, must remain on the footpath when provided Must not unduly impede the passage of a mobility device or wheeled recreational device			Must use the path in a careful and considerate manner Must not use the path in a manner that constitutes a hazard to other persons using it
Cyclist	Not allowed to ride on a footpath		Must not operate the cycle or device at a speed that constitutes a hazard to other persons using the path	May not duly impede the passage of any other user, regardless of priority signed or marked
Mobility device		Must operate the device in a careful and considerate manner		
Wheeled recreational device (e-scooters)	Must give way to pedestrians and drivers of mobility devices	Must not operate the device at a speed that constitutes a hazard to other footpath users		

NZTA's current messages

Targets all e-scooter users (hirers, owners and others) as not everyone knows how to ride them safely.

Aims to increase awareness of key road safety messages for e-scooter use on footpaths. Primarily that e-scooter riders:

- must give way to pedestrians and other footpath users
- must not ride at a speed that's a hazard to themselves or other footpath users
- Should always wear a helmet
- need to be aware that other footpath users can't see or hear them coming
- if they ride on the road keep left when it is safe to do so.



Acknowledgments

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Questions