

## E-scooter use in New Zealand: Insights around some frequently asked questions

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### Key points

- A survey of attitudes to and use of e-scooters in New Zealand cities received 591 useable responses from a convenience sample, distributed through interest groups and social media.
- Respondents to the survey were more likely to be young adults, NZ European, to have a high level of education, and a high income; most were from Christchurch.
- Although not representative of the population, the survey provides some insights into e-scooter use.
- 71% of respondents had used an e-scooter, 29% had not.
- 25% of e-scooter users had used an e-scooter once, 75% had used e-scooters more than once.
- Younger people, men, and those in full-time employment were most likely to use e-scooters.
- First time e-scooter users were most motivated by wanting to have fun and try e-scooter.
- Subsequent e-scooter use was increasingly motivated by practical considerations around the speed and convenience of e-scooters as a means of transport.
- Respondents who had used an e-scooter more than once commonly reported using an e-scooter to travel to work, social engagements, or to shops or supermarkets.
- Most people who had not used an e-scooter had not wanted or needed to use one.
- Concerns about safety, expense, and not being able to wear normal clothes while e-scooter topped the list of practical reasons for not using an e-scooter.
- For those who had used an e-scooter more than once:
  - 57% of e-scooter trips replaced trips that would otherwise have been made by active or sustainable modes (on foot, by bicycle, skateboard, or e-bike).
  - 28% of e-scooter trips replaced a trip by private car or van, motorcycle, ride source vehicle, or taxi.
  - 7% of e-scooter trips were new trips that would not otherwise have been made.
- Over 90% of e-scooter users had ridden on the footpath, only around half (51%) of users and far fewer (26%) non-users think that the footpath is an appropriate environment to ride an e-scooter.
- These results can help to generate better understandings of e-scooter use and can support the development of transport systems with benefits for New Zealand.

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<sup>1</sup> The survey on which this report is based was designed and conducted while both authors were working at the University of Canterbury. Both authors have now moved to other universities but the University of Canterbury has agreed to host results publications to ensure that these are discoverable by survey respondents using location details provided at the time of survey completion.

## Introduction

**The background...**In February and March 2019 we invited people, whether they had used an e-scooter or not, to tell us what they thought about e-scooter use in New Zealand. At that point, Lime e-scooters were available in four areas of New Zealand: Auckland, Hutt Valley, Christchurch, and Dunedin. Prior to the arrival of Lime, e-scooters had not been widely available, but around the end of 2018 and the beginning of 2019 Lime e-scooters arrived, and e-scooters became prominent in practice and in conversation, were regularly featured in media stories, and became increasingly available for personal purchase. Our first survey aimed to capture early data about the use and perceptions of e-scooters and we intend subsequent surveys to explore how the situation evolves over time.

**The long-term context...**Our ongoing work is particularly aimed at exploring the evolving use of new transport technologies. As such, we are taking a long term view and focusing more on questions that will help us to understand change, than questions that help us to understand what is happening *right now*.<sup>2</sup> In a dynamic environment (like that of e-scooter use) snapshot data that capture what is happening at a single moment in time can become quickly outdated. While snapshot data can be useful to support immediate decision making, we are trying to collect data that will help us to address some of the longer term strategic issues around how new transport technologies will influence the way people will get around in future, the kinds of trips people are able to make, and even the way our cities are laid out.

We are using a social practices approach to help us to chart change. This approach focuses on three aspects of the integration of technology into social life: the materials that are available (tangible items including e-scooters, but also built environments), the competencies that are required to use the technology (including, for example, balancing, steering, and perhaps understanding the road rules), and the meanings that are associated with use of the technology (including fashions, stereotypes, stigma, and social norms) (Shove, Pantzar, & Watson, 2012). When we chart the intersections of these three aspects of social practices, we start to get a better understanding of how technology integrates into everyday life.<sup>3</sup>

**This document...**Although our work focuses on big, long-term issues, we do have some data that provide insights into current e-scooter use. This paper addresses some of the questions that we are most commonly asked about e-scooter use in contemporary Aotearoa New Zealand. The particular questions that this paper addresses are:

- Who uses e-scooters?
- Why do people use or not use e-scooters?
- Where are people going on e-scooters?
- Is e-scootering replacing car use?
- Should e-scooters be allowed on footpaths?
- What other questions should we be asking about e-scooter use?

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<sup>2</sup> We recognise that understanding what is happening right now is very important in some contexts; this is, however, not the focus of our work. Several other surveys, often with larger response cohorts than our own, have been conducted with the goal of collecting more immediate data.

<sup>3</sup> If you would like to join our mailing list to be notified when we publish more on this work please just get in touch: [helen.fitt@lincoln.ac.nz](mailto:helen.fitt@lincoln.ac.nz).

**Limitations...** The survey on which this paper is based is not from a representative sample of the New Zealand population. That means that we cannot assume that the results of this survey represent the views of the whole population. In particular, the respondents were more likely than average to be young adults, NZ European, to have a high level of education, and a high income. As 71% of respondents had used an e-scooter, we can also be reasonably confident that respondents were more likely to have used an e-scooter than the general population. We did not allow people who said they were under the age of 18 to complete the survey<sup>4</sup>. We also got considerably more responses from people who live in Christchurch than from people living elsewhere in Aotearoa New Zealand.<sup>5</sup> Some details of the demographic characteristics of the responding cohort are provided in the report and further details are available on request. These limitations mean that we have to treat the results presented here with some caution. We will follow our results up in subsequent surveys; until then, we encourage readers to remember that these are the views of some, but not all, of the New Zealand population.

The survey received 591 useable responses.<sup>6</sup> Not every respondent answered every question. Where the number of people who answered a question was less than 591 we have shown the number of responses in brackets in the format “(n=563)”.

## Who uses e-scooters?

This section gives some background information on our survey respondents, and summarises the characteristics of e-scooter users compared with non-e-scooter users in our survey.

Of the 591 respondents, 29% had not used an e-scooter and 71% had used an e-scooter. Although most of the users had used Lime e-scooters (95%), a considerable proportion (18%) had used a privately owned e-scooter—with half of those owning their own e-scooter. If someone had not used an e-scooter we asked if they had seen one. Figure 1 shows the number of respondents who had used or seen an e-scooter, split by location. This cannot be considered representative of the actual use in different places, but shows the distribution of our survey responses was heavily skewed towards Christchurch. 97% of respondents had seen an e-scooter that was not a Lime shared e-scooter.

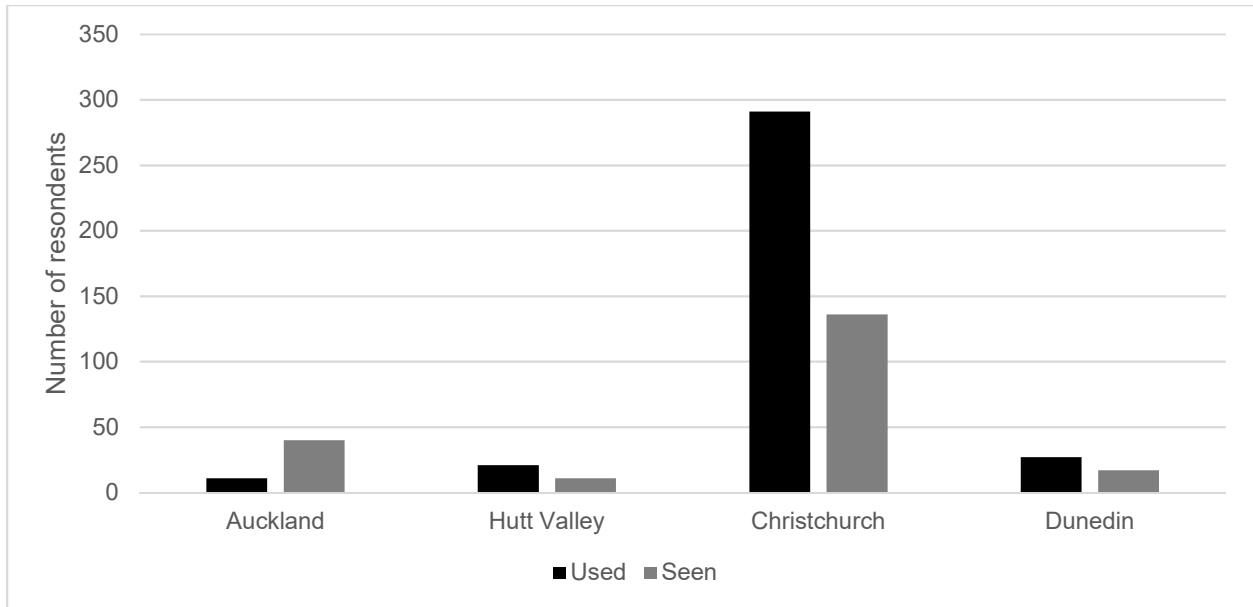
We asked e-scooter users whether they had used an e-scooter once or more than once; 25% of users had only used an e-scooter once, and 75% had used e-scooters on multiple occasions. For ‘multiple users’ (n=296) the mean (average) number of trips taken was 14 (s.d=19), with the maximum number of reported trips being 200.

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<sup>4</sup> Allowing under 18s to answer the survey (especially in a context where Lime explicitly prohibits e-scooter use by minors) would have complicated the ethics of the survey, delayed the exercise, and compromised our ability to collect data early in the evolution of e-scooter use.

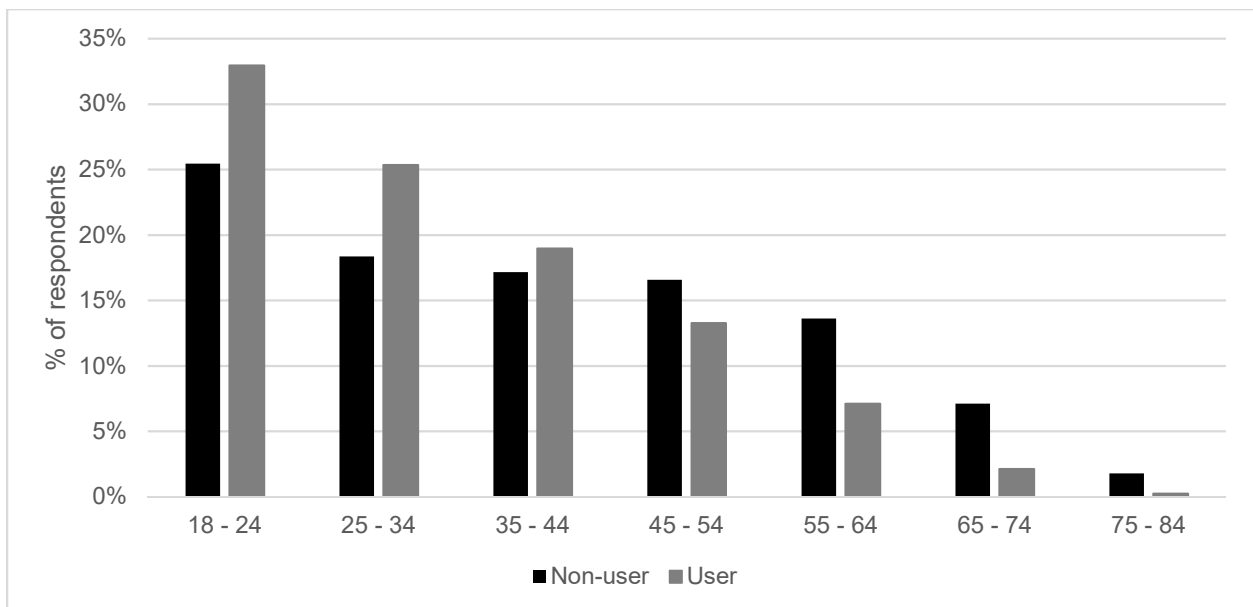
<sup>5</sup> We used convenience sampling to reach participants through existing networks and social media, to some extent explaining the bias in Christchurch, where we are based. While a representative survey would provide better insights into the attitudes of the whole population, in this instance we prioritised a timely and low cost approach (as this research was not funded). This has allowed us to get some early insights into attitudes towards e-scooters, but we acknowledge that this approach has some limitations.

<sup>6</sup> A limited version of the dataset from the survey is available at [doi.org/10.6084/m9.figshare.8056109](https://doi.org/10.6084/m9.figshare.8056109) for use by those wanting to conduct additional analyses.



*Figure 1 - Number of survey respondents who had used or seen e-scooters by location (n=591)*

Figures 2 to 12 show some of the demographic characteristics of our respondents, split according to whether they had used an e-scooter user or not. These graphs cannot be considered nationally representative, but do give some indication of who, within our sample, was more likely to have used an e-scooter. Among our respondents, those in younger age-groups were more likely to have used an e-scooter (Figure 2).



*Figure 2 – Age group of respondents split by user category (n=591)*

Although we had a fairly even number of responses from males and females, males were more likely to have used an e-scooter than females (Figure 3).

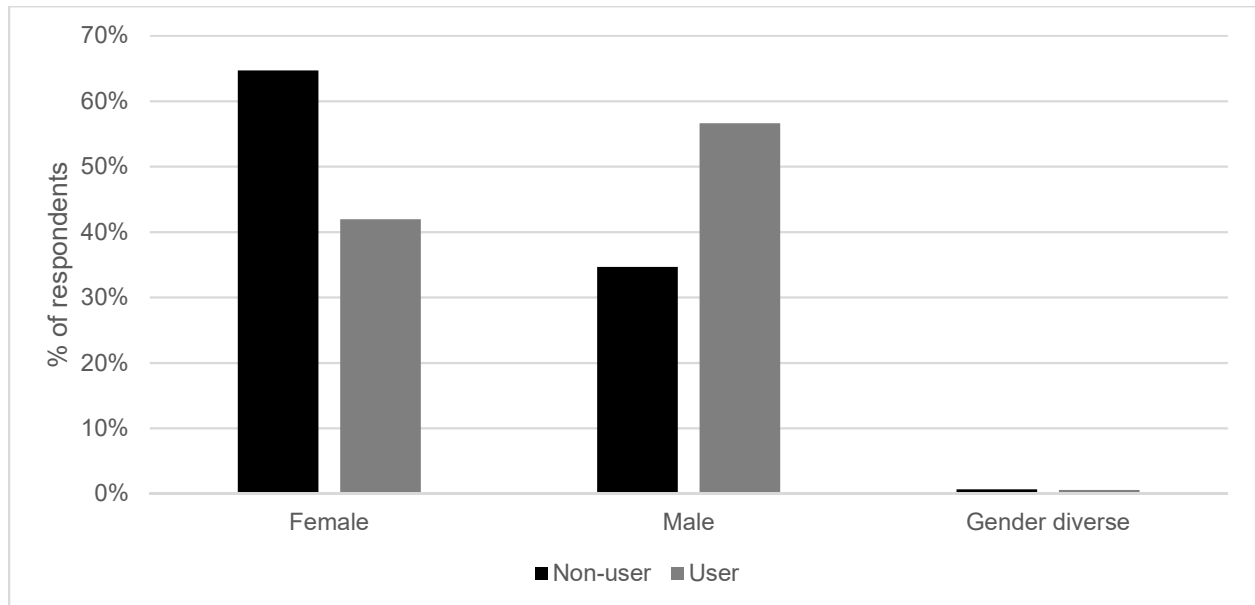


Figure 3 – Gender of respondents split by user category (n=491)

Those with long term health conditions were less likely to have used an e-scooter than those without (Figure 4). However, 40% of those respondents who reported a long term health condition restricting their mobility had used an e-scooter, which, along with some of the free-text question answers provided by respondents, suggests that e-scooters might sometimes be used as a mobility aid by those with restricted mobility. More research on this could be beneficial.

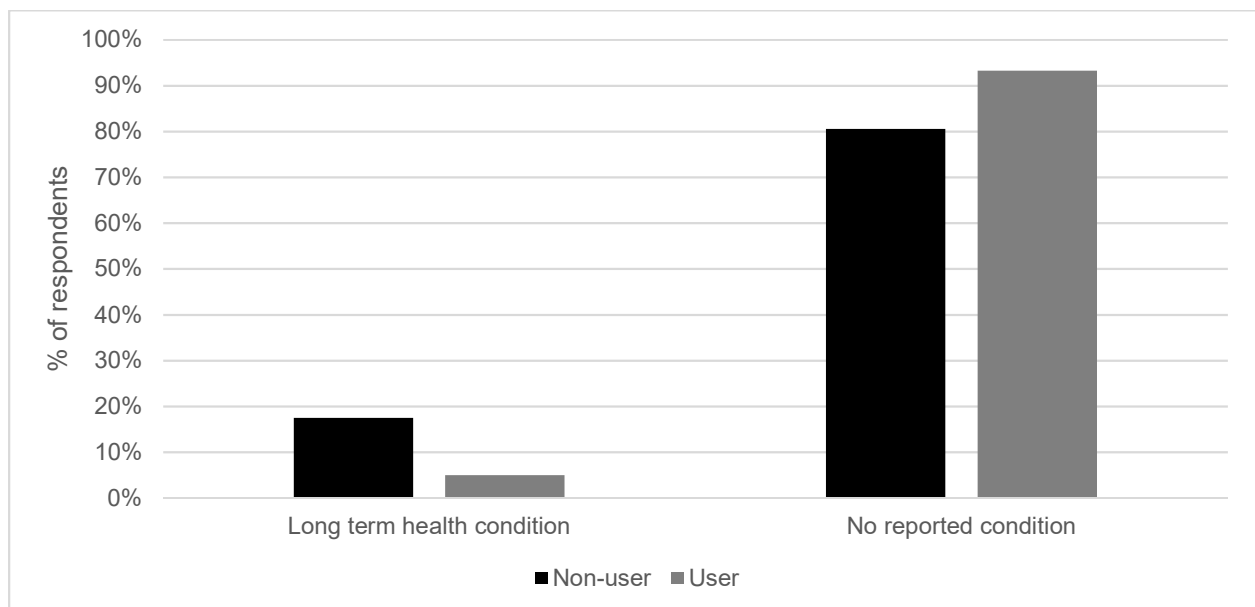
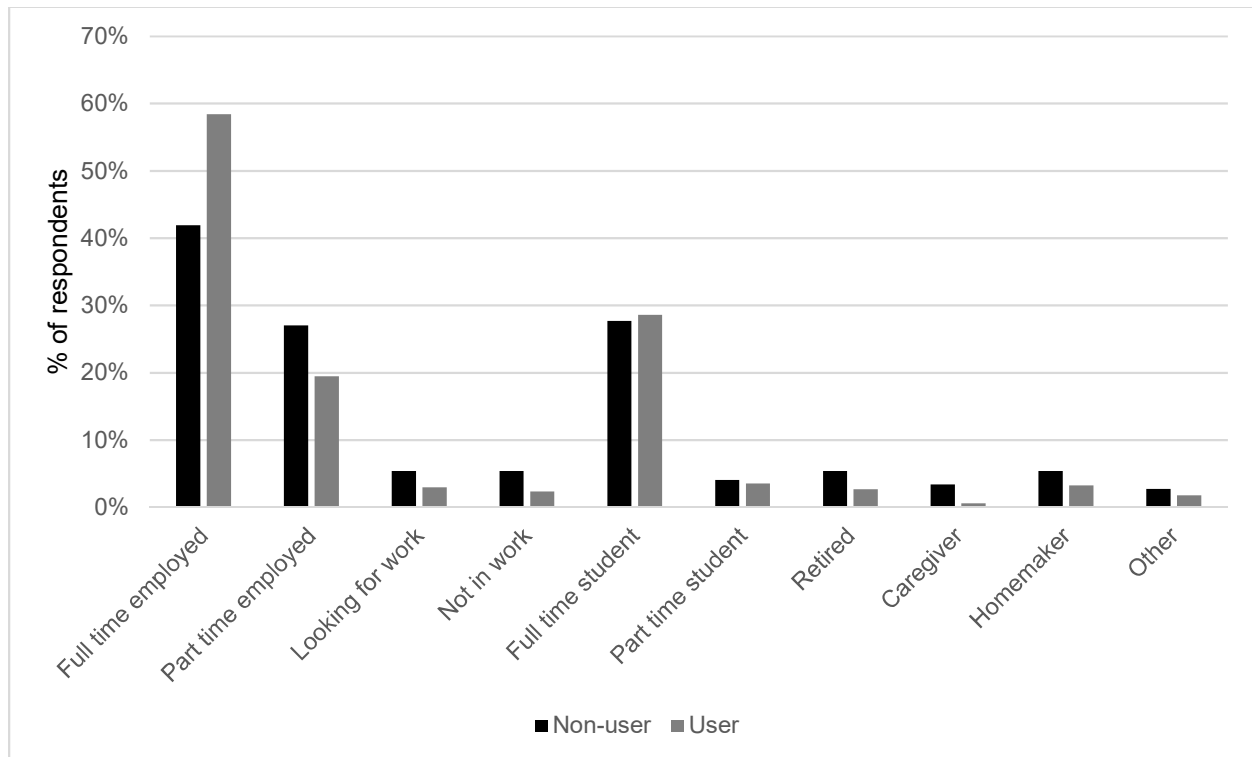


Figure 4 - Long term health conditions by user category (n=480)

E-scooter use was most prevalent among those in full-time employment (Figure 5). Although our sample was biased towards those with higher levels of education, there does not seem to be a strong relationship between education and likelihood of having used an e-scooter (Figure 6). Almost 40% of e-scooter users had a household income above \$100,000 per year, but e-scooter usage was also high among some lower income groups (Figure 7)—this relationship is probably complicated by the number of students in the sample.



*Figure 5 - Employment status of respondents by user category (n=487)*

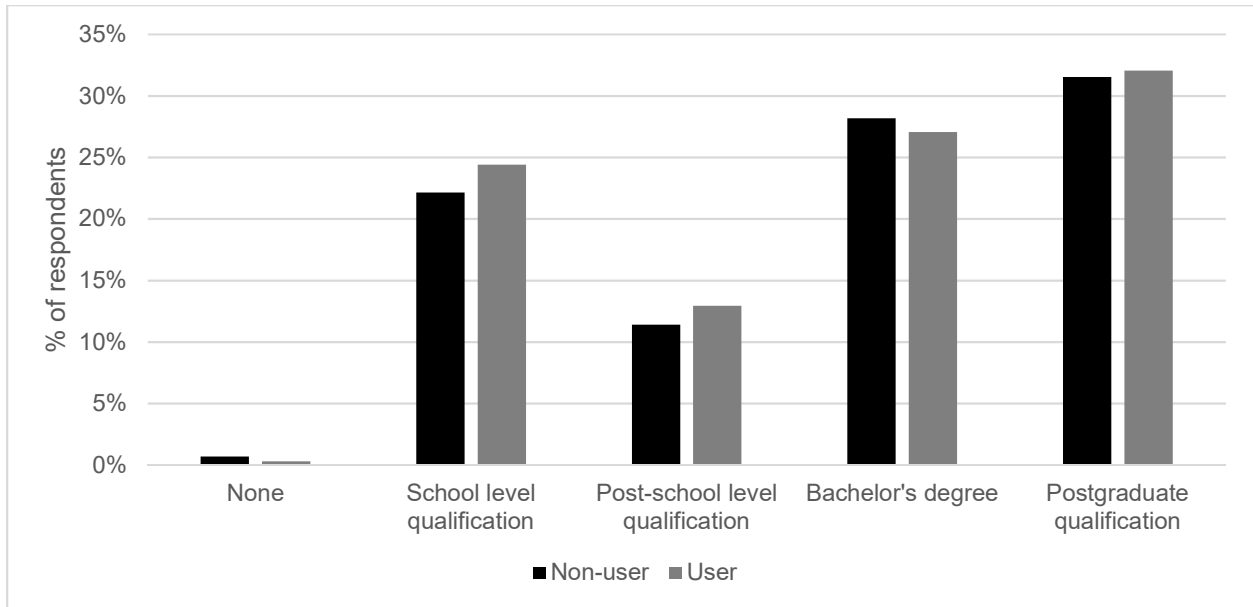


Figure 6 - Highest educational qualification of respondents by user type (n=483)

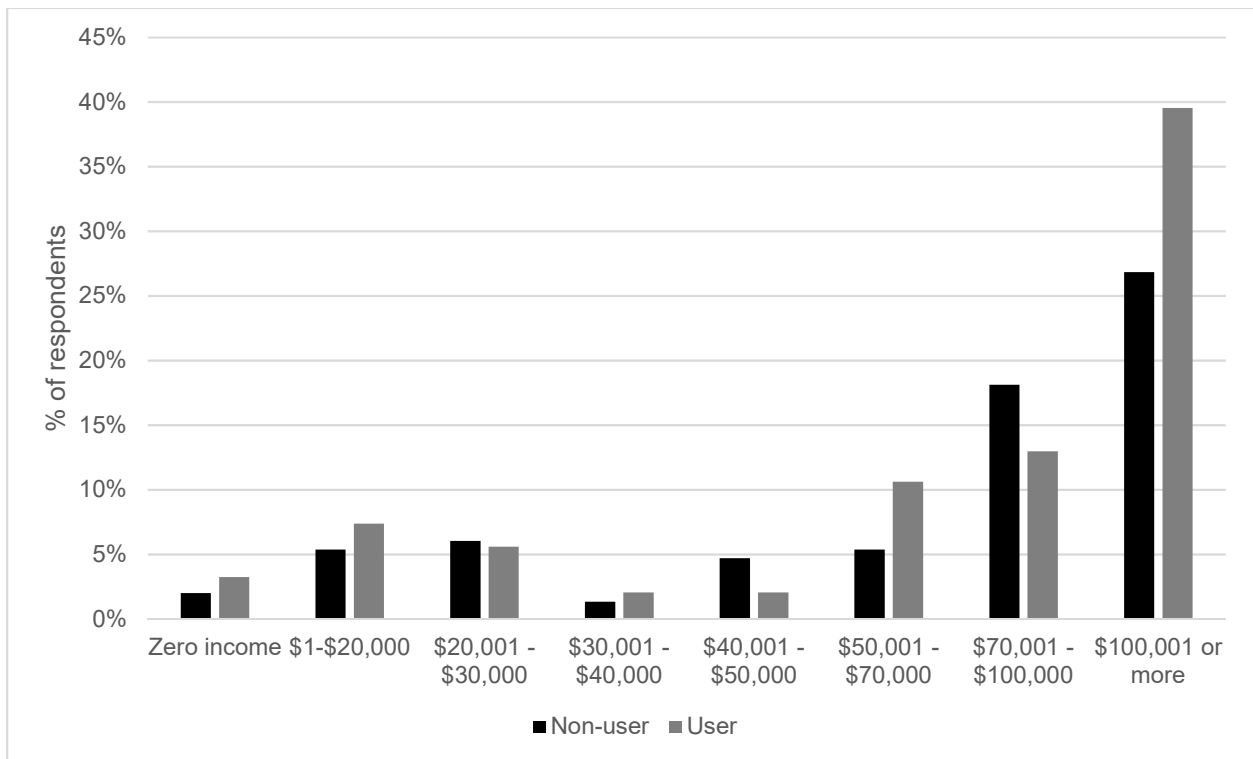


Figure 7 - Household income of respondents by user type (n=387)

Of those who had used an e-scooter, 95% had a driver's licence, whereas only 84% of those who had not used an e-scooter had a driver's licence (Figure 8). Similarly, e-scooter users were more likely to have a car available (70%) than non-users (62%) (Figure 9) and to have more cars in the household (Figure 10), although these associations are not strong.

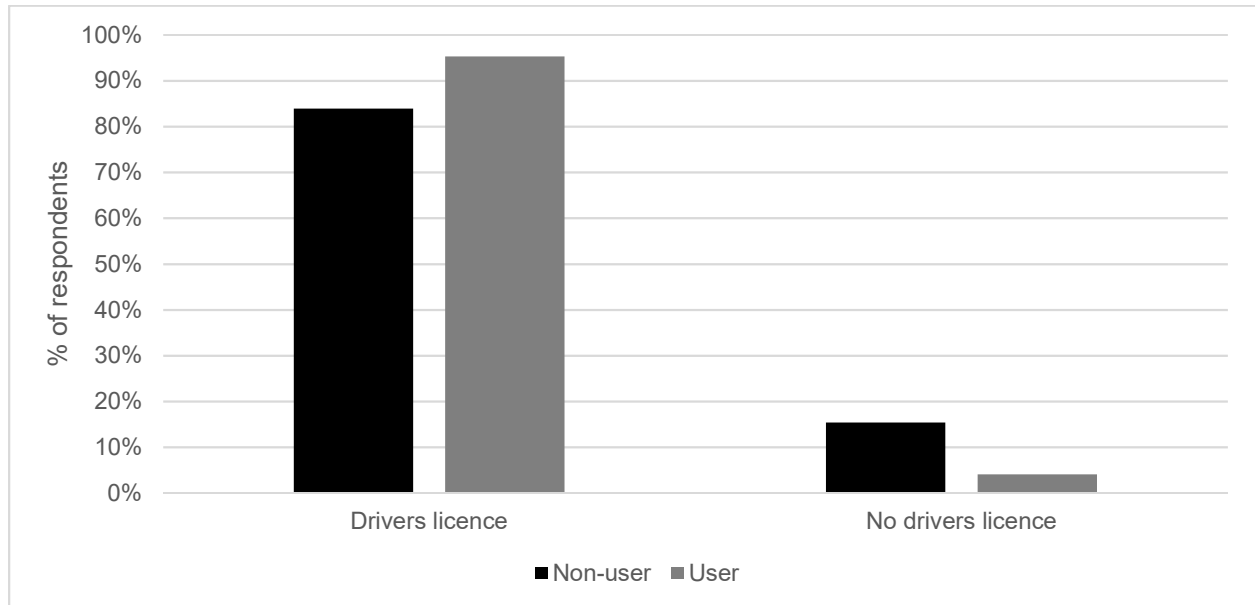


Figure 8 - Drivers licence by user type (n=486)

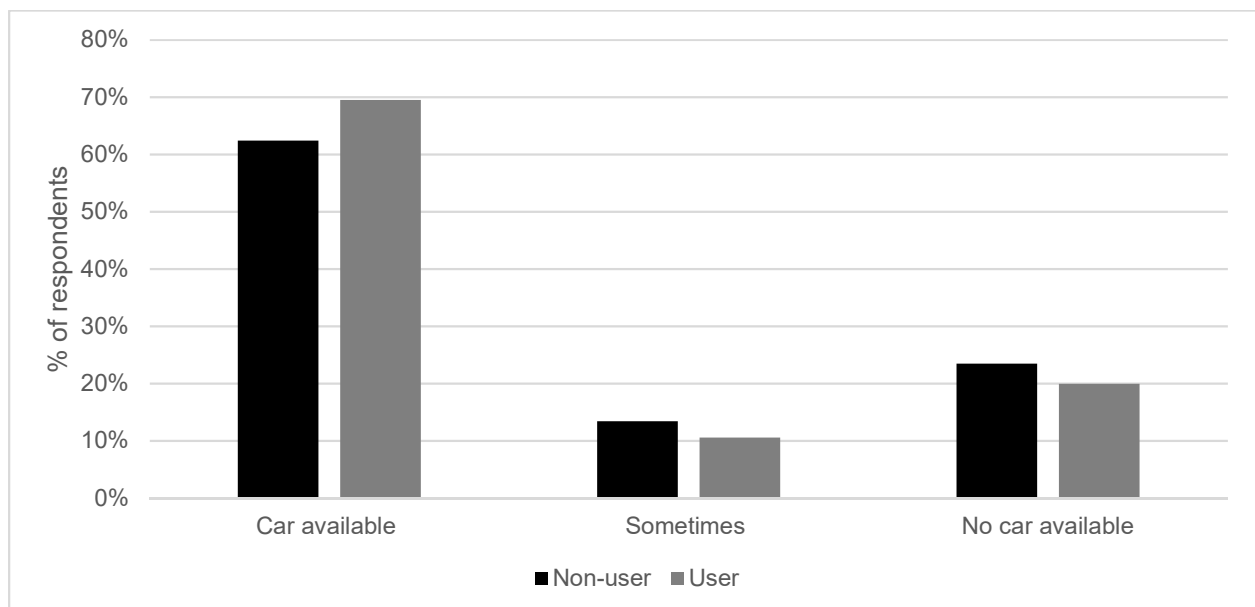
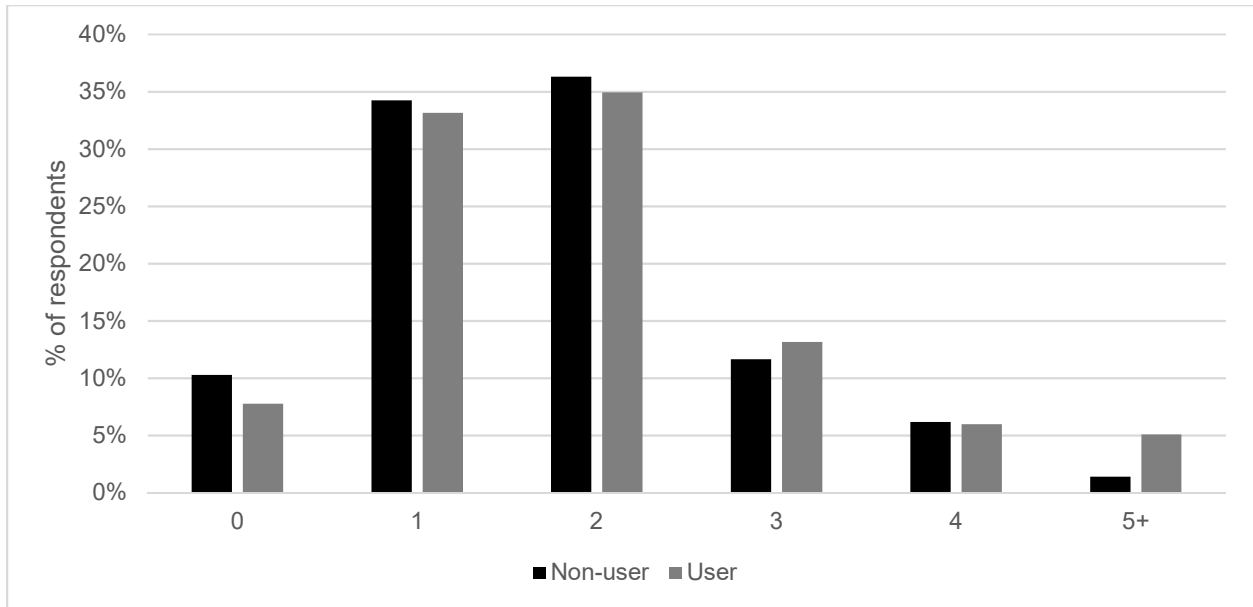


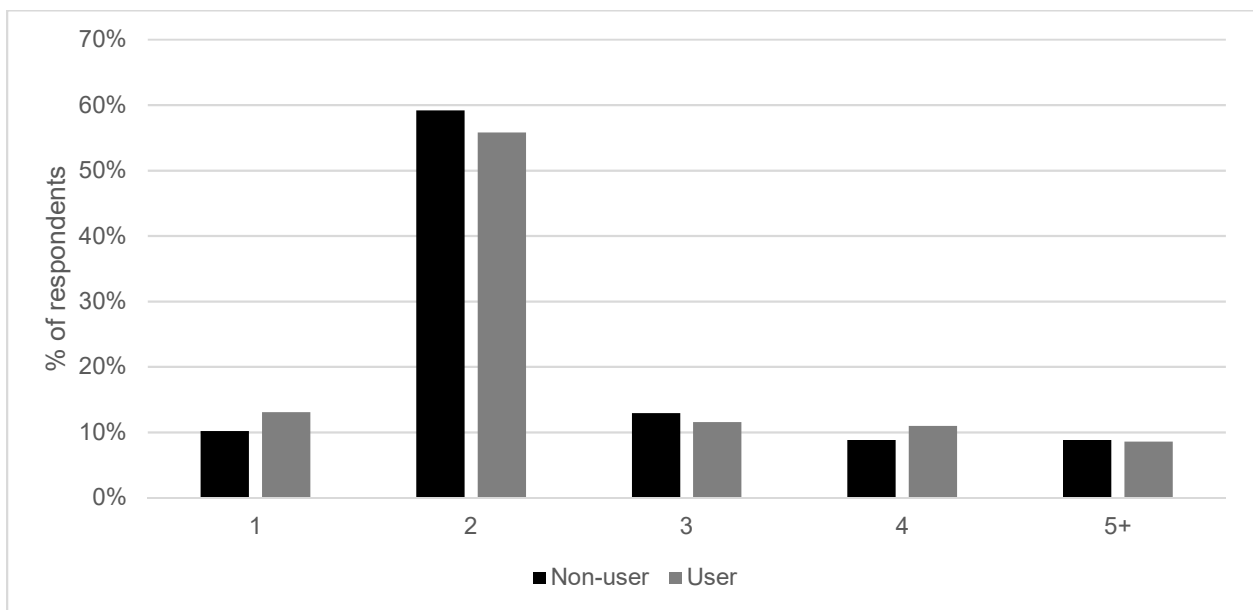
Figure 9 - Car availability by user type (n=489)





*Figure 10 - Number of cars in household by user type (n=481)*

There are no notable differences in the number of adults or children in the households between users and non-users (Figure 11 and Figure 12).



*Figure 11 - Number of adults in household by user type (n=484)*

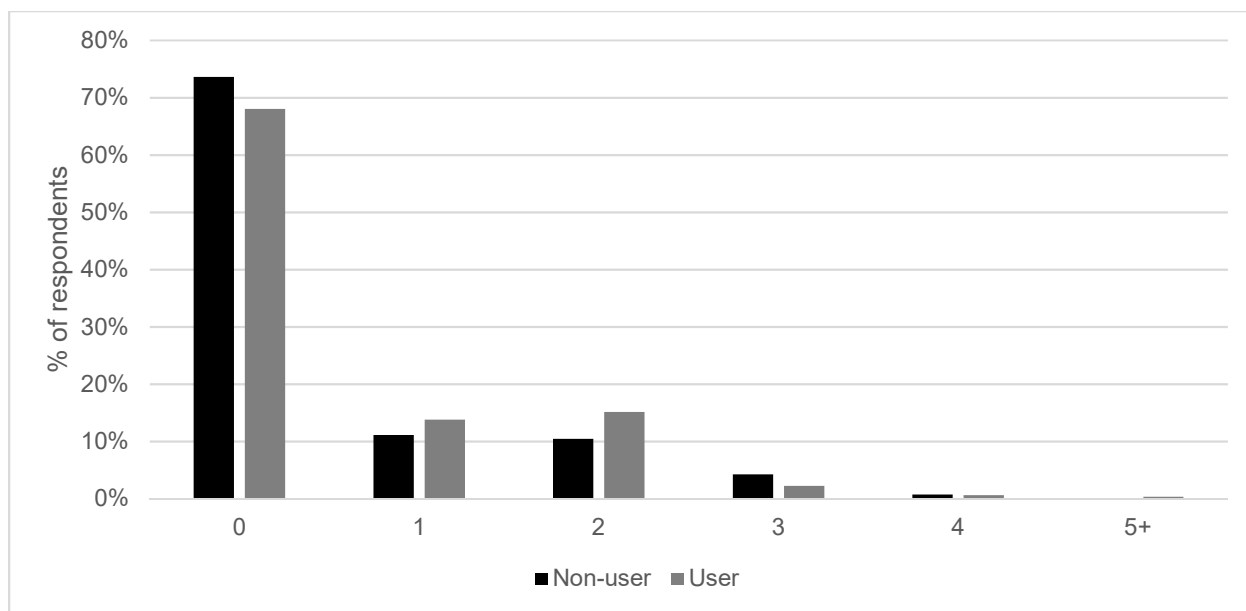


Figure 12 - Number of children in household by user type (n=469)

### Why do people use or not use e-scooters?

We asked survey respondents who had used an e-scooter on at least one occasion why they had used an e-scooter (Figure 13). Respondents could choose multiple reasons for e-scooter use. The first time respondents used an e-scooter it was most likely to be to just try out e-scooters or for fun. Subsequent use was still likely to be motivated by fun but respondents were more likely to note practical considerations like e-scooters being quicker or more convenient than an alternative. This change in focus suggests that we might see people's reasons for using e-scooters evolving over time and that e-scooters may gradually become less of a novelty and more of a practical transport option integrated into everyday transport choices.

We also asked people who had not used an e-scooter why they had not done so (Figure 14). Again respondents were able to give multiple answers. Most respondents (76%) reported at least one of, not having wanted to use an e-scooter or had not having needed to do so. Just under a third (29%) of respondents reported that they had not got around to trying an e-scooter yet. Concerns about safety (35%), expense (39%), and not being able to wear normal clothes while e-scooter (21%) topped the list of practical reasons for not using an e-scooter.

Subsequent surveys will allow us to establish whether the reported reasons for using or not using an e-scooter change over time.

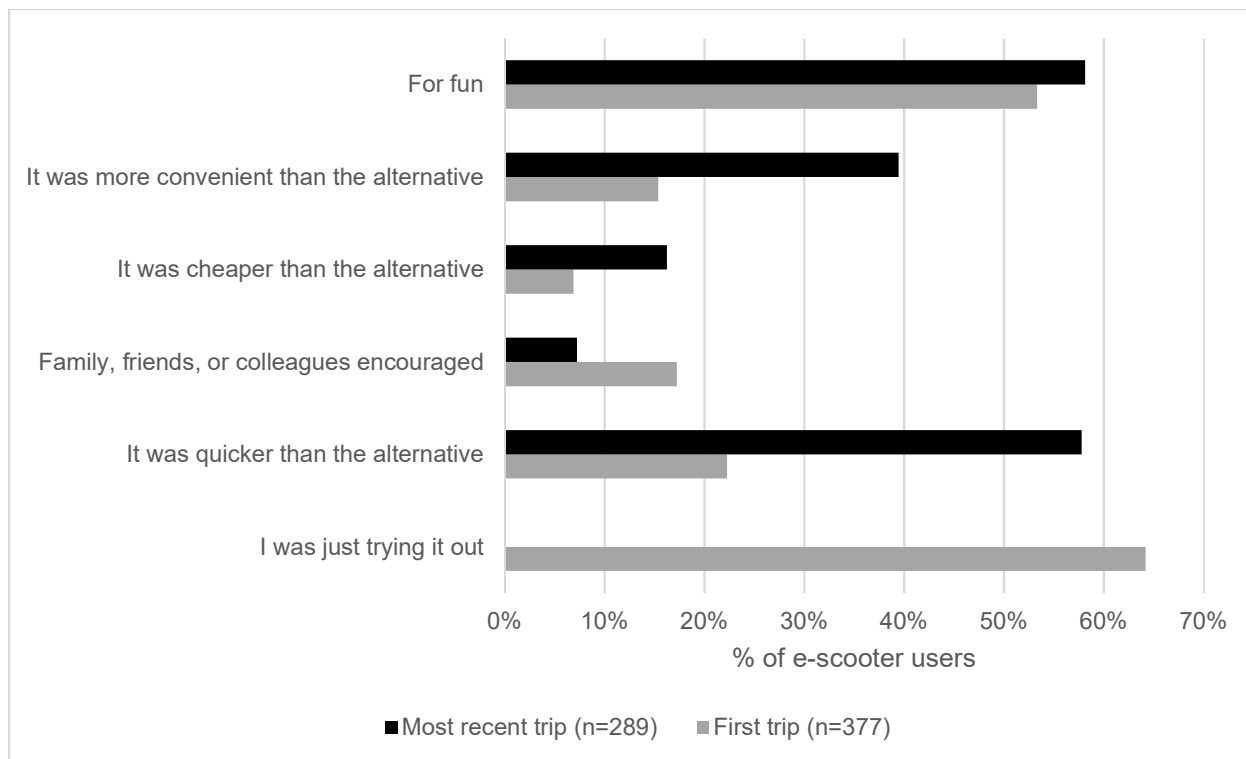


Figure 13: What motivated respondents to use an e-scooter?

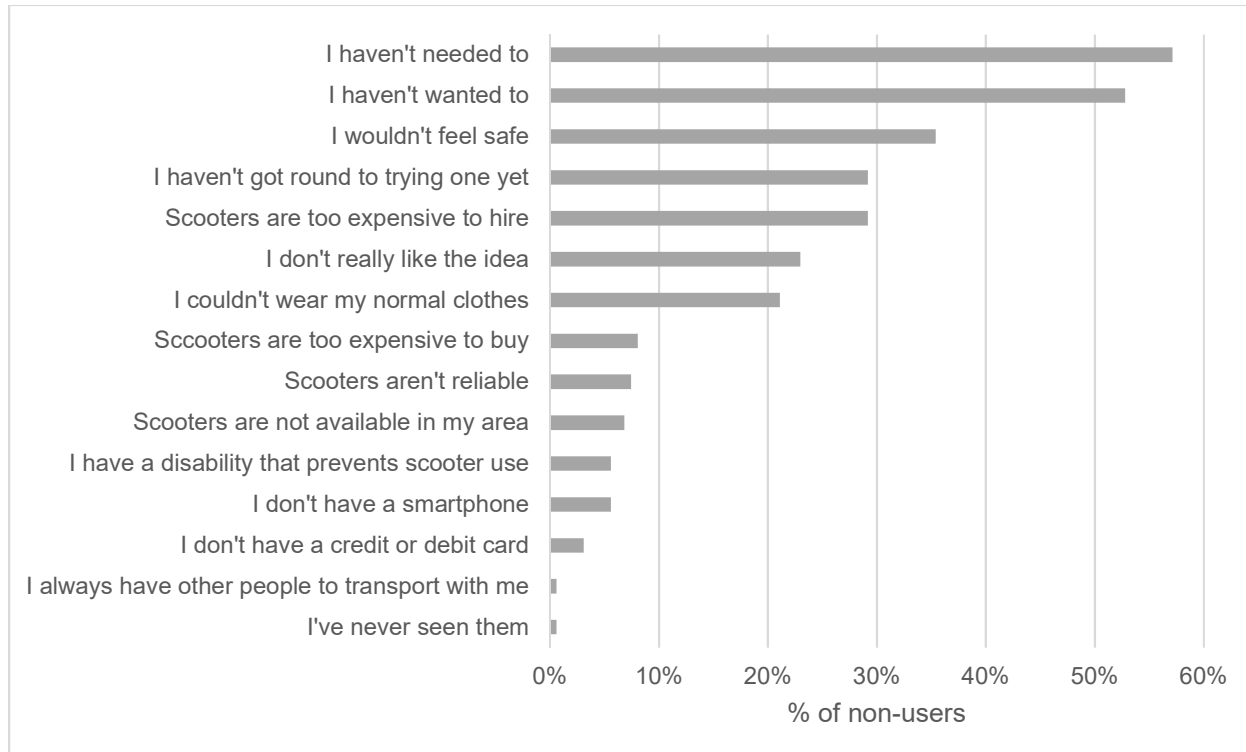


Figure 14: What discouraged respondents from using an e-scooter? (n=161)

## Where are people going on e-scooters?

We asked e-scooter users about the kinds of trips for which they used e-scooters. If someone reported using an e-scooter only once, we asked them where they went to or from on that e-scooter trip. If someone reported using an e-scooter more than once, we asked them both where they went to or from on their most recent e-scooter trip and also asked them about all the destinations they had ever travelled to or from on any e-scooter trip. Responses are shown in Figure 15.

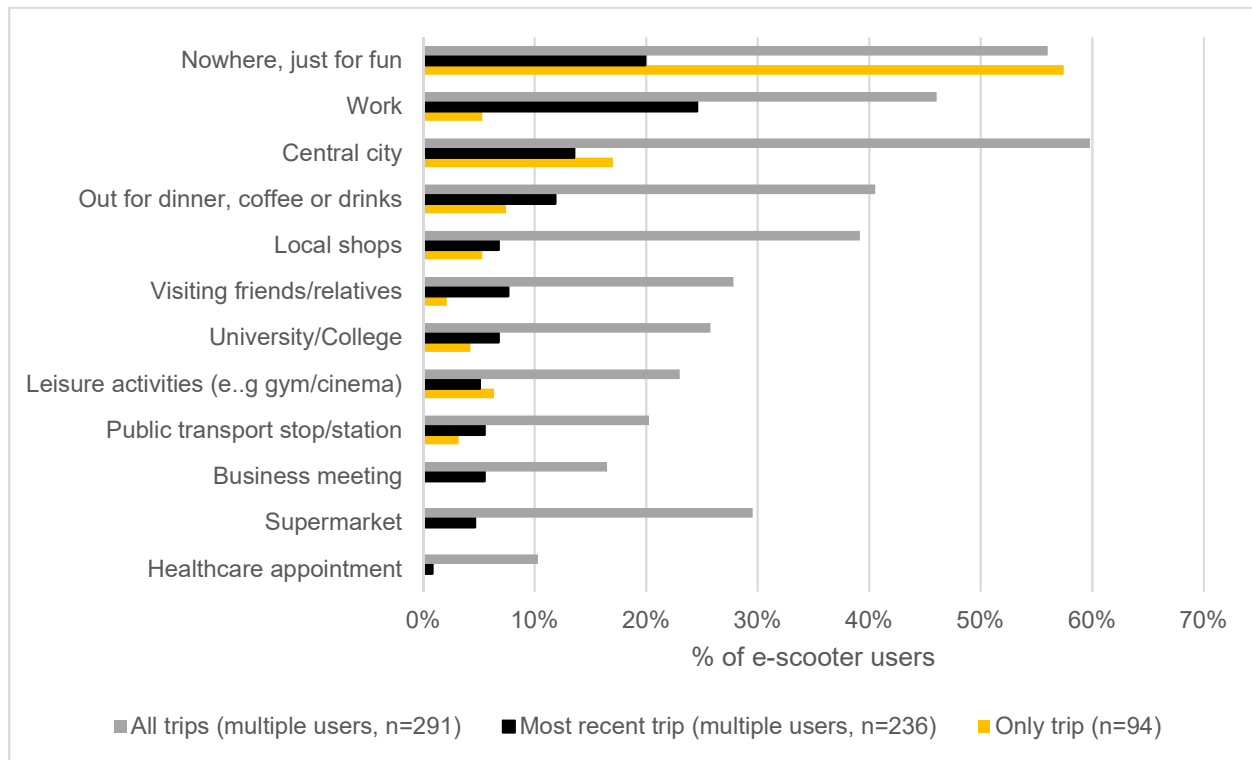


Figure 15: Where were e-scooter users travelling?

People who had only used an e-scooter once were most likely to have used it just for fun and to not actually have travelled anywhere. This aligns with the earlier finding that a first e-scooter use was usually motivated by a desire to try e-scooters out or just to have fun, rather than by the practicality of e-scooter use as a transport option.

However, people who had used an e-scooter more than once were still likely to travel for fun, but were also more likely to use an e-scooter to travel to work, to social engagements, or to shops or supermarkets. This suggests that after a first experimental e-scooter use, e-scooters may be increasingly incorporated into everyday transport choices.

## Is e-scooter replacing car use?

Lime reports that globally its services (including e-scooters, bicycles and e-bikes—only e-scooters are available in Aotearoa New Zealand) enable people to reduce their car use and switch to more environmentally friendly modes of transportation (Lime, 2019). We are often asked if our data support Lime’s claims about reducing car use, or whether e-scooter use might replace walking trips, having negative effects on active travel.

The picture here is a little complex. We asked survey respondents who had used an e-scooter (whether it was a Lime e-scooter or not) how they would have travelled if they had not used an e-scooter. Those respondents who had used an e-scooter more than once, were more likely to replace a car trip than those who had only used an e-scooter once. Again, here we may be seeing a change in everyday travel patterns and it may be the case that e-scooter use will replace more car trips as it becomes increasingly embedded in everyday life.

Given that we know that many first uses of e-scooters are to try it out, or for fun, we focus here on those who have used an e-scooter more than once. Figure 16 shows that around half (51%) of our respondents who had used an e-scooter more than once would have walked if they had not used an e-scooter for their most recent trip. A further 6% would have used a bicycle, skateboard, or e-bike and 7% would not have travelled. So for 64% of trips, using an e-scooter does not appear to have offered a more environmentally friendly mode of transportation for our respondents, and in 57% of cases e-scooter use had replaced more active travel modes.

However, 28% of respondents who had used an e-scooter more than once reported that they would have used a private car or van, motorcycle, ride source vehicle (e.g. Uber), or taxi to make their most recent trip if they had not used an e-scooter. For our respondents then, e-scooter use is reducing car use in just over a quarter of cases. Let’s remember that here we are talking about a quarter of e-scooter trips<sup>7</sup> replacing car trips—this does not suggest that a quarter of all car trips could be replaced by e-scooter.

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<sup>7</sup> Note that e-scooter hire operator data is currently the best data source for total number of e-scooter trips made.

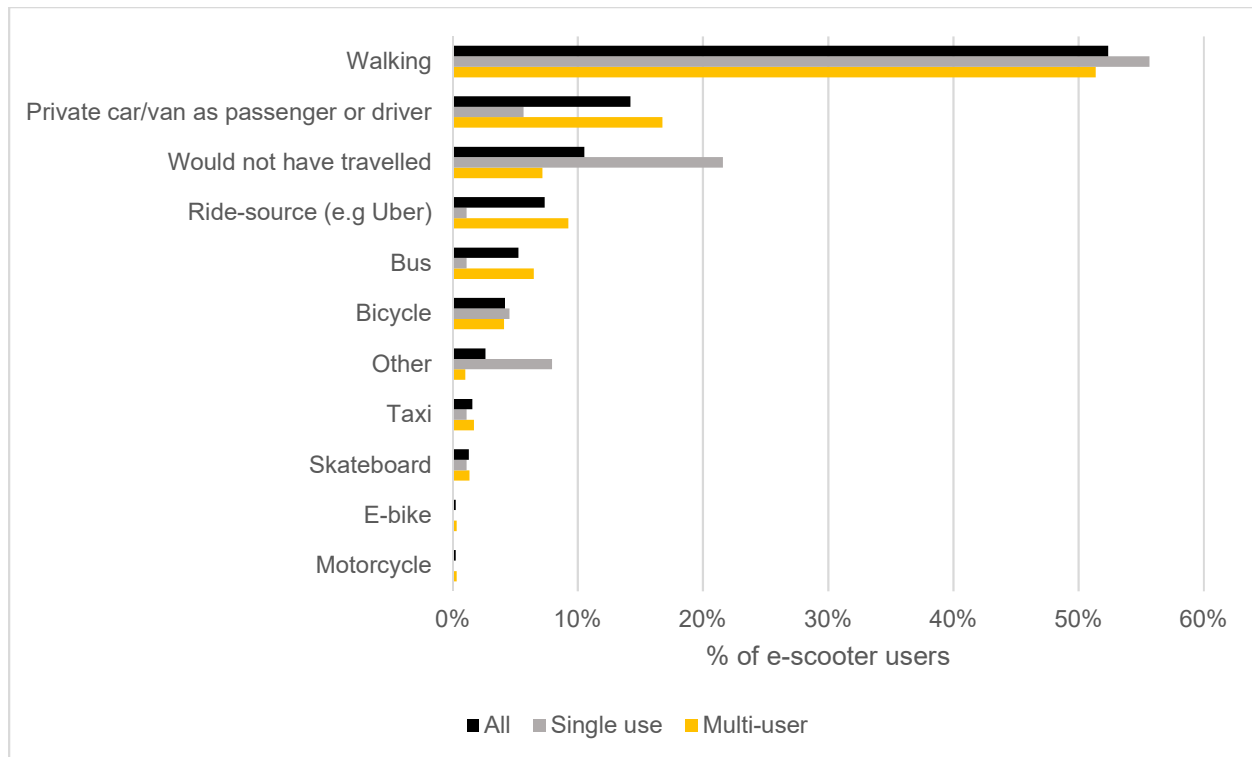


Figure 16: How would respondents have travelled if they had not used an e-scooter? (n=380)

Table 1 shows the mean e-scooter trip distance by the mode that would have been used by respondents if they had not used an e-scooter for their most recent e-scooter trip. This gives some indication of the potential of e-scooters to replace short distance car trips, of around 3km.

Table 1 – Mean trip distances by alternative mode (n=345)

Alternative mode	Mean (km)	Standard deviation
Walking (n=184)	1.55	1.12
Private car/van as driver or passenger (n=50)	2.71	2.14
Would not have travelled (n=31)	2.42	3.15
Ride-share (e.g. Uber) (n=27)	2.20	2.03
Bus (n=19)	2.26	1.88
Bicycle (n=15)	1.89	1.66
Taxi (n=5)	3.68	1.52
Skateboard (n=5)	1.74	0.80
<b>Total</b>	<b>1.92</b>	<b>1.76</b>

Table 2 shows the mode of transport that respondents said they would have used for their most recent trip if they had not used an e-scooter; this is broken down by type of destination for the trip (note that care needs to be taken in interpretation of this table as numbers become quite small once results are

broken down in this way). Across all destinations, walking remains the most likely replacement mode, but there are some interesting differences according to destination. For example, 29% of trips in the central city would not have been taken if the respondent had not used an e-scooter. This may suggest that e-scooters can support the revitalization of the central city through new trip generation, although further research would be needed to support this suggestion. Further, 29% of trips to the central city would otherwise have been undertaken by bicycle and 24% by bus. The intersection of bus and e-scooter use raises questions about the interaction between micro-mobility services and public transport and about multi-modal trips more generally.

*Table 2 - Mode that would otherwise have been used by destination (most recent/only trip)(n=315)*

	Would not have travelled	Private car/van as passenger or driver	Bicycle	Walking	Taxi	Ride-source (e.g uber)	Bus	Skateboard	Motorcycle	Other
Work (n=61)	5%	13%	5%	56%	3%	3%	13%	-	-	2%
Supermarket (n=11)	36%	9%	-	45%	-	-	9%	-	-	-
Local shops (n=22)	5%	18%	-	59%	-	9%	5%	5%	-	-
University/College (n=20)	5%	5%	-	75%	-	5%	5%	-	-	5%
Healthcare appointment (n=1)	-	100%	-	-	-	-	-	-	-	-
Business meeting (n=13)	15%	15%	-	54%	-	15%	-	-	-	-
Central city (n=17)	29%	12%	29%	-	-	6%	24%	-	-	-
Visiting friends/relatives (n=20)	10%	-	10%	45%	-	30%	-	5%	-	-
Out for dinner, coffee or drinks (n=29)	3%	21%	3%	62%	3%	3%	3%	-	-	-
Leisure activities (e.g gym/cinema) (n=17)	12%	12%	53%	-	-	6%	12%	6%	-	-
Public transport stop/station (n=16)	-	6%	-	50%	-	6%	31%	6%	-	-
Nowhere, just for fun (n=89)	26%	11%	2%	54%	-	1%	1%	3%	1%	-

The question of whether e-scooters can support multi-modal trips is important to whether they can reduce car use. E-scooters are sometimes describes as a ‘last-mile’ solution for public transport journeys, allowing people to quickly and easily move between public transport stops or stations and nearby destinations. Half of respondents who had used an e-scooter, had only used it for part of their journey. Figure 17 shows other modes used as part of the same trip. In 28% of cases, e-scooters were used alongside public transport (bus or train) supporting the idea that e-scooters facilitate public transport connections in some cases. A substantial number of trips also included a walk—which may be the walk to the e-scooter, or may mean that the distance covered by walking can be extended with the support of an e-scooter. E-scooters may also be supporting car-trips (27%), for example by allowing people to park more easily further away from a destination and complete the trip by e-scooter.

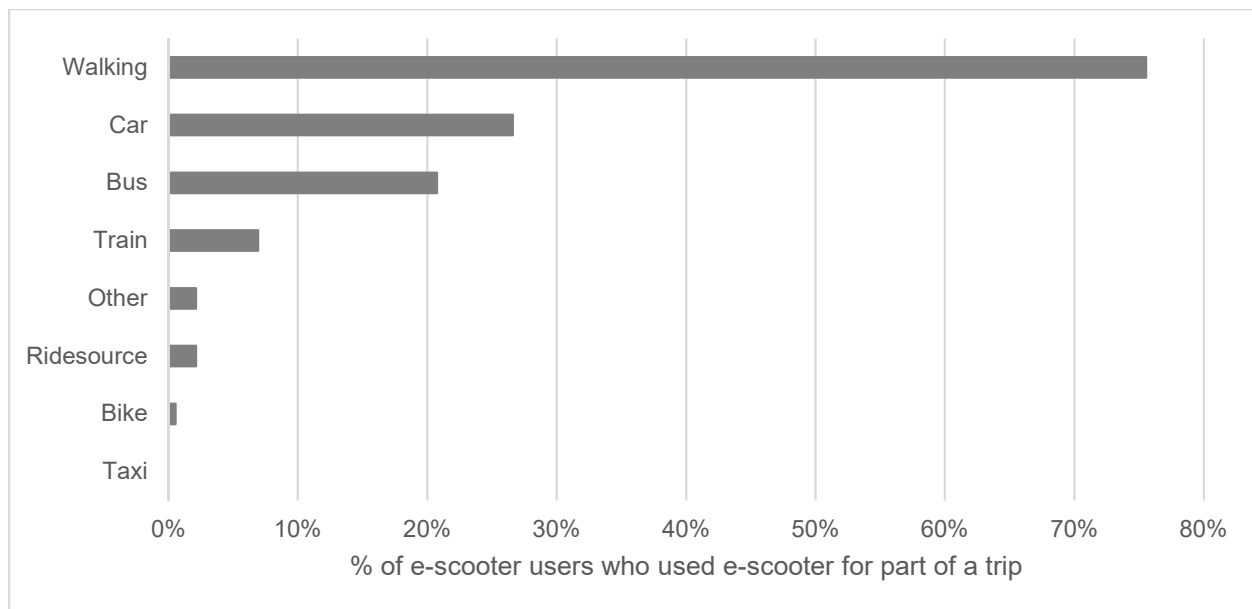


Figure 17 – Other modes used to complete a trip along with an e-scooter (n=188)

### Should e-scooters be allowed on footpaths?

One issue that has received extensive media coverage is the use of e-scooters on footpaths (see for example Keall, 2019). We asked our survey respondents several questions about e-scooter use in different environments. Over 90% of e-scooter users had ridden on the footpath for at least part of a journey. However, only around half (51%) of users and far fewer (26%) non-users think that the footpath is an appropriate environment to ride an e-scooter. Even when we look specifically at those who have reported using an e-scooter on the footpath, only 59% agreed that this is a suitable environment for e-scooter use. Most respondents thought that cycleways, shared paths, and quiet streets were suitable environments. This is interesting given that legally e-scooters are currently not allowed to use cycleways.

We suggest that this disconnect between where users are riding e-scooters and where they think it is appropriate to do so indicates a lack of suitable environments for e-scooter use.



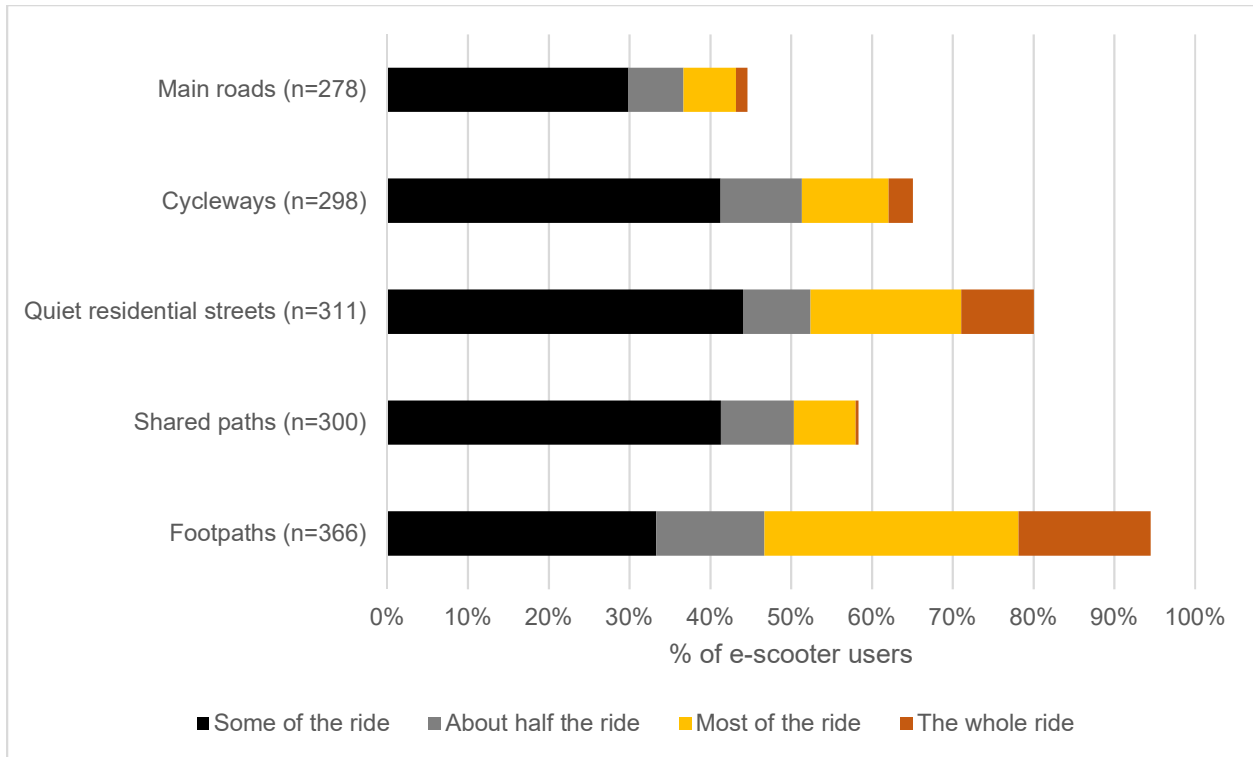


Figure 18: Environments used by e-scooter users on their most recent e-scooter ride

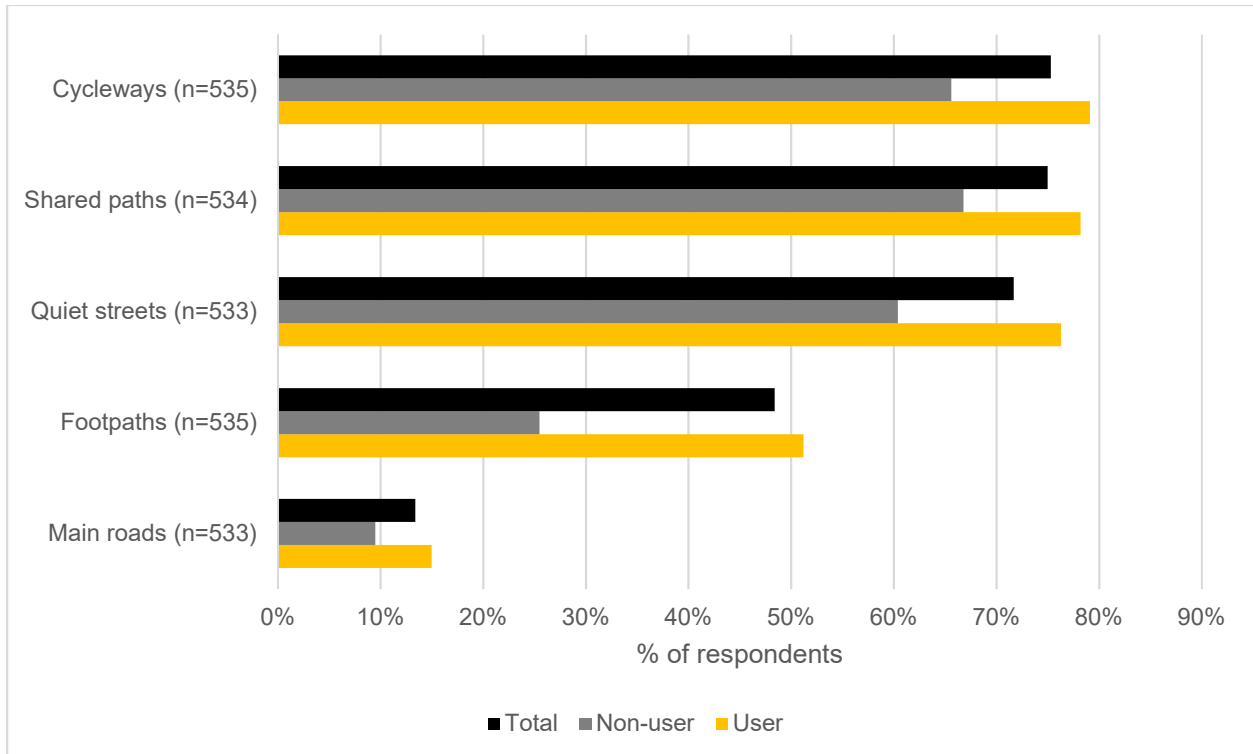


Figure 19: Respondents who strongly agreed or agreed that each environment was suitable for e-scooter use

We also gave respondents an opportunity to make other comments related to their thoughts on e-scooter use. A number of the comments focused on the speed at which e-scooters travel, but rather than commenting simply that e-scooters are too fast or too slow, many comments focused on the appropriateness of the speed to the space in which an e-scooter is being used and who that space is being shared with. A common conclusion was that e-scooters travel too quickly to be ideal for use alongside pedestrians, but are too slow and too wobbly for use on roads alongside faster, heavier vehicular traffic. Some of the things respondents told us included:

[E-scooters are] too fast for pavement too slow for road

Footpaths are OK if the scooter user slows down around pedestrians...I don't think scooters should be banned on main roads...but I personally wouldn't feel comfortable using one on a main road.

Scooters need to have a speed limiter on them. too fast for footpath or shared path, yet not safe on road

I can't see where in our current infrastructure that they are safe to use for users themselves and pedestrians

Following on from these comments, a number of respondents commented on the need for more safe intermediate speed environments, specifically designated for the use of transport modes that are faster than walking but slower and less protected than cars. Such environments might be appropriate for bicycle users as well as for the range of new micro-mobility options becoming available including e-scooters but also electric skateboards, wheels, and other new devices. Some of the suggestions respondents made about new spaces included the following:

The concept of the little road is fantastic - similar to cycleways but essentially a lane for things like scooters and cycles and skateboards. It's not really safe to ride on roads with heavy traffic.

I also don't really know how/where to responsibly use a scooter on a busy street like Queen St Auckland because footpaths and roads are both clogged.... If only there was a bike lane!!

It would be preferable if there were more safe 'third' options such as protected bike lanes (assuming a law change to allow scooters).

I think we need more infrastructure to support scooters, bikes, and other non-car forms of transport.

So let's return to the question of whether e-scooters should be allowed on footpaths. This is a controversial question for good reason; it is fundamentally about safety and comfort for users of footpaths, cycle lanes, and roads. There is also no simple short-term answer to the question. E-scooter use may be preferable to car use in terms of environmental sustainability and the impacts of issues like congestion and noise, but at the moment, there is evidence to suggest that there is a lack of suitable spaces for e-scooter use and many of our respondents reported that this results in them using footpaths for e-scooter trips, which can threaten the safety and comfort of pedestrians. We are likely to see this issue becoming increasingly prominent as electric micro-mobility options become more numerous and more affordable. We suggest that it is time for a national conversation about how we designate transport spaces. A distinction between footpath and road has existed in many places for over a century.

There are, of course, places where this distinction is less clear: there are shared streets in which space is less demarcated and more evenly shared by users of different transport modes (see for example Fort Street in Auckland), we have seen increasing provision of separated cycle facilities that are distinct from both footpath and road, and we have seen the creation of a number of other forms of shared space. However, in many places in Aotearoa New Zealand, there remain two distinct transport zones, road and footpath. Now, we have the opportunity to reconsider whether this distinction will serve us well as we move into a future that is likely to incorporate a wider range of transport options and associated changing travel patterns and behaviours.

### What other questions should we be asking about e-scooter use?

We have a lot more survey data to analyse and we want to tackle a number of other important questions about e-scooter use. We finish this report by very briefly mentioning just four of the other topics that we think are important and that we intend to address in future publications.

One issue that we think is really important is **transport equity** and we want to look at whether e-scooters are improving equity amongst New Zealanders. As summarised earlier, and shown in Figures 2 to 12 there are some differences in the types of people who are using e-scooters, which might have equity implications. These differences are likely to be even starker in a representative population survey. Further to this, we note that to be able to hire an e-scooter a person normally needs access to a credit or debit card and a smartphone. We know from some of our previous research that possession of these items is low amongst some socio-economic groups. We also know that even some people who do have access to a smartphone struggle to afford the data to be able to use its connectivity functions. Even though our respondent cohort was, on average, younger and wealthier than the population as a whole, nearly 16% of respondents did not have either a bank card or a smartphone or both. A small number of our survey respondents considered a lack of access to these items to be one of the reasons why they had not used an e-scooter (Figure 14); a larger number were deterred by the cost of hiring an e-scooter. We also think it likely that the spatial distribution of for-hire e-scooters could be a barrier to use for some groups, especially those living in more deprived areas, which may be under-served in e-scooter deployment. We want to explore the equity implications of e-scooter use in more depth so that we can help to support moves towards more equitable transport systems.

In our survey, we also asked respondents whether they had the **skills** necessary to deal with a range of different e-scooter use situations. More of our respondents felt competent in steering around fixed or slow moving obstacles like trees or pedestrians, balancing, and controlling speed; fewest felt competent in using a hand signal to indicate a change in direction, and knowing how to check whether an e-scooter was in good working condition before using it. Issues like respondents' reported inability to take a hand off an e-scooter's handlebars to indicate a change in direction might reinforce concerns about e-scooter use on roads and suggest the need for e-scooters to be equipped with handlebar indicator controls. We also know that some groups reported higher perceived competence than others. Younger people reported feeling more competent than older people, males reported feeling more competent than females, and people who cycle every day reported feeling more competent than people who do not currently cycle. Understanding more about feelings of competence will help us to address questions about how to keep New Zealanders safe when using e-scooters as well as helping to provide further insights about transport equity.

We asked survey respondents a number of questions to help us start to understand how **stereotypes** associated with e-scooter use and e-scooter users are evolving. Previous research has demonstrated that stereotypes can have real and substantial impacts on transport behaviours and safety. For example, one experiment conducted in Australia demonstrated that female drivers became twice as likely to run over jaywalking pedestrians in a driving simulation exercise when they were reminded of the stereotype that women are bad drivers (Yeung & von Hippel, 2008). Once established, stereotypes can be damaging and intractable, as we have demonstrated with work exploring the image of the bus as a 'loser cruiser' in Christchurch and the deterrent effect that this has on bus use (Fitt, 2018). We are charting the emergence of stereotypes associated with e-scooter use. Early results suggest that e-scooters are currently most commonly associated with young people, business people, students, and tourists, with some associations between these groups and perceptions of their competence and courteousness when using e-scooters. We will follow up on this emerging result in future publications and research.

Finally, we know from history that when we change the way we travel, we change the very **shape of our towns and cities** and accordingly we change things like where people are able to live and work, the activities they are able to engage in, and the social networks they are able to make and maintain. At the moment, e-scooter users are using existing infrastructure and are adapting to the current shape of the urban areas around which they move. If, however, we do start to have conversations about how to more effectively designate transport spaces, then e-scooter use will have a role to play in the reshaping of our urban environments. This is a socially and culturally complex idea and one we intend to keep pursuing in our ongoing research.

## Conclusions

E-scooter use is a relatively new phenomenon in New Zealand cities. We are trying to understand its evolution and the integration of e-scooter use into everyday life so that we can help inform the development of transport systems with benefits for all. It is early days to be drawing concrete conclusions about the benefits and problems associated with e-scooter use, but emerging findings, like those presented in this report, can help to inform constructive conversations about how to manage our evolving transport systems.

## Further reading and analyses

A limited version of the dataset from the survey is available for use by those wanting to conduct additional analyses:

Curl, A., & Fitt, H. (2019). Attitudes to and use of Electric Scooters in New Zealand Cities [Dataset]. [doi.org/10.6084/m9.figshare.8056109](https://doi.org/10.6084/m9.figshare.8056109)

If you have found this document interesting, you may also like our earlier Think Piece on the potential implications of an adoption of driverless cars:

Fitt, H., Curl, A., Dionisio, R., Fletcher, A., Frame, B., & Ahuriri-Driscoll, A. (2018). *Think Piece: Autonomous vehicles and future urban environments: Exploring implications for wellbeing in an ageing society*. Available at: [http://www.buildingbetter.nz/publications/contestable\\_research\\_projects/Autonomous\\_vehicles\\_think\\_piece\\_2018.pdf](http://www.buildingbetter.nz/publications/contestable_research_projects/Autonomous_vehicles_think_piece_2018.pdf)

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