

## Summary

# The joy and trouble with e-scooters

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*Both private and shared e-scooters are increasing in popularity. In this survey, we find that e-scooters are mostly used for commutes and errands/leisure activities, and that they primarily replace trips on foot or by public transport. Trips with privately owned e-scooters replace more car journeys than trips with shared e-scooters. Non-users generally find the interaction with e-scooter riders annoying, and that they regard e-scooters as unsafe for other road users. Many have experienced accidents or near misses, and non-users point to the behaviour of the e-scooter rider as an important risk factor. Accidents experienced by users are most often single accidents and slippery and uneven surfaces are important risk factors. Both users and non-users see it as unlikely that e-scooter riders will be stopped in police control, and non-users want more enforcement of regulations regarding e-scooters. Clear challenges remain related to both interaction and safety with e-scooters, and there is a need to evaluate alternative regulations and measures.*

E-scooters are emphasized as a practical, fast and safe means of transport among those who use them. At the same time, there are challenges associated with interaction with other road users, accidents and littering.

We used an online survey to examine attitudes to and experiences with e-scooters among both users and non-users. People were recruited via Facebook, in what's called convenience sampling. This type of recruiting respondents is efficient and low-cost, but the sample is not representative of the population. People who chose to answer can differ in several ways from those who chose not to, as well as from those who didn't have the opportunity. The results can give important indications of attitudes and experiences in the areas the respondents are from, but are influenced both by who had the opportunity to answer or not, and who chose to answer or not.

The survey was open from 25<sup>th</sup> June 2020 to 20<sup>th</sup> July 2020 and 865 people 18 or older completed the questionnaire. In the questionnaire, the respondents were categorized as either users (n = 374) or non-users (n = 491), depending on how often they usually use an e-scooter.

The survey was developed in collaboration with researchers in Australia, Belgium, the Czech Republic and Sweden, and distributed in these countries during the summer and autumn of 2020.

## E-scooter use

When asked what it is, or would be, like for the respondents to use an e-scooter on their daily trips, there are clear differences between users and non-users. More users than non-users think that e-scooter use on their daily trips would be fast, convenient, comfortable, environmentally friendly and safe. More non-users than users disagree that it would be healthy and economical. When it comes to barriers to using an e-scooter, or riding one more often, we see that the most important barrier for users is "weather", while for non-users the most important barrier is "safety".

A quarter of the users used their own e-scooter on their last trip. When asked about that last trip, those who used their own e-scooter had longer trips and used it more for

commuting, and less for errands or leisure activities compared to those who rented e-scooters.

Most users said they would have walked or used public transport if they didn't have an e-scooter available for their last trip, and the proportion was larger among those who used a shared e-scooter. While only 10 percent of these would have used a car instead, as many as 31 percent of those who used their own e-scooter would have used a car.

## **Accidents and interaction**

Users were asked if they have ever had an accident while riding an e-scooter, and how many near misses they have had. Non-users were similarly asked about accidents and near misses with e-scooter riders. 14 percent of users and 9 percent of non-users have experienced an accident, while more have experienced near misses (37 percent of users and 72 percent of non-users). Almost all user-reported accidents were single accidents (92.6 percent) while near misses involved other road users to a greater extent (50 percent).

Both users and non-users were asked about factors contributing to their recent near miss and/or accident. Among non-users, most pointed to "the behaviour of the e-scooter cyclist" as an important factor, followed by "the e-scooter and its operation". Among users, we also see that "the behaviour of the other road user" is what is considered to have contributed the most, but this only applies to those who had a near miss or accident involving others. Beyond that, an uneven surface is the factor most users point to as a contributor to accidents and near misses. Some also point to their own behaviour, slippery surface, road design, traffic conditions and the e-scooter and its operation. Which risk factor that is considered the most significant varies depending on whether you look at near misses or accidents, but the differences are not large.

Users were asked to assess how they view the interaction with other road users when riding an e-scooter. Most place themselves in the middle of the scale, ranging from annoying to pleasant, with a slight predominance toward pleasant. Non-users, however, find the interaction with e-scooter riders somewhat annoying. This applies regardless of whether they are pedestrians, cyclists or motorists. However, more respondents view the question as irrelevant when considering the interaction when driving than when cycling or walking. There is little difference between age groups and genders.

The regulations for the use of e-scooters on pavements vary in the countries that collaborated on the project. We have therefore examined how non-users in the different countries experience the interaction with e-scooter riders from a pedestrian's viewpoint. Norway, Sweden and Belgium all allow the use of e-scooters on pavements if you maintain an approximate walking speed, with regulations being worded slightly differently. The regulations are somewhat different in Brisbane, Australia. While cycle lanes exist, these are often on roads where e-scooters are prohibited, and e-scooters are often used on pavements and pedestrian/cycle paths. There are no specific speed limits for this, but e-scooters must give way to pedestrians (on pavements/foot paths) and cyclists (on bike paths). In the Czech Republic, a distinction is made between e-scooters defined as bicycles (maximum speed 25 km/h) and those defined as vehicles. While those categorized as bicycles are permitted in pedestrian streets and squares, they are forbidden on pavements regardless of speed.

There are clear differences in attitudes towards e-scooters between countries. The Czech respondents find the interaction pleasant, while respondents in the other countries find them annoying. Respondents are slightly more positive in the Australian sample than in Norwegian, Belgian and Swedish samples. While we can't rule out that these differences are

due to differences in the samples, or cultural differences, this does indicate that prohibiting e-scooter use on pavements would improve pedestrians' experiences.

## **Risk behaviour, police control and desired changes**

Those who had used an e-scooter during the last 30 days, were asked how often, during that period, they had used the e-scooter in various illegal or risky ways. Most of them (93 percent) have ridden without a helmet at least once, and more than half of them say that they (almost) always do so. Almost half have ridden in the dark without a reflective vest at least once, and the same applies to having listened to music through headphones. Few respondents have used their mobile while riding. As many as 79 percent have ridden at a speed higher than the walking speed on the pavement (the question did not specify whether there were pedestrians on the pavement), and 43 percent have ridden under the influence of alcohol during this period. On the positive side, very few have ridden under the influence of illegal drugs. One third of the respondents have ran a red light, and slightly fewer have ridden with more than one person on the e-scooter. Very few have used e-scooters in areas where they are forbidden (e.g. motorway, some tunnels).

Both users and non-users consider police control of e-scooter riders' behaviour as unlikely. However, they view speed control as more likely than alcohol or drug testing.

There is a clear tendency towards non-users being more positive to proposed measures to regulate e-scooters than users. Most non-users are positive to dedicated parking areas for shared e-scooters, which half of the users are also in favour of, and many non-users desire increased police control. The measure most users are for, however, is a minimum legal age for riding an e-scooter on public roads. Furthermore, many users are against mandatory training for e-scooter riders, while many non-users are in favour of this.

## **Conclusion**

Our results are similar to previous Norwegian findings regarding e-scooters accidents, showing that most are single accidents and that uneven or slippery surfaces are relevant accident factors. Additionally, we find that people who used their own e-scooter on the last trip had more near-accidents than those who used a shared e-scooter.

The share of users having a near-accident on their last trip is similar to the share in a previous Norwegian survey (Fearnley, Berge, et al., 2020).

Compared to the previous survey (Fearnley, Berge, et al., 2020), a larger proportion of the users say they would have taken a car or taxi if they had not had an e-scooter available on their last trip. As there are some methodological differences, it is difficult to conclude whether there has been a development on this issue, but it is interesting that the proportion among those who used privately owned e-scooters is significantly higher.

In the future, it will be important to look more closely at how e-scooters can replace more car journeys, and how they can be connected more actively to public transport.

E-scooters are growing in popularity and are a valued means of transport for those who use them, but they also contribute to feelings of unsafety and irritation for other road users.

There is still work to be done to both facilitate and regulate the use of e-scooters so that their potential as a flexible and useful means of transport is utilized, while at the same time resulting in less negative consequences for both e-scooter riders themselves and other road users.