

An in-depth understanding of powered micro-mobility safety issues: a qualitative study

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1 INTRODUCTION

The fast-growing market of powered micro-mobility, including electric bikes (e-bikes) and electric scooters (e-scooters), has introduced a paradigm shift in mobility across the world [1]. These emerging transport modes have frequently been referred to as convenient mobility, having playfulness and transport functions [2]. However, one of the main obstacles to the safe adoption of these transport modes is the safety issues related to their use [3].

Based on the cycling literature, the interaction of vulnerable road users with each other could be classified based on the encounter directions. More specifically, passing is referred to as same-direction encounters, and meeting demonstrates opposite-direction encounters [4]. Experiments and observations have been applied in this research domain for data collection, while interview setups are less conducted to explore users' opinions about their interactions [5]. In this study, we conducted a series of semi-structured interviews and scrutinised e-bike and e-scooter users' safety issues in motorised and non-motorised facilities (e.g. shoulder lanes and sidewalks).

2 METHOD

This study is based on a series of semi-structured interviews. In doing so, we showed interviewees several clips of different transport facilities in Sweden (from the e-bike/e-scooter rider's perspective) and discussed their safety concerns in given situations. Figure 1 represents two examples of discussed situations. These clips contain a variety of interactions of different transport modes (e.g. pedestrians, cyclists, and cars) both in motorised and non-motorised facilities. Subsequently, we explored users' perceived safety based on types of infrastructure, different combinations of road users, and socio-demographic characteristics of users.



(a)



(b)

Figure 1: Examples of given scenarios to the interviewee. The left photo (a) is an example of a shoulder lane, and the right photo (b) is a bike lane.

3 EXPECTED RESULTS AND CONCLUSIONS

The findings of this study contribute to designing dedicated "interaction analysis" experiments by exploring variables associated with the road users' perception of safety. Also, the outcomes provide knowledge for planners and policy-makers on e-bike/e-scooter users' experience with different types of transport facilities and, eventually, how to improve their safety.

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