
Is e-scooter sharing declining?

*Luca Persia, Research Centre for Transport and Logistics (CTL) of the Sapienza University of Rome,
7 February 2023*

Every innovation has its own phases: early uncertainties, enthusiastic boom, adjustment and normalization. It was the same for automobiles, starting at the end of the XIX century, and nowadays e-scooters make no exception.

A first step of experimentation, developed at different speeds according to the different local contexts, has been followed by an enormous spread in e-scooters, driven by public debate on sustainable urban mobility and by the pandemic itself, that has fostered individual electric forms of micromobility. The large-scale diffusion of the sharing mode has also led to the need to deal with the increase of negative aspects, such as serious crashes and city chaos due to the random abandoning of scooters, and thus with the need for more stringent regulation.

Currently, we are in the phase of the phenomenon's downsizing, owing to the fact it is reaching a more physiological dimension and a more consolidated balance among all the actors involved: users, decision-makers, developers and managers. For example, after the initial enthusiasm, further research has shown how e-scooters take away more users from the public transport system and slow mobility rather than from private cars¹, questioning the effective legacy to a really more sustainable urban mobility. Moreover, the sustainability of the object itself was doubted by analysing the environmental impact of the entire productive process², including batteries, transportation, recharging, withdrawal and substitution, while public opinion and the subsequent political debate generally focused on matters such as safety, the rise in serious crashes, non-regulated circulation and unregulated, chaotic parking. Many national and local governments therefore introduced stricter rules first of all – mostly with no particular order³ among the EU members – and then decreased the number of specimens and operators. In Paris, the mayor even called the citizens for a referendum to decide if the use of e-scooters should be totally prohibited, at least in the sharing mode.

In the end, after the start-up phase companies who run the sharing services have started dealing with another aspect of sustainability, the economic one, emphasizing loss-making budgets and bankrolls that are currently insufficient to stay in business. They have even started reducing the labour force, and in some cases abandoned the business, claiming that governments should encourage the greatly publicized green economy and industry and not hinder it.

What is at the top of the political agenda or what is perceived as a major problem by the public does not always correspond to a real emergency. However, the studies conducted so far on the phenomenon, with all their limitations, help to shed light on certain aspects and to understand it better.

For instance, e-scooters parked on sidewalks or improperly parked are perceived as a major concern in many countries, especially for people with mobility limitations or visual impairments, but there is no confirming evidence to substantiate this. Studies⁴ suggest that e-scooter users use parking infrastructure

¹ https://www.sciencedirect.com/science/article/pii/S1361920921000146?fr=RR-2&ref=pdf_download&rr=77dc4f5d2d8a1c53

² <https://www.technologyreview.com/2019/08/02/646/electric-scooters-arent-so-climate-friendly-after-all-lime-bird/>

³ FERSI. E-scooters in Europe: legal status, usage and safety - Results of a survey in FERSI countries (2020) <https://fersi.org/wp-content/uploads/2020/09/FERSI-report-scooter-survey.pdf>

⁴ Brown A, Klein NJ, Thigpen C, Williams N. Impeding access: The frequency and characteristics of improper scooter, bike, and car parking. *Transp Res Interdiscip Perspectiv*, 2020, 4: 100099.

when provided and only a limited percentage (from 0.1% to 3% of parked micromobility vehicles) leave insufficient space for disabled people. It is more common for motor vehicles to block the access of other road users, especially when dropping off or picking up people or food while double parking.

With regard to safety, e-scooter users have started to represent a focus of attention for transport planners and policymakers. Research conducted in Germany⁵, Denmark⁶ and New Zealand⁷ determined that the introduction of e-scooters in urban traffic has had a significant impact on healthcare centres. The novelty of e-scooters makes them unfamiliar to many people, who are much more accustomed to sharing their space with bicycles⁸. This is compounded by the high speeds (commonly up to 25km/h) these vehicles can reach, and the nature of the injuries commonly suffered in crashes⁹. Specifically, serious knee, thorax and/or head injuries are the most likely to occur in -pedestrian e-scooter crashes, the latter usually being the most affected¹⁰.

According to Useche and colleagues¹¹, e-scooters are most commonly used by young, highly educated, urban-dwelling males, usually for short trips. Individuals with the lowest degrees of risk perception remain more prone to engaging in risky road behaviours likely to increase their crash involvement. Studies comparing their behaviour to other road users' behaviour are rare, but according to one study¹², e-scooter riders are more likely to engage in risky behaviours compared to e-bike and bicycle riders while at signalized intersections. On the other hand, it is an opinion shared by several researchers that the micromobility users' behaviour is likely to improve as time and experience progress.

Are e-scooter riders more involved in crashes? Based on existing findings¹³, a trip by car or by motorcycle in a dense urban area is more likely to result in a traffic fatality than a trip by a micromobility vehicle¹⁴. Initially it was thought that a trip by shared standing e-scooter is no more likely than a bicycle trip to result in a road traffic mortality. More recent research, however, suggests that the injury crash rate is 7 or 10 times higher for e-scooters compared to bicycles (bringing it closer to that of the motorcyclists), and that the percentage of seriously injured among e-scooter riders was significantly higher compared to cyclists¹⁵.

There are many questions that remain unanswered, and all that is left for us researchers to do is to observe and analyse the phenomenon in order to better understand it and suggest ways forward.

This column is written in a personal capacity and reflects only the author's view.

⁵ Siebert FW, Hoffknecht M, Englert F, Edwards T, Useche SA, Rotting M. Safety Related Behaviors and Law Adherence of Shared E-Scooter Riders in Germany. HCl in Mobility, Transport, and Automotive Systems (HCII 2021). Lect Notes Comput Sci, 2021, 30: 12791.

⁶ Nielsen KI, Nielsen FE, Rasmussen SW. Injuries following accidents with electric scooters. Danish Med J, 2021, 68(2): A09200697–A09200697.

⁷ Bekhit MNZ, Le Fevre J, Bergin CJ. Regional healthcare costs and burden of injury associated with electric scooters. Injury, 2020, 51(2): 271–277.

⁸ Fitt H, Curl A. The early days of shared micro mobility: A social practices approach. J Transport Geogr, 2020, 86: 102779

⁹ Sikka N, Vila C, Stratton M, Ghassemi M, Pourmand A. Sharing the sidewalk: A case of E-scooter related pedestrian injury. Am J Emerg Med 2019, 37(9): 1807–e5.

¹⁰ Useche, S. A., Gonzalez-Marin, A., Faus, M., & Alonso, F. (2022). Environmentally friendly, but behaviorally complex? A systematic review of e-scooter riders' psychosocial risk features. PLoS one, 17(5), e0268960.

¹¹ Useche, S. A., Gonzalez-Marin, A., Faus, M., & Alonso, F. (2022). Environmentally friendly, but behaviorally complex? A systematic review of e-scooter riders' psychosocial risk features. PLoS one, 17(5), e0268960.

¹² Bai L, Liu P, Guo Y, Yu H. Comparative analysis of risky behaviors of electric bicycles at signalized intersections. Traffic Inj Prev, 2015, 16(4): 424–428. <https://doi.org/10.1080/15389588.2014.952724> PMID: 25133656

¹³ International Transport Forum (ITF). Safe Micromobility Report. 2020

¹⁴ Considering the total fatality risk as the sum of the risk to oneself and the risk imposed on others.

¹⁵ PACTS. The safety of private E-Scooters in the UK (2022). <https://www.pacts.org.uk/wp-content/uploads/PACTS-The-safety-of-private-e-scooters-in-the-UK-Final-Report.pdf>