Title: Electric Scooters: Equity, Trip Patterns, and the Necessary Urban Policy Response

Author: Gabor Debreczeni

Affiliation: Senior Transportation Economist at Louis Berger in New York, United States

Contact information: gdebreczeni@louisberger.com / 96 Morton Street, 8th Floor, New York, NY, 10014, United States

Keywords: e-scooters, scooters, person-sized vehicles, transportation equity, urban transport, public space, trip distribution, accessibility, first-mile-last-mile

---

Problem statement:

Person-sized vehicles are having a renaissance in the United States. Most surprising to casual observers has been the rise of electric scooters, operated by companies such as Lime, Lyft, Skip, and Bird. Early research has shown reasons to be excited about their arrival. Firstly, that adoptions curves for the scooters are of a similar magnitude and shape as the adoption curves for TNCs, which have deeply shaken cities by their numbers and impact on urban transportation. If this adoption curve continues, cities will need to think about scooters with similar depths as they are now scrambling to think about TNCs. Secondly, research is showing that trip length on scooters (as well as e-bikes) are on par with taxis, that they're being ridden in hot and cold, and that the scooters are being adopted by people of all socioeconomic statuses, ages, and fitness abilities – something that was never the case for cycles and could lead to the adoption of scooters being a profound transportation equity movement.

As expected, cities have struggled with their response to the arrival of the scooters. First, many cities banned them, and some allowed them to return only under severely restricted scooter counts or geographies of operation. Once the evidence began to accumulate for their benefits, and how aligned these benefits are with most cities' mobility mission, many races to invite and allow the companies once again. (It of course helped that early adopters innovated accommodation measures, such as the painted parallel parking spots popularized by Santa Monica, which both demonstrated how spatially efficient person-size vehicles are and dealt with the issue of sidewalk obstruction and clutter.)

The scooters have also benefited from a relatively painless decision to default to them being operated alongside other person-sized vehicles in bike lanes instead of sidewalks. This has lowered pedestrian opposition, and further has introduced previously absent voices (non-bike riding populations) to advocacy for more protected space for person-sized vehicles. In all, these scooters are already having a meaningful impact on transportation equity, policy, origin-destinations patterns, and environmental outcomes – and this impact can easily accelerate to becoming a profound formant influence on these topics in urban contexts in coming decades, thus meriting much more discussion and research than has been seen so far.

Research objectives:

While the outcomes discussed in the problem statement section have been anecdotally discussed at length in the transportation policy and economics world, there is still a dearth of condensed economic and policy research comparing the experience of various cities around the United States. We aim for this

paper/talk to be a rationalized collection of the insights available so far based on data made available so far by scooter companies, advocates, researchers, and cities' open data platforms. We are also requesting further data from these sources to the extent possible.

We hope for this paper/discussion to be a war chest for those advocating for person-sized vehicle policy, with a collection of outcomes from disparate geographies such that there is more power to the stories suggested by the fragments observed in cities so far, and that the anecdotes become harder to dismiss (or so that we ourselves dismiss some of them as local outliers not observed elsewhere).

Methodological approach:

This paper/talk includes a formal collection of the above results, as well as a new data collection effort comprising data made available by researchers, the scooter companies, and cities' open-data platforms. We are also requesting further data from these sources to the extent possible.

We also plan to use outreach via our transport economics/policy network on social media to ensure that we are including and including in the talk the most up-to-date impressions and data that are being observed and collected in cities around the United States with regard to the introduction and continuing use of electric scooters. Perhaps by the time of the conference, even our home city of New York, the last major hold-out in the United States to not allow electric scooters at all, will have changed its mind, and we will be able to include local data and outcomes!

We propose to the data collected to assess various propositions independently – that scooters are replacing auto trips, that they are making transportation more equitable, that they are being used by demographics not traditional for person-sized vehicles, that their introduction to a city results in greater advocacy for protected infrastructure for person-sized vehicles, among others.

These discussions and data already largely exist but need to be collated with an academic economic and policy framework in a cross-geographical lens where we can separate local effects from the impacts made by the introduction of the electric scooters.

Expected results:

We will evaluate a list of propositions suggested by the anecdotal data available so far, including but not limited to: that scooters are replacing auto trips, that they are making transportation more equitable, that they are being used by demographics not traditional for person-sized vehicles, and that their introduction to a city results in greater advocacy for protected infrastructure for person-sized vehicles.

We believe that many, but not all, of these anecdotal propositions will be proven out by the cross-geographical data search we conduct, and also believe that both the negative and positive results will be valuable to the research, policy discussion, and public discourse regarding the scooters and in limited ways other person-sized vehicles as well.

Overall, we will pivot the discussion at the end of the paper/talk to consider the extent to which it is worthwhile reconfiguring our cities around both scooters and other person-sized vehicles even in car-dependent contexts like many less transit-using cities in the United States where scooter use has raced ahead of the infrastructure accommodations that make them more welcoming, equitable, and safe for users and pedestrians.

Looking forward to hearing from you soon; thank you very much for reading!

Best, Gabor Debreczeni