How Can We Make Shared E-scooter Systems Safer? Municipal Perspectives on Safety in Shared E-Scooter Programs

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Policy Challenge

Dockless electric standing scooters (e-scooters) have rapidly become a popular form of micro-mobility option.

Shared e-scooter providers are responding to the public need for sustainable, convenient, and flexible travel modes for shorter distances. E-scooters can also expand the reach of public transit by addressing the first and last mile challenge.

However, e-scooters are sometimes framed as a public health problem, primarily due to concerns about traffic safety on and off street.

But, little work has been done to understand how municipalities are addressing the safety of shared e-scooter systems.

To address this gap, we investigated the following research questions:

1) What are the key safety challenges that municipalities have to overcome in implementing shared e-scooter programs?

2) What opportunities do policy and technology present to help resolve safety issues related to e-scooter use and management?

Scope of Study

We have used a qualitative approach to analyze the perspectives of municipal staff who are working to manage shared e-scooter programs.

The study population covered US and Canadian cities that 1) have published e-scooter regulations (or micro-mobility regulations) and 2) have completed a pilot project.

The scope of this list was further limited to mid- and large-sized cities by eliminating those with populations below 100,000.

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Data Collection and Analysis

Interviewees were identified by contacting individuals or general information e-mail addresses in transportation or mobility departments on each municipality's website, in summer 2021.

In total, we interviewed 22 municipal staff (14 US and 8 Canadian municipalities). Each interviewee had a direct role in drafting or supervising the e-scooter/micro-mobility policy or program in their municipality.

The interviews, which generally were 1 hour or less in length, took place virtually on Zoom between September and November of 2021.

Five main topics were discussed 1) the interviewee's role in the e-scooter policy creation in their municipality, 2) the concerns about a municipality's key policy goals, 3) the challenges encountered in implementing the e-scooter policy, 4) compliance by providers and users with rules and regulations, and 5) key findings from the pilot project.

In this paper, we specifically focus on the topic of safety.

Key Findings

Municipal perspectives on e-scooter related public health concerns can be discussed under **four** key themes.

Photo: Maus (2018)

Photo: Moreau et al. (2020)

Photo: Brett Sayles (2022)

Safety and Vulnerability of Riders

E-scooter riders are vulnerable road users who are less physically protected. Current users are also inexperienced.

The e-scooter's relatively small footprint is a concern at night times, when visibility is low.

some municipalities have included e-scooters in their Vision Zero policies. Building safe infrastructure is a key policy priority.

Education and outreach about user safety is also a common policy approach. Interesting public-private partnerships models already exist, including "learn to ride" events, and in-app safety quizzes.

Safety Monitoring and Data Quality

Understanding the true safety impacts of shared e-scooters is difficult, because of the poor data quality.

Some municipalities are working with their local hospitals to understand the trends.

Partnering with health care staff to monitor injuries and collect data, can help municipalities understand road safety. Currently, this approach is less common in practice.

Unsafe Rider Behaviour

User behaviour and non-compliance play a role in the frequency and severity of e-scooter collisions.

Although encouraged, helmet use is not required in most municipalities

Some common regulations discussed include speed limits, age requirements, restricted operating hours, and parking requirements.

Sidewalk Riding and Improper Parking

E-scooters pose a larger safety risk to pedestrians on sidewalks, and those with accessibility needs, compared to bicycles.

Sidewalk riding was one of the most frequently discussed concerns in the interviews.

Inconsistencies in sidewalk riding regulations, differences in user perceptions of safety, or simply a lack of knowledge, may contribute to widespread safety issues on sidewalks.

Many technological improvements have the potential to address the safety challenges related to sidewalk, such as riding detection technology, lock-to requirement, sound emission.

Implications

This research identified **four** general approaches by municipalities to address safety issues:

1) prioritize safe infrastructure,
2) craft regulation to limit unsafe rider and mitigate unsafe parking behaviour,
3) provide education regarding safe e-scooter riding, and
4) utilize new technology tools to facilitate implementation of regulatory measures and educational programs.

Generally, we observed that the municipalities have increased program requirements for safety over time. We also saw that municipalities who have authorized e-scooter providers more recently incorporated new technologies (e.g. sidewalk riding detection, geofencing, etc.) and education from the outset of their programs.

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