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### **Title**

A Scoot, Skip, and a JUMP Away: Learning from Shared Micromobility Systems in San Francisco

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# A Scoot, Skip, and a JUMP Away: Learning from Shared Micromobility Systems in San Francisco

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## Research Topic

In 2018, electric-powered shared scooters and stationless (electric) bikeshare proliferated throughout the United States. Many cities have begun to experiment with new permitting systems and regulations for these vehicles. To date, there is scant academic literature on how well scooter and stationless bikeshare permits have helped cities achieve their transit, sustainability, and equity goals. One year after scooters began showing up on streets en masse, there is still no consensus on permitting best practices.

San Francisco was one of the first cities in the United States to create a permit system for stationless bikeshare, and later, scooters. This research investigates and evaluates San Francisco's scooter and stationless bikeshare pilot permit programs using data collected by the San Francisco Municipal Transportation Agency (SFMTA). This research evaluates the use of scooters and stationless bikeshare as a first/last mile transit option, their effect on vehicle miles traveled (VMT), and their accessibility in disadvantaged areas.

## Main Findings

- For 30 percent of scooter trips, scooters enabled riders to connect to transit to complete trips when they otherwise would not have. Scooters induced five times more transit trips than they replaced.
- Stationless e-bikes have the potential to alleviate some amount of transit service degradation by replacing transportation network company (e.g., Lyft and Uber) trips, which have impacted San Francisco's bus service through increased traffic congestion.

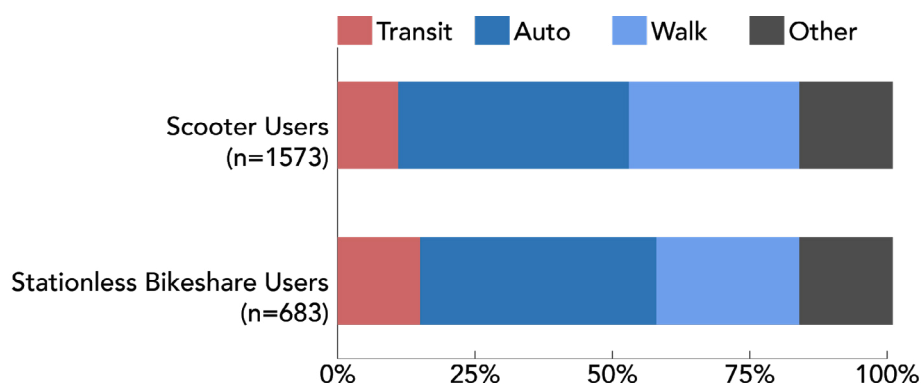


Figure 1. Travel Mode Replacement

## KEY TAKEAWAYS

- For 30 percent of scooter trips, scooters enabled riders to connect to transit in order complete their trip, when they otherwise would not have made the trip by transit.
- Electric bikeshare reduces VMT substantially more than scooters by replacing more and longer auto trips.
- Despite observed VMT reductions, scooters and stationless bikeshare are only estimated to reduce less than .001% of the San Francisco's annual VMT due to the SFMTA's low combined bike and scooter cap of 1,750.
- Policies requiring permittees to operate in disadvantaged communities is not sufficient to ensure bike and scooter travel options are equitably utilized.

- There are not enough bikes or scooters available in San Francisco to reduce even 1 percent of the city's VMT. The scale of permitted scooters and bikes would need to increase significantly to meaningfully reduce car travel in the city.
- E-bikes reduce VMT substantially more than scooters by replacing more and longer auto trips.
- An equitable distribution of scooters and e-bikes among San Francisco's disadvantaged communities did not result in more equitable utilization. More research is needed to understand barriers to access to ensure the benefits of these services are broadly shared.

## Study

Data from new mobility companies is often proprietary and difficult for public agencies and academic researchers to obtain. This research uses a mixed-methods approach and four types of data to answer pressing questions about dockless devices' effects on transit, sustainability, and equitable access. The four sources include: company reporting to the SFMTA, real-time bike and scooter location data, a statistically representative user survey, and data from secondary sources (e.g., U.S. Census Bureau).

User survey data measures the use of scooters and stationless bikeshare as a first/last mile transit connection. All four data sources are used to estimate how much these travel options reduce auto travel. The researcher employed descriptive statistics of survey and census data to characterize

equitable utilization of these services. Finally, real-time device data informed measures of dockless bike and scooter option availability in disadvantaged communities.

## Recommendations

- Results indicate that scooters and stationless bikeshare unequivocally support transit usage. The promotion of both should be considered as a strategy to increase transit ridership and alleviate recent transit service degradation. The SFMTA should explicitly reward bikeshare and scooter operators who provide integrated transit trip planning, transit trip payments, or bundle transit passes into their membership plans.
- The SFMTA should permit significantly more vehicles, especially stationless electric bikeshare bikes, to greatly reduce VMT in order to meet sustainability and climate goals. Future permits should explicitly require permittees to report all non-revenue (operational) VMT by vehicle type (e.g. diesel van).
- The SFMTA should improve equitable access to these travel options by directly enrolling Muni Lifeline pass holders into discounted low-income plans. The agency should also coordinate outreach with relevant city departments for targeted engagement rather than placing the whole onus on permittees. It should also directly fund community-based organizations to assist with community outreach.

## For More Information

Barnes, F. (2019). *A Scoot, Skip, and a JUMP away: Learning from shared micromobility systems in San Francisco*. (Master's capstone, UCLA). Retrieved from <https://escholarship.org/uc/item/0515r58q>

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