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Where Do Riders Park Dockless, Shared Electric Scooters? Findings from San Jose, California

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Introduction

Dockless, shared, electric kick-scooters started popping up on U.S. city streets without warning in 2017. These battery-powered devices are motorized versions of kick-scooters. They have a long, narrow platform where riders stand, two small in-line wheels at the front and back, and a vertical pole at the front with handlebars, a throttle, and brake controls. The "shared" versions of these devices are owned by for-profit companies offering the scooters for short-term rental, and "dockless" refers to company policy that riders may leave the device at any destination, rather than requiring that the scooters be physically returned to a fixed set of docking stations. (Hereafter, we refer to dockless, shared, electric kick-scooters simply as "shared scooters.")

Reaction to the shared scooters came swiftly and strongly. On the one hand, the scooters have proven popular with riders, attracting investment capital and expanding service to additional cities. Some commentators have lauded shared scooters' potential to provide convenient, affordable travel for short trips. But others have been less enthusiastic, with a central complaint being how shared scooters are parked. Critics argue that scooters strewn about town are unsightly and block pedestrian access. Numerous news articles and social media posts illustrate this argument with images of shared scooters scattered haphazardly on street corners, placed in front of doors, or lying sideways in the middle of sidewalks.

This perspective explores the extent to which parked shared scooters pose a problem to others on streets, sidewalks, and public spaces, using empirical evidence documenting where scooters have been parked in downtown San Jose, California. This Perspective briefly summarizes the study methods, key findings, and suggested implications for policymakers.

Study Methods

To better understand how riders park shared scooters, we gathered observational data in downtown San Jose, California, where at least two companies have operated shared scooter systems since early 2018. Downtown San Jose has a particularly high concentration of shared scooters, making it an efficient location to observe large numbers of them.

In June and July of 2018, we observed and photographed 530 parked shared scooters, categorizing key attributes about where and how they were parked and whether or not they likely impeded pedestrian flow. We photographed any shared scooter visible from the sidewalk and we documented whether the scooter was parked on the sidewalk, in the street, or on adjacent property, such as in an entryway, surface parking lot, or parking garage lobby.

We defined "well-parked" scooters as ones that met three commonsense criteria:

1. Standing upright
2. Placed on the periphery of pedestrian paths or in areas that are already obstructed, such as by street furniture
3. Not blocking pedestrian access

We developed this definition to encompass relevant State of California and City of San Jose regulations. Section 21235 of the California Vehicle Code states that "The operator of a motorized scooter shall not leave a motorized scooter lying on its side on any sidewalk, or park a motorized scooter on a sidewalk in any other position, so that there is not an adequate path for pedestrian traffic." The state code does not define an "adequate" path. The City of San Jose itself has no standards for scooter parking. However, the city does have standards for bicycles parked on sidewalks, so we applied to scooters the city's regulation that parked bicycles may not block more than half the width of a sidewalk. We defined a scooter as "blocking pedestrian access" if it failed to meet the city's bicycle parking threshold, obstructed access to an entryway, or obstructed access to infrastructure for the disabled.

Results

Given the inherent free-form nature of a dockless system, one might expect great variation in how shared scooters are parked. However, after examining and coding photographs of 530 parked scooters, clear patterns emerged.

Where Do Riders Park Scooters?

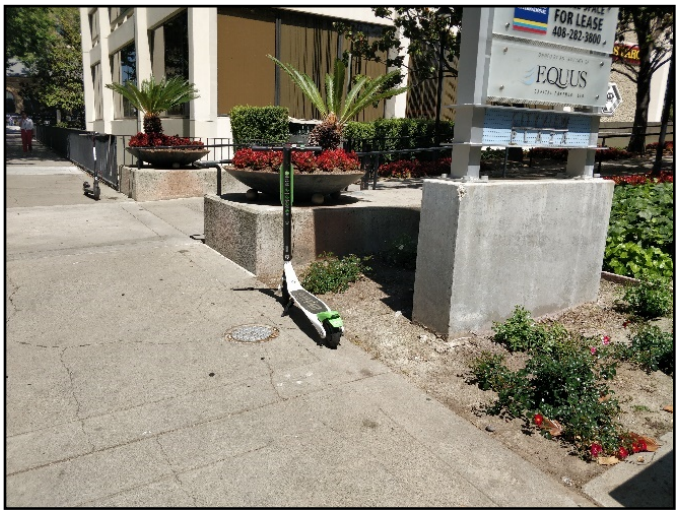
The vast majority of scooters—72%—were parked on sidewalks. Most of the rest (23%) were parked off the streetscape on adjacent properties. These scooters tended to be just off the sidewalk, in the setback between sidewalks and buildings. More than half of these scooters (15% of the overall total) were parked on off-street private property (e.g., business and residential properties or off-street parking lots for private properties). Five percent of observed scooters were on a pedestrian street running through part of downtown. Fewer than 1% were parked on the vehicular right-of-way of streets.

Do Parked Scooters Block Pedestrians?

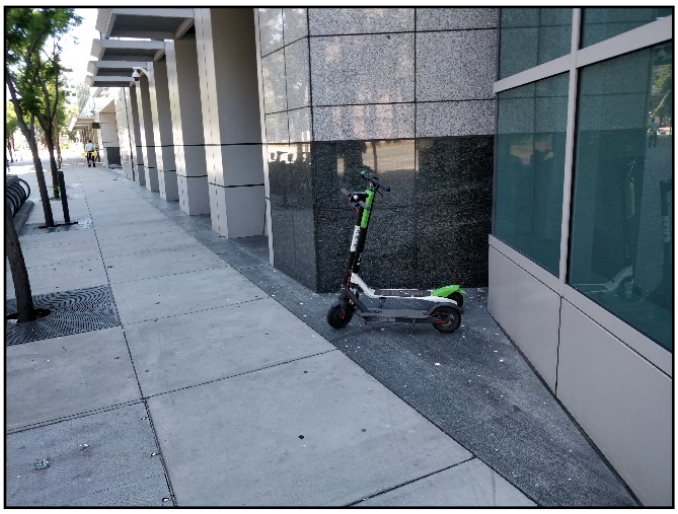
Of the scooters parked on sidewalks, 90% did not overtly disrupt pedestrian traffic. For a majority of these, some portion of the scooter was within a foot of the edge of the sidewalk. The rest were in the "street furniture zone," along with objects such as benches, newspaper racks, and planter boxes. Since the street furniture zone is already filled with obstacles, scooters parked here do not create a new obstacle to pedestrian through-flow along the sidewalk, although the scooters could obstruct cross-flow, such as for people exiting parked cars.

Even among the 10% of sidewalk-parked scooters that failed to be tidily parked on the sidewalk edge or in the street furniture zone, most did not actually impede pedestrian traffic. An extremely small number of scooters—just 11—were observed blocking pedestrian travel in any way.

Scooters parked in the street furniture zone (left) and on the edge of a sidewalk (right)



Scooter parked on private property, just off the sidewalk



A rare case of scooters blocking half the width of a sidewalk

Additional Observations

Findings from additional analyses of the parked scooters include:

- Virtually all scooters—97% —were parked upright, as required by California state law.
- Most users avoided parking scooters in the middle of open spaces. Seventy-two percent of scooters were parked within a foot of some other vertical object, such as a wall or street furniture.
- Fewer than 2% of scooters were parked in automobile parking spaces. Of these, most were observed in a small off-street parking lot belonging to an out-of-business restaurant.
- Only 3% of scooters were parked on unpaved surfaces, such as vegetation or bare dirt. Though these scooters did not block pedestrian flow, such parking raises questions about aesthetics and the impact on landscaping.

Discussion and Conclusions

Are scooters well-parked? The answer appears to be a clear "yes" in downtown San Jose. Fewer than 2% of scooters blocked access for the disabled, and even fewer failed to meet the city's standards for bicycle parking (parked bicycles may not block doors or more than half the sidewalk). Among scooters parked on sidewalks, 90% were parked out of the way of pedestrian traffic, either on the edge of sidewalks or in already obstructed street furniture zones.

These findings about where and how users have parked scooters in San Jose suggest several implications for municipal leaders:

Parked scooters are mostly a question of sidewalk management: The fact that most scooters in San Jose were parked on sidewalks underscores that shared-scooter parking is a sidewalk management issue. Cities may want to develop a policy statement on the extent to which scooters are, or are not, a legitimate use of public space deserving right-of-way allocation.

Scooter parking regulations may not need to be particularly strict: The finding that very few parked scooters obstructed other travelers suggests that cities may not need to regulate scooter parking at all, or at least may prefer to do so with a light touch.

Cities also need to consider scooters parked on private property: About 15% of the scooters were parked on private property. Cities may want to adopt a policy to either encourage or mandate scooter parking on private property. Such a policy would mirror municipal regulations requiring most private property owners to provide automobile parking and, in some cases, bicycle parking.

Recommendations for future research

This study begins to fill the need for empirical data on shared scooter parking, but more research will be needed if shared scooter use grows. For example, research is needed to explore the impact of scooters on different types of neighborhoods, such as communities with narrower sidewalks and higher pedestrian flow. Studies could also examine potential impacts of scooter parking not covered here, including concerns that parked scooters create undesirable visual clutter; corporatize public space with logo-branded scooters owned by for-profit businesses; or interfere with public works activities, such as sidewalk power-washing operations.

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To Learn More

For more details about the study, download the full report at **transweb.sjsu.edu/research/1713-WP2**

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