

Location, location, location: Bike-sharing systems need revamp to attract more riders

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Although bike-sharing systems have attracted considerable attention, they are falling short of their potential to transform urban transportation.

A new study by University of Chicago Booth School of Business Assistant Professor Elena Belavina, INSEAD Professor of Sustainable Development Karan Girotra and INSEAD Ph.D. candidate Ashish Kabra found that it is possible for cities to increase ridership without spending more money on bikes or docking points—simply by redesigning the network.

The researchers spent four months in Paris observing the Velib' bike-share system—one of the first and largest urban bike-share systems in the world.

They studied the effects on ridership of [station](#) accessibility, or how far the commuter must walk to reach the station, and bike-availability, or the likelihood of finding a bike at the station. The team observed 349 bike stations every two minutes and gathered a total of 22 million data snapshots, or the equivalent of 2.5 million bike trips.

The study, "Bike-Share Systems: Accessibility and Availability," determined that a 10 percent reduction in distance traveled to access a bike-share station can increase ridership by 6.7 percent, and that a 10 percent increase in bike-availability can increase ridership by almost 12 percent.

By taking these commuter preferences into account, the central Paris bike-share system could increase ridership by 29.4 percent.

"A key reason people aren't using the self-service bikes as much as they could is that operators have focused on the bike design and the technology," said Belavina. "There is almost no rigorous analysis of operational aspects, such as station location, and what motivates commuters to seek out or avoid renting a public ride-share bike."

The study, the first of its kind, comes as ridership in some systems has fallen short of projections, and there is increasing pressure on operator finances.

Though bike-sharing systems have existed since the 1950s, the concept sparked renewed interest among urban planners in the last decade, starting in Paris. Since then, Chicago, New York, London, Barcelona, Shanghai, Wuhan and Hangzhou have all implemented large-scale systems, bringing the worldwide bike-share fleet to about 517,000 bikes among 530 systems.

Provided by University of Chicago

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