Analyzing the Equity of Bikeshare Access in Three Large American Cities
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Bikesharing programs have arisen as a unique solution to many of the urban transportation system sustainability challenges. However, the social equity aspect of bikeshare sustainability has not been adequately considered, though the equity of a public system is critical in determining its overall success. By using a spatial analysis that compares social and economic characteristics of the areas inside and outside of bikeshare service areas in Boston, Chicago, and New York City, this study suggests that there is inequitable access to bikeshare among city residents.

Spatial databases describing the locations of bikeshare docking stations was provided by Movtivate. The scope of the bikeshare systems ranges from 1,300 bicycles in Boston, to 3,000 in Chicago, and 6,000 in New York City. The locations of bikeshare stations were used to define the bikeshare service areas in the Geographic Information System (GIS) ArcGIS. Social and economic data describing race, age, income, education level, and population were gathered from the US Census. These categories were separated into ten variables measuring socioeconomic and demographic attributes.

Significant differences in race and income variables inside and outside of the bikeshare service areas were found in all cities. Moreover, in Chicago and New York City, there were also differences in age and education level variables. In all cases, more groups traditionally considered disadvantaged were outside the bikeshare service areas. These results suggest that to combat inequity of bikeshare access, policies such as public subsidies for stations in lower income neighborhoods may be necessary. This study is being continued by this team at the UVM Transportation Research Center by adding Washington DC, Seattle, and Denver to the analysis for a more robust picture of bikeshare access and equity in American cities.