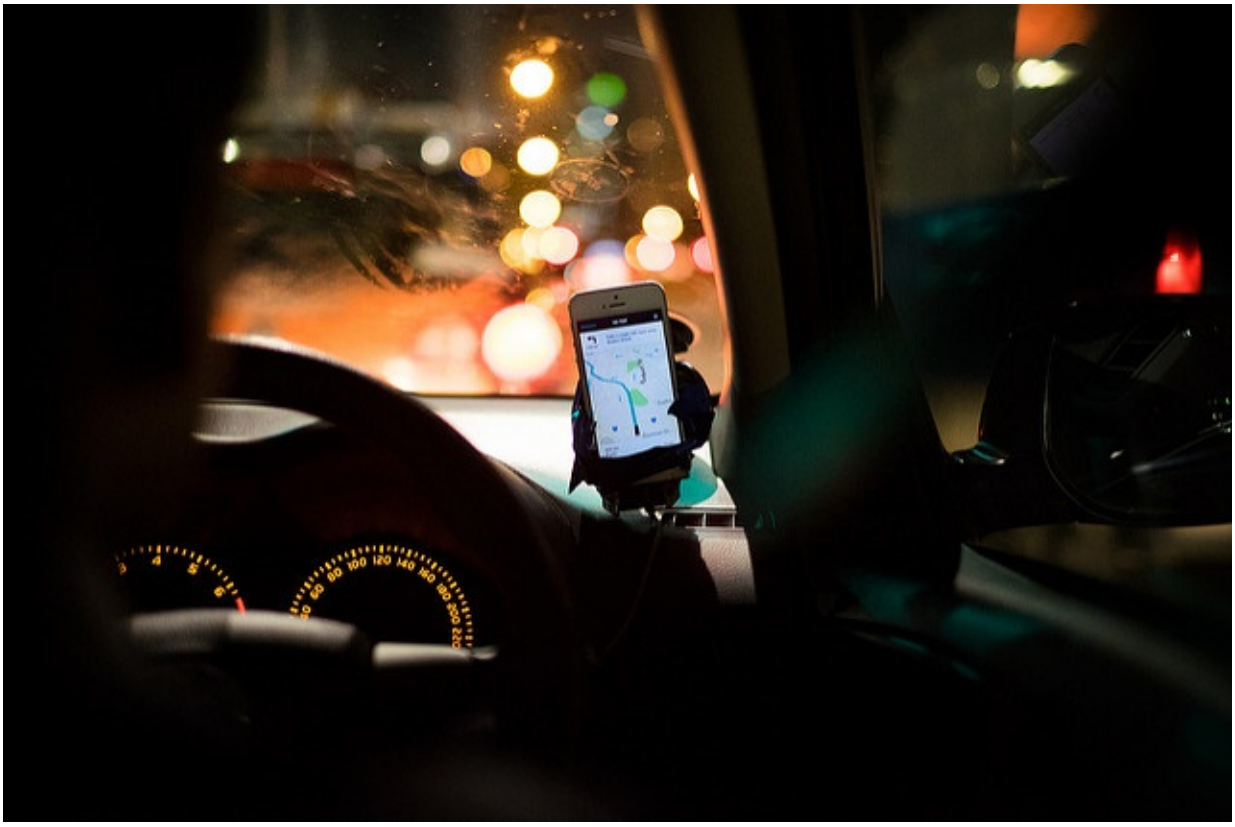
Uber service faster in low income Seattle neighborhoods, initial study finds

October 25 2016, by Jennifer Langston



A new UW study finds Uber wait times in Seattle are faster in lower income neighborhoods. Credit: Noel Tock, flickr

Your wait time for an Uber ride in Seattle is shorter if you are in a lower income neighborhood.

Alternatively, wait times are longer for an Uber in wealthier neighborhoods, according to a new University of Washington study that compares Uber service across different neighborhoods in the Seattle region. The paper was published in the October issue the *Journal of Transport Geography*.

"We found that all else being equal, lower income areas have a shorter average waiting time for an UberX. That was completely not what we expected to find," said senior author Don MacKenzie, a UW assistant professor of civil and environmental engineering. "That said, this is only one way of measuring whether Transportation Network Companies (TNCs) are providing equitable access for all their customers."

MacKenzie is also collaborating with researchers from MIT and Stanford University on further studies to capture and quantify other dimensions of racial and gender discrimination in TNC operations across different cities.

Ride-sourcing companies like Uber and its competitor Lyft broke into the urban transportation market about four years ago and have grown in popularity among customers seeking point-to-point rides on demand, often for less money than traditional taxicabs. Uber is by far the largest such company, with more than 327,000 drivers in the U.S. in September 2015.

Given Uber's rapid growth, the UW researchers wanted to test whether the company offered equitable service across neighborhoods with different socioeconomic backgrounds. The researchers looked at average predicted wait times for an UberX vehicle, the most popular type of service offered by the ride-sourcing company. That's the estimated time given when a customer opens the Uber smartphone app and inputs the desired pickup location.

Using U.S. census data, they calculated the average income, percentage of minorities, population density and employment density for each Seattle neighborhood served by Uber.

Then, over a two-month period in summer 2015, they collected estimated wait times for an UberX vehicle throughout each neighborhood, resulting in a dataset of nearly 1 million observations across the Seattle region.

Not surprisingly, denser neighborhoods such as downtown Seattle had the lowest average wait time of less than four minutes, and most neighborhoods region-wide had wait times of less than 10 minutes. It makes sense that areas with denser housing and offices would demand more Uber drivers, and thus reduce wait times for everyone in those districts.

But even after adjusting for the effects of population and employment density, neighborhoods with lower average income still experienced better service from UberX, as measured by wait times. Each $10,000 increase in the average income of a neighborhood was associated with a 2.3 percent increase in the expected waiting time for an UberX vehicle.

The study also determined that racially diverse neighborhoods with more minorities saw longer wait times at some times of the day and shorter waits at others—with an average effect of close to zero.

"What we've found is a fairly equitable distribution of service based on income and percentage of minorities in census block groups in Seattle," said co-author Ryan Hughes, a former UW graduate student who is now a transportation engineer at Clark Dietz in Illinois.

"The bottom line is, this is good news," MacKenzie said. "We know that there are many other ways inequities and discrimination can arise, and

the requirement for a smartphone and electronic payment can also present structural barriers to using these services for those with low incomes or poor credit. But at least geographically, adequate access to TNC services is not necessarily restricted just to areas that are 'white and wealthy.'"

The researchers only analyzed patterns in Seattle because of funding and time constraints. These methods, however, could be applied to other U.S. cities where Uber operates to see if the availability of rides is equitable in other parts of the country, the researchers said.

More information: Ryan Hughes et al. Transportation network company wait times in Greater Seattle, and relationship to socioeconomic indicators, *Journal of Transport Geography* (2016). DOI: 10.1016/j.jtrangeo.2016.08.014

Provided by University of Washington