

Metropolis and Gotham operate on complementary schedules during the week: demand for rides is higher in Metropolis during the day and in Gotham at night. Thus, we would expect drivers to relocate at certain times in order to maximize their earnings if it weren't for the toll bridge connecting the two cities. We would also expect more intra-city trips during the weekend.

One way to determine whether the proposed policy does encourage drivers to operate in both cities is to perform an A/B test. We could record the number of crossings during a typical week (as measured by a change in login location). We could then implement the policy on a temporary basis the following week, record the number of crossings a second time, and compare the results using the following metrics:

- 1) the number of crossings from Metropolis to Gotham in the evening;
- 2) the number of crossings from Gotham to Metropolis in the morning;
- 3) the number of crossings in either direction during the weekend.

If the price of tolls is what's discouraging drivers from operating in both cities, these metrics should increase during the second week. But whatever the outcome, we should perform a hypothesis test using bootstrap samples of the data in order to determine whether the results are statistically significant.

There are some limitations to this approach, however. For one, we cannot ensure equal demand for ride shares during the two weeks of the experiment; it is always possible that external factors, such as a weather or local events, cause a shift in demand. Furthermore, the proposed experiment assumes that drivers are motivated by profit, rather than other factors such as convenience.