

The first step in tackling this problem is to outline the unclear aspects. We are given that Metropolis has more active during the day and Gotham during the night. Is Ultimate's plan to keep night-time activity high in Gotham and day-time activity high in Metropolis? Maybe they don't want all the partiers from Gotham's night scene going to Metropolis. In this case one thing Ultimate could do is perform a simple A/B test, where one portion of drivers gets to pass between the cities toll-free while the other portion does not. Ultimate can then measure how much time drivers in both groups spent in their respective cities; if drivers without the toll spent more time during the non-peak hours of whichever city, Ultimate can conclude that removing the toll increases activity in the non-peak hours of whichever city, if that's what they want to do. One could use a technique like analysis of variance to determine whether the success metric (i.e., how much time drivers spend in whichever city during non-peak hours) is statistically different between the no-toll riders and the riders with a toll.