Data Analysis Interview Challenge

Part 2 - Experiment and metrics design

1) The key measure of success I would choose for this is to measure the increase in cross-city driver activity compared to the original. This metric directly reflects the change of reimbursing all toll costs.

2) A possible experiment could be to randomly assign drivers to one of two groups: a control group that receives no toll reimbursement, and a treatment group that receives automatic toll reimbursement for cross-city trips.

   For a statistical test I'd suggest an alternative hypothesis stating, toll reimbursement increases the proportion of cross-city drivers.

   I'd use a chi-square test to compare the reimbursed versus control groups to calculate the absolute and relative cross-city activity. The confidence level would be set at 95%, for meaningful results if the p-value is less than 0.05 to provide these recommendations to the city operations team.