Statistical Review and A/B Testing for New York TLC Project

Executive summary report

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Overview

The project aim is to estimate taxi fares before a ride is started.
So far, the project proposal is approved, and dataset is explored and analysed.
Also, both Python and Tableau were used to create data visualizations.

Objective

The current objective is to use statistical methods to answer the research questions like: Is there a relationship between fare amount and payment type? Is the hypothesis true that the customers who use a credit card pay higher fare amounts than those who use cash? Is the difference in payment statistically significant?

Results

- Based on the result of the hypothesis test, the difference in averages of total fares for credit card and cash payments is statistically significant and might be causal. That is, it might be due to a relationship between total fare and credit card payments.
- Also, the hypothesis that customers who pay with credit card pay more is true.
- But there is a problem with this A/B test. For the data collected, tips paid by cash are not included but those by credit cards are included.
- But from the 2nd A/B test where tip amounts were excluded from total amount, we still saw a significant difference of $1.5 more in credit card payments than cash payments.

Next Steps

- It is recommended to encourage Credit card payments. Strategies should be created for the same.
- Maybe they can install signs in cabs that read “Credit card payments are preferred”.
- Maybe ask cab drivers to verbally inform customers that credit card payments are preferred.
- Another recommendation is to request data for cash tips if available.