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

Executive summary report
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Overview

The main purpose of this project is to find ways to generate more revenue for New York City taxi cab drivers.

Problem

This project examines the relationship between total fare amount and payment type. In particular, the project seeks to discover if customers who pay in credit card tend to pay a larger total fare amount than customers who pay in cash.

Solution

The Automatidata team ran an A/B test to analyze the relationship between credit card payment and total fare amount. The key business insight is that encouraging customers to pay with credit cards will likely generate more revenue for taxi drivers.

Details

Keys to success for A/B test

1. Collect sample data from an experiment in which customers are randomly selected and divided into two groups:

    a. Customers who are required to pay with credit card

    b. Customers who are required to pay with cash. This enables us to draw causal conclusions about how payment method affects fare amount.

2. Compute descriptive statistics to better understand the average total fare amount for each payment method available to the customer.

3. Conduct a two-sample t-test to determine if there is a statistically significant difference in average total fare between customers who use credit cards and customers who use cash.

Results Summary

We conclude that there is a statistically significant difference in average total fare between customers who use credit cards and customers who use cash.

Next Steps

Our general recommendation for the New York City TLC is to encourage customers to pay with credit cards, and devise strategies to promote credit card payments. For example, the New York City TLC can install signs that read "Credit card payments are preferred" in their cabs, and implement a protocol that requires cab drivers to verbally inform customers that credit card payments are preferred.