

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

## Executive Summary Report

Commissioned and Prepared by Automatidata

The New York City Taxi & Limousine Commission has collaborated with Automatidata to create a regression model that can predict the fares of taxi rides accurately. This project focuses on determining if there is a notable difference between the average fare paid by a passenger using a Credit Card or Cash for the ride.

### Key Insights

**Overview:** The overall goal of this project is to predict taxi fares prior to the ride. At this stage, the task is to determine ways to generate more revenue for New York City taxi drivers, and examines the relationship (if any) between payment type and fare amount.

**The Problem:** Taxi drivers receive a varying amount of tips, the goal of this project is to determine if those that pay by credit card pay, on average, larger total fares than those that pay with cash.

**The Solution:** Autmatidata's team conducted an A/B test to examine the correlation between payment type and fare amount. The test's outcome suggests that taxi drivers can expect to earn higher revenue on average if riders are encouraged to pay with credit card over cash.

### Details

#### A/B Test Steps Conducted:

1. Collected sample data from an experiment where customers are randomly selected and divided into two groups; customers who are required to pay with credit card, and customers required to pay with cash.
2. Computed descriptive statistics to understand the average fare amount paid by each payment type.
3. Conducted a two-sample T-Test to determine if the difference in fare amounts paid by each group is statistically significant.

#### A/B Test Results:

There is a statistically significant difference in the average fare amount paid by those using credit card and cash. Those that paid with credit card, on average, paid higher total fares.

### Next Steps

Investigate methods to promote credit card use as the main payment method. This could include:

- A rewards or points program.
- Improved and more seamless payment integration.
- Partnerships and Cross-Promotions.
- Marketing campaigns to educate riders on why credit cards are the ideal payment method.