MAXIMIZING REVENUE FOR DRIVERS

Through Payment Type

Agenda

- Problem Statement
- Data Overview
- Methodology
- Analysis & Findings
- Hypothesis Testing
- Recommendations

Problem Statement

In the fast-paced taxi booking sector, making the most of revenue is essential for long-term success and driver happiness.

Our goal is to use data-driven insights to maximize revenue streams for taxi drivers in order to meet this need. Our research aims to determine whether payment methods have an impact on fare pricing by focusing on the relationship between payment type and fare amount.

Data Overview

For this analysis, we utilized the comprehensive dataset of NYC Taxi Trip records, used data cleaning and feature engineering procedures to concentrate solely on the relevant columns essential for our investigation.

Relevant columns used for this research

- passenger_count (1 to 5)
- payment_type(card/cash)
- fare_amount
- trip_distance(miles)
- duration(minutes)

passenger_count	payment_type	fare_amount	trip_distance	duration
1	Card	6.0	1.20	4.800000
1	Card	7.0	1.20	7.416667
1	Card	6.0	0.60	6.183333
1	Card	5.5	0.80	4.850000
1	Cash	2.5	0.03	0.883333

Methodology

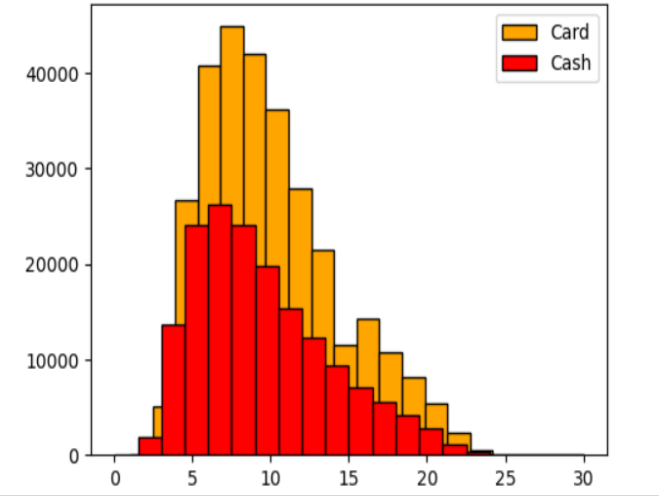
Step	Description
Descriptive Analysis	Performed statistical analysis to summarize key aspects of the data, focusing on fare amounts and payment types.
Hypothesis Testing	Conducted a T-test to evaluate the relationship between payment type and fare amount, Testing the hypothesis that different payment methods influence fare amounts.
Regression Analysis	Implemented linear regression to explore the relationship between trip duration (calculated pickup and drop-off times) and fare amount.

Journey Insights

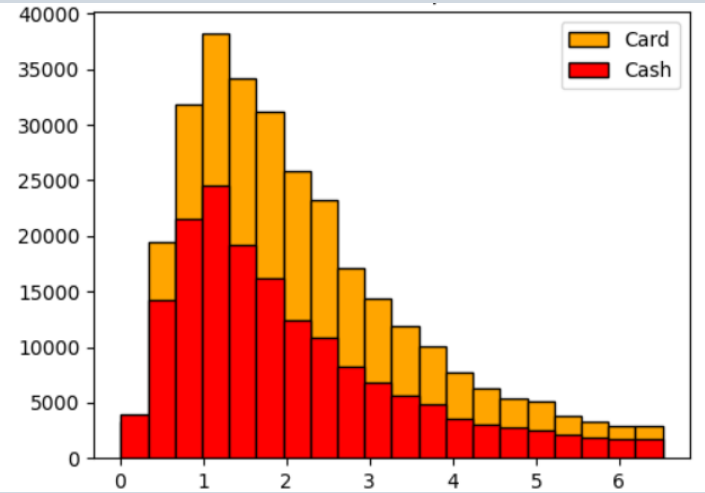
- **Customers paying with cards tend to have a slightly higher average trip distance and fare amount compared to those paying with cash.**

- **Indicates that customers prefers to pay more with cards when they have high fare amount and long trip distance.**

Fare Amount

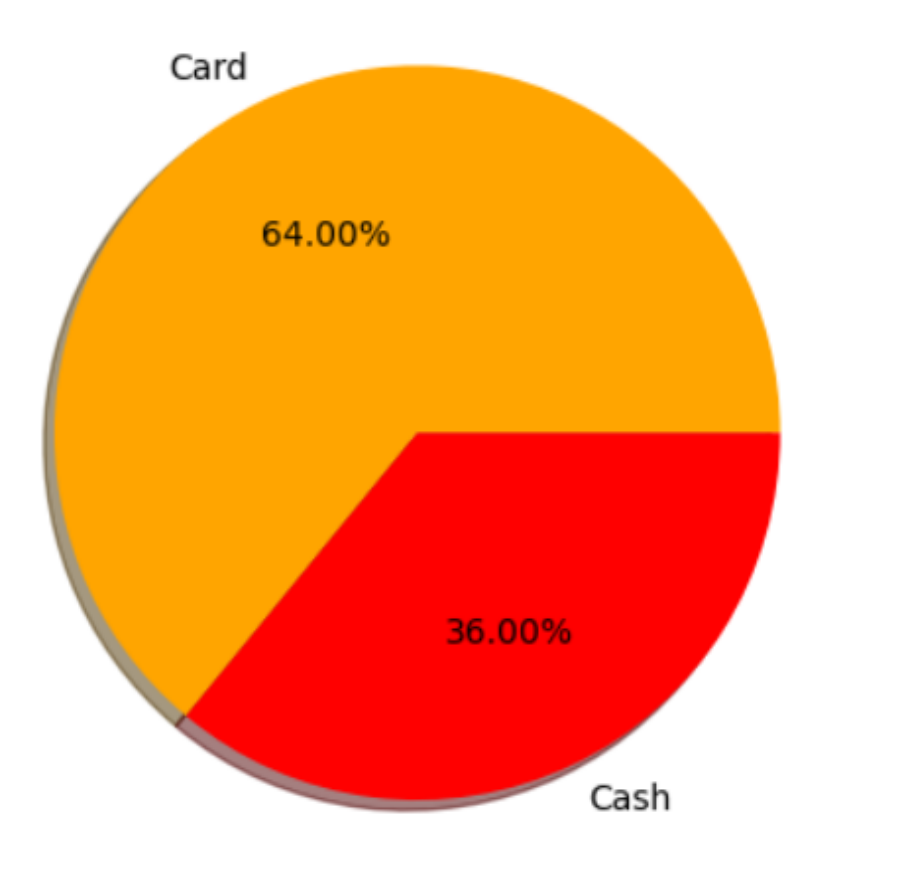


Trip distance



	Payment type	Fare amount	Trip distance
mean	Card	10.12	2.19
std		4.27	1.37
mean	Cash	9.71	2.04
std		4.30	1.39

Preference of Payment Types

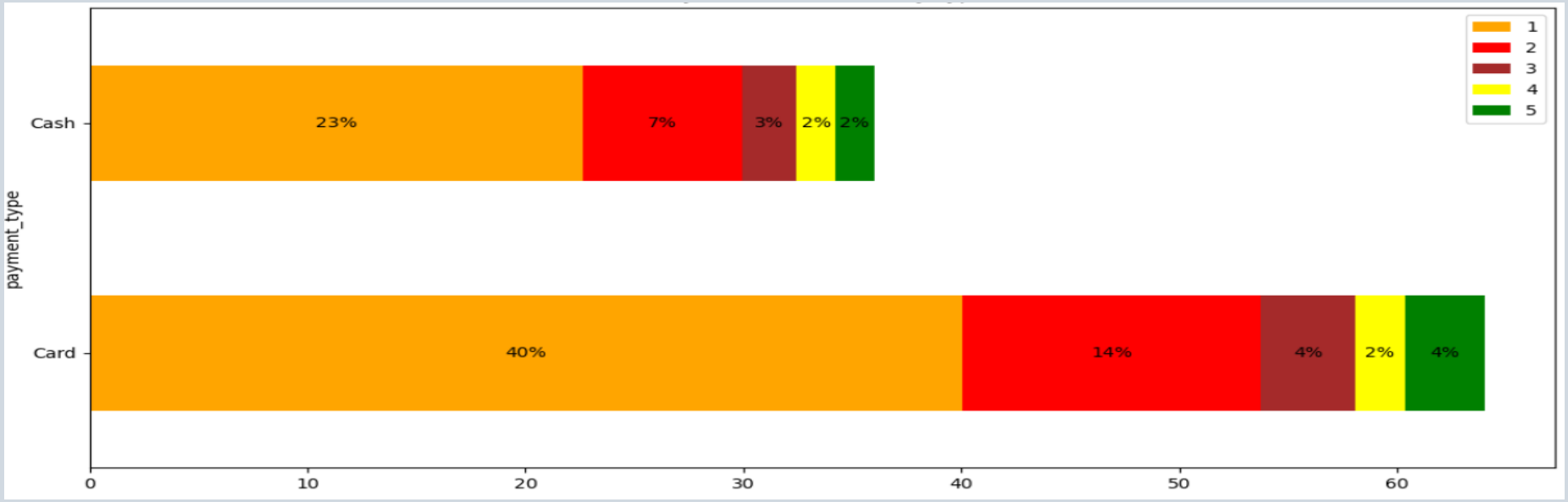


- The proportion of customers paying with cards is significantly higher than those paying with cash, with card payments accounting for 64% of all transactions compared to cash payments at 34%.

- This indicates a strong preference among customers for using card payments over cash potentially due to convenience, security, or incentives offered for card transactions.

Passenger Count Analysis

- Among card payments, rides with single passenger (No. of Passenger=1) comprise the largest proportion, constituting 40% of all card transactions.
- Similarly, cash payments are predominantly associated with single passenger rides, making up 23% of all cash transactions.
- There is a noticeable decrease in the percentage of transactions as the passenger count increases, suggesting that larger groups are less likely to use taxis or may opt for alternative payment methods.
- These insights emphasize the importance of considering both payment method and passenger count when analyzing transaction data, as they provide valuable insights into customer behavior & preferences.



Hypothesis Testing

Null Hypothesis :- There is no difference in average fare between customers who use credit cards and customer who use cash.

Alternate Hypothesis :- There is a difference in average fare between customers who use credit cards and customer who use cash.

With a T-statistics: 30.99 and a p-value of less than 0.05, we reject the null hypothesis, suggesting that there is indeed a significant difference in average fare between the two payment methods.

Recommendations

- Encourage customers to pay with credit cards to capitalize on the potential for generating more revenue for taxi cab drivers.
- Implement strategies such as offering incentives or discounts for credit card transactions to incentivize customers to choose this payment method.
- Provide seamless and secure credit card payment options to enhance customer convenience and encourage adoption of this preferred payment method.

Thank You