Credit Card Spending Behavior Analysis

A deep dive into customer loyalty, transaction trends, and forecasting

Spenderlytics Overview

- Our software company specializes in analyzing credit card transaction data to provide actionable insights, accurate forecasting, and intelligent dashboards that help companies make data-driven decisions.

- Today, we will present how we can use your credit card transaction data to uncover trends, improve customer targeting, and forecast spending behavior.

Founding Team

Asif Khan

Jason Brooks
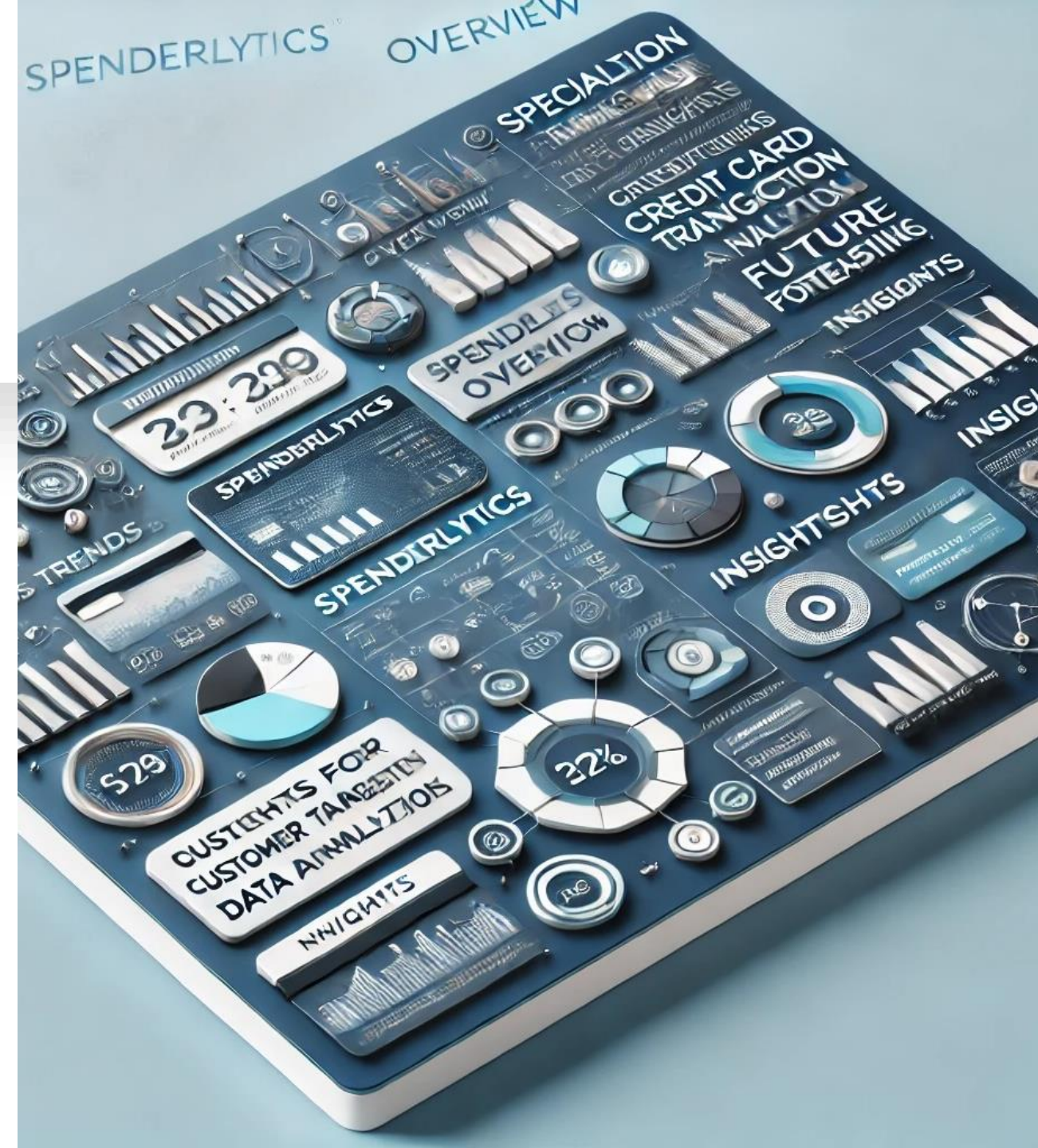
Amit Gaikwad

Kade Thomas

Simranpreet Saini

- **Data Source**:
  - **Kaggle** (Credit Card Transactions Dataset)

- **Data Columns**:
  - Date: Transaction date & Time
  - Credit Card Number
  - Amount: Transaction amount.
  - Merchant
  - Category: Spending category (e.g., Groceries, Dining, Travel, etc.)
  - Geo Information: State/City/Population
  - User Info: Gender/Job/Age

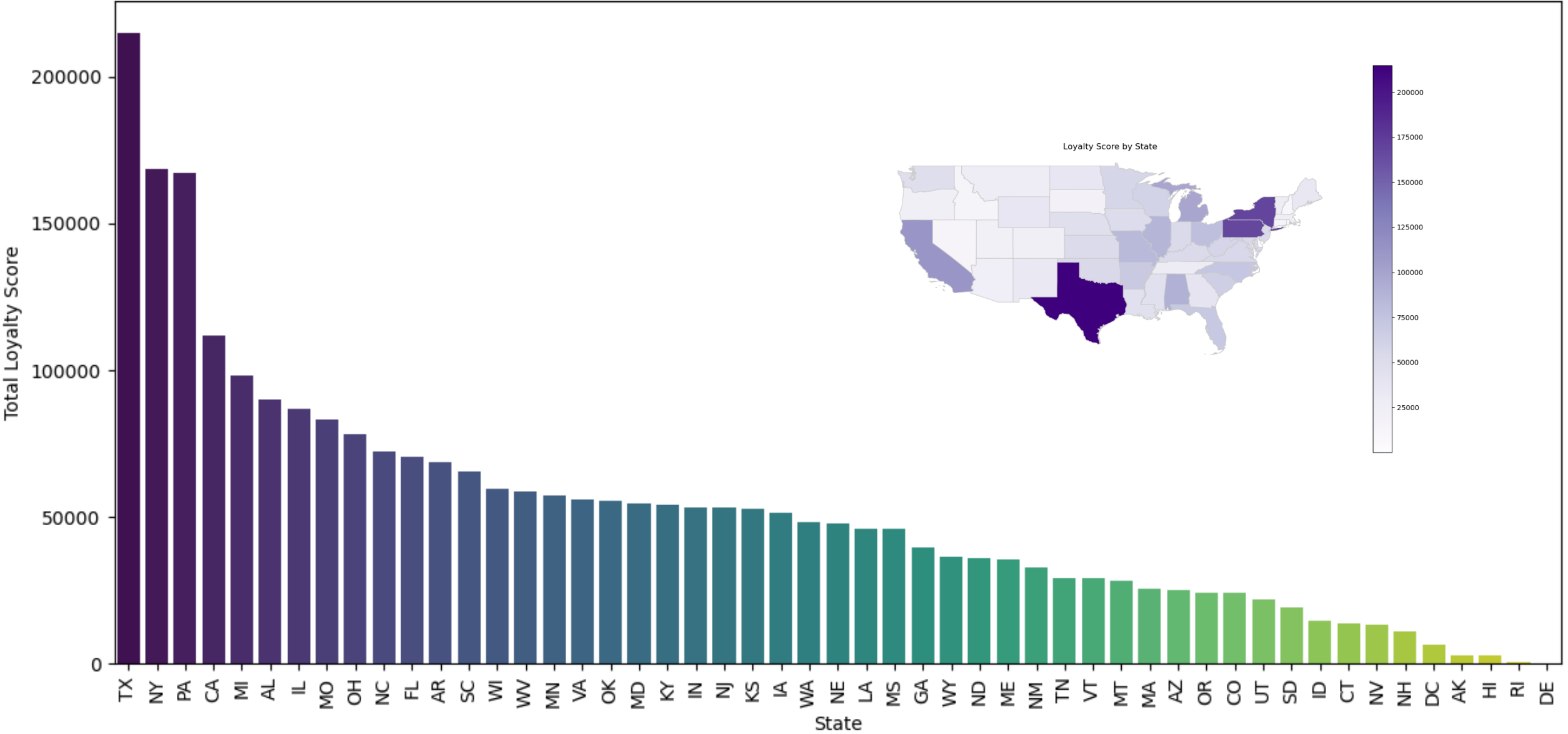- **Data Size:**
  - 1.5 years
  - 983 Unique Credit Cards
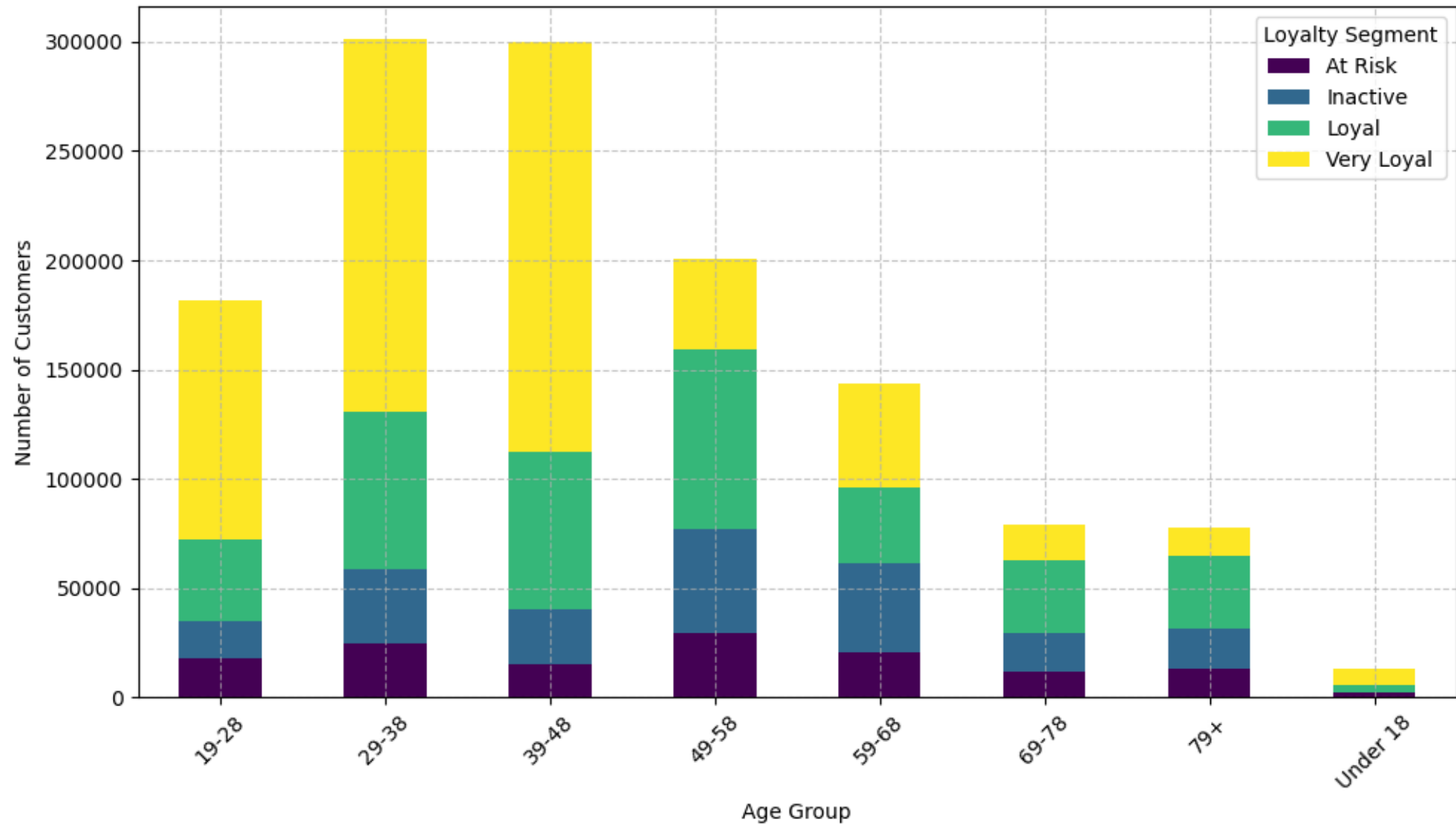 - 1.29M records

Key Analysis Areas

Lifetime (LTV) Value

Customer Loyalty

Merchant Analysis

Age Segmentation

Marketing Opportunities

Fraud

Customer Loyalty Analysis

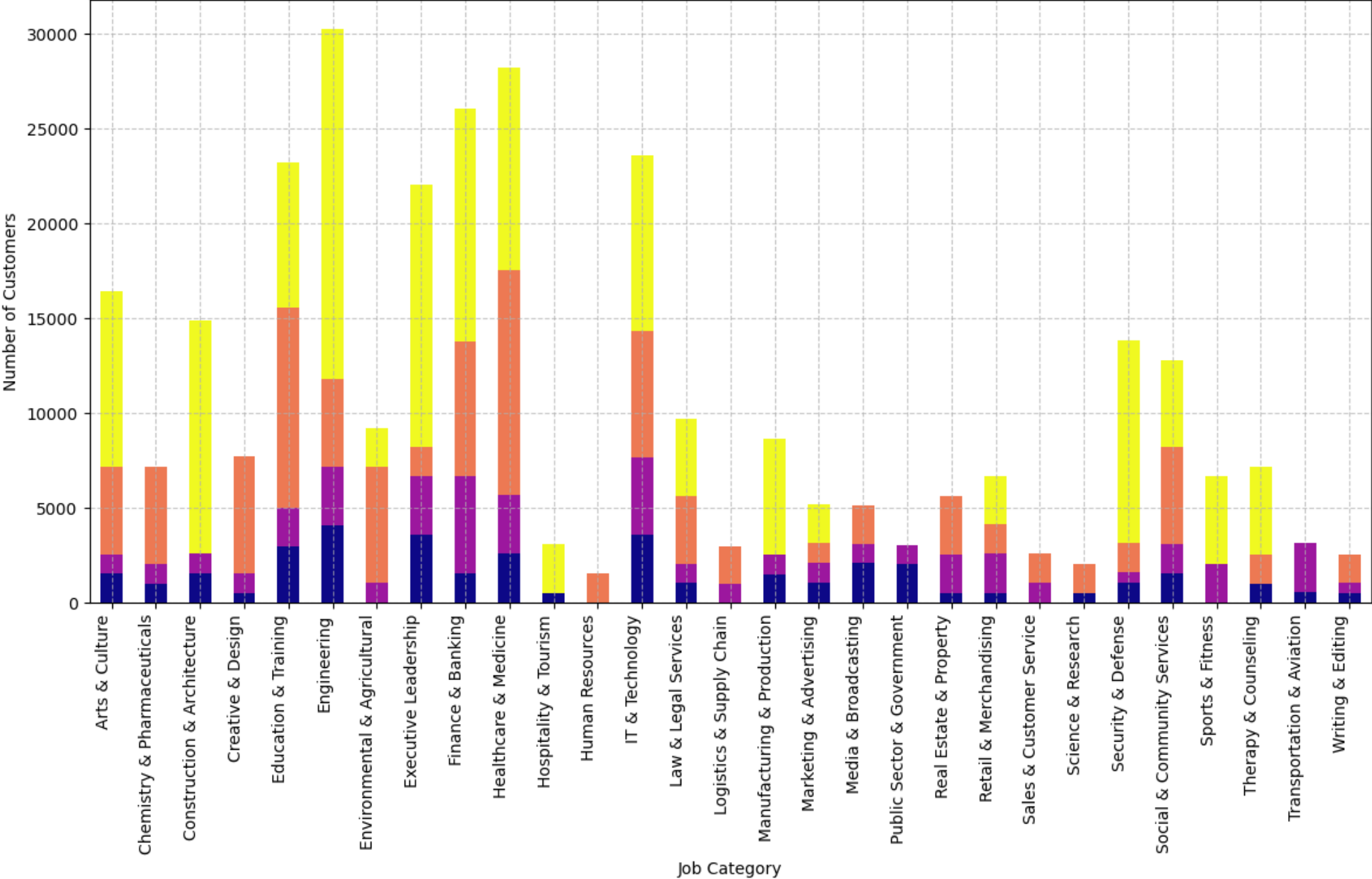Loyalty Score by State (Sorted in Descending Order)

Loyalty Segments by Age Group

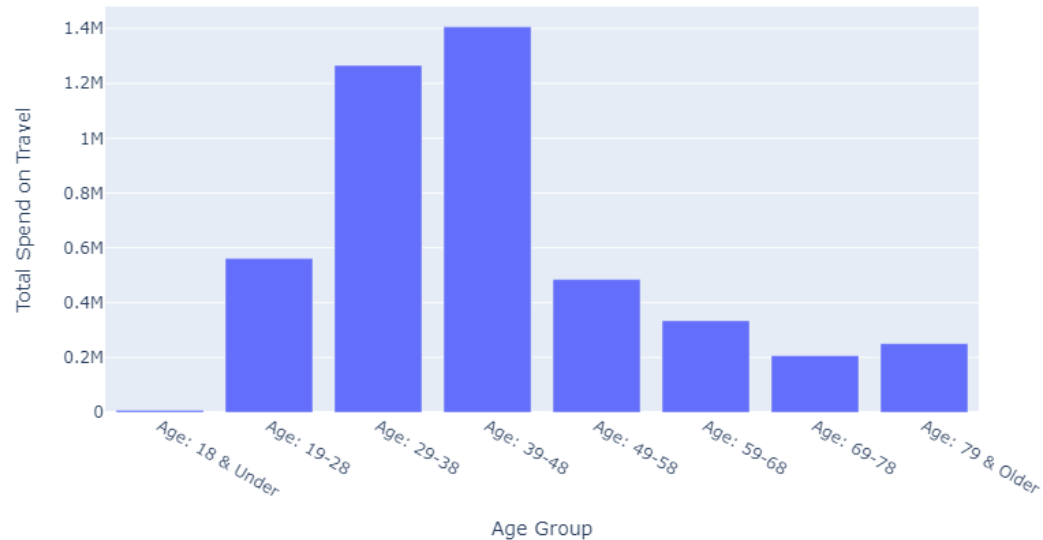Loyalty Segments by Job Category (Excluding Miscellaneous)
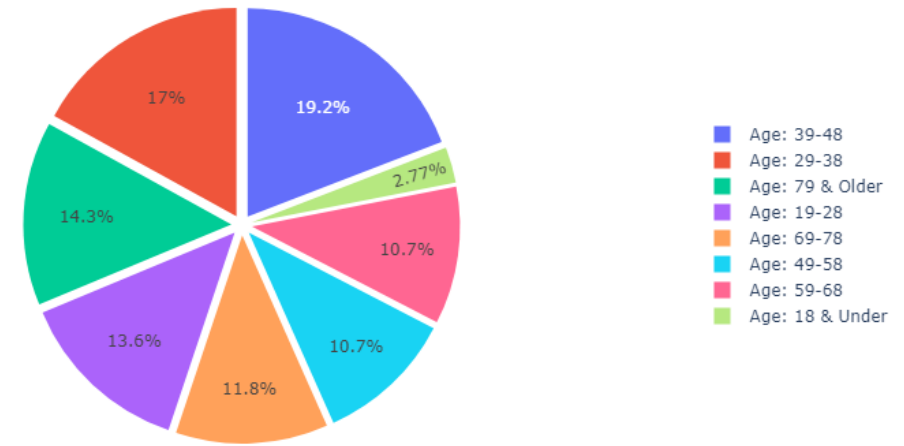
Age Segmentation Analysis

Travel Spend Opportunities


Total Spending on Travel by Age Group

Percentage of Travel Spending as Part of Total Spending by Age Group

- Target Ages : 49-58, 58-68, 69-78
- Tailored Reward Points Incentives: 3X points on travel spend
- Complimentary Travel Insurance
- Family Bonus : 3+ more airline ticket purchases – 5000 points
- Health and Wellness Travel Perks : Partner with Spa Resorts, Health Retreats, Medical Travel

Fraud Among the Ages

Percentage of Fraudulent Transactions by Category
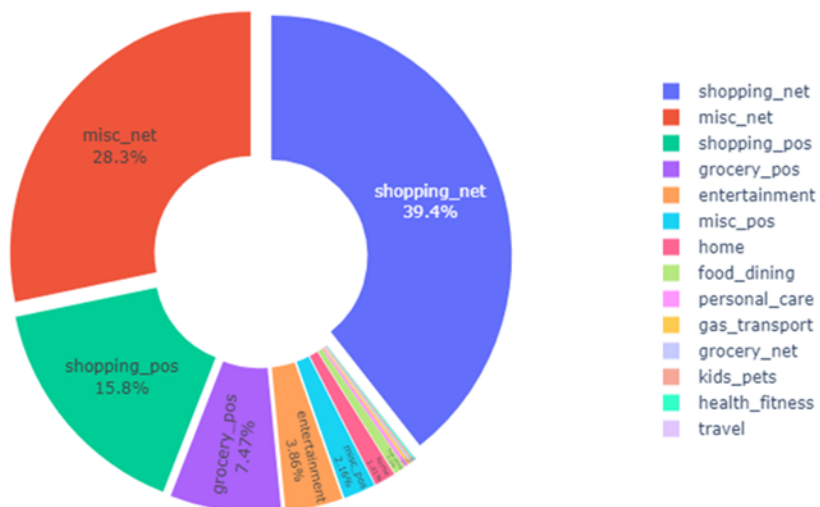
Percentage of Fraudulent Transactions by Age Group
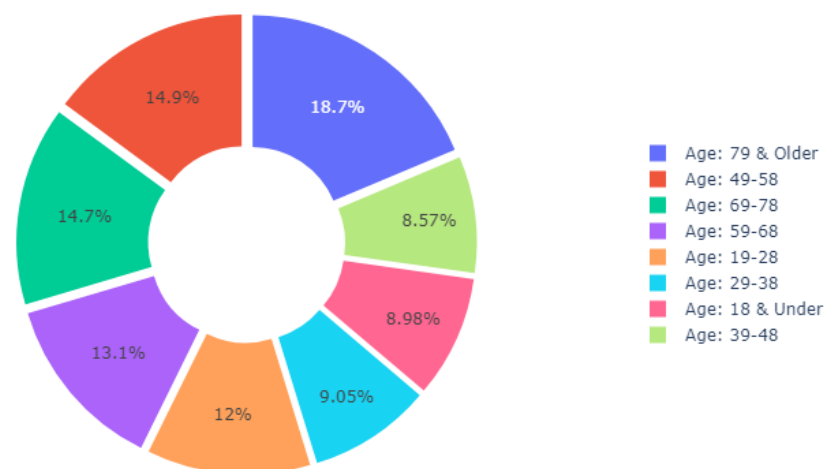
- Target Ages and Categories: 79 & Older – 67.7% Fraud transactions online shopping (misc_net, shopping_net
- Increase security of online shopping
  - Dynamic MFA
  - Biometrics
  - Make OTP mandatory
  - Tokenization
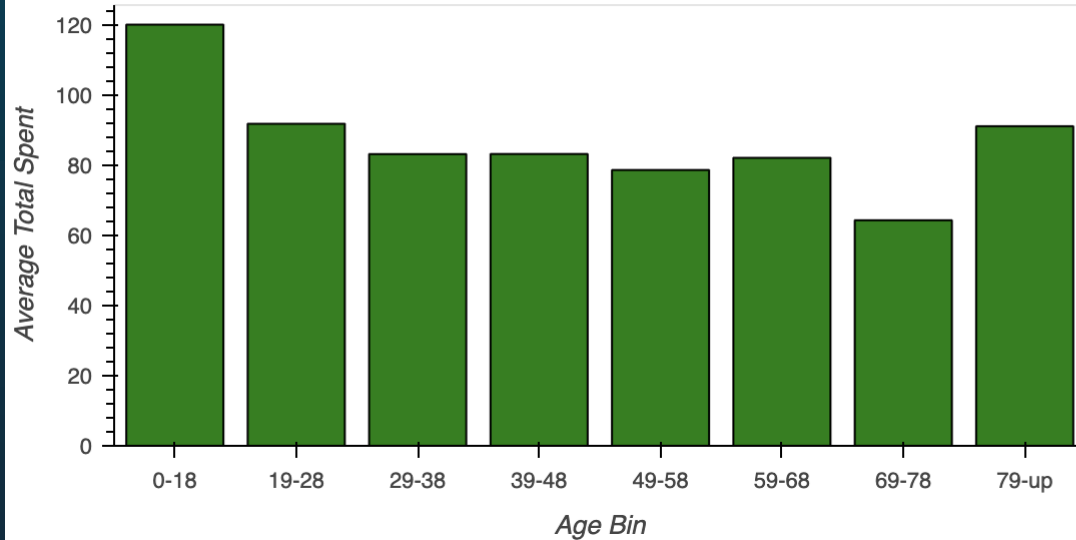 - AI "Smart Guard" – analyzing spending patterns in real time
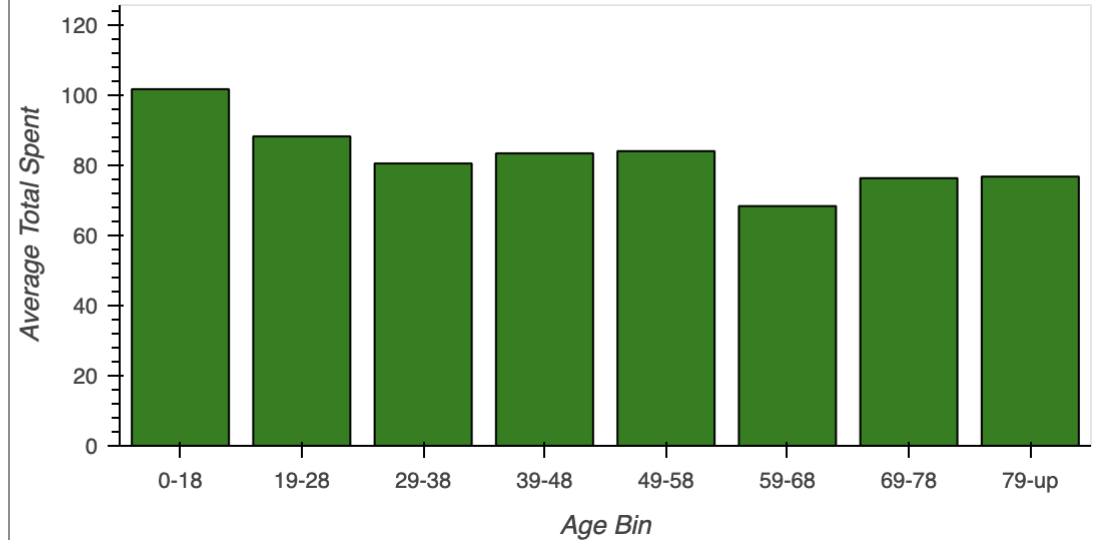
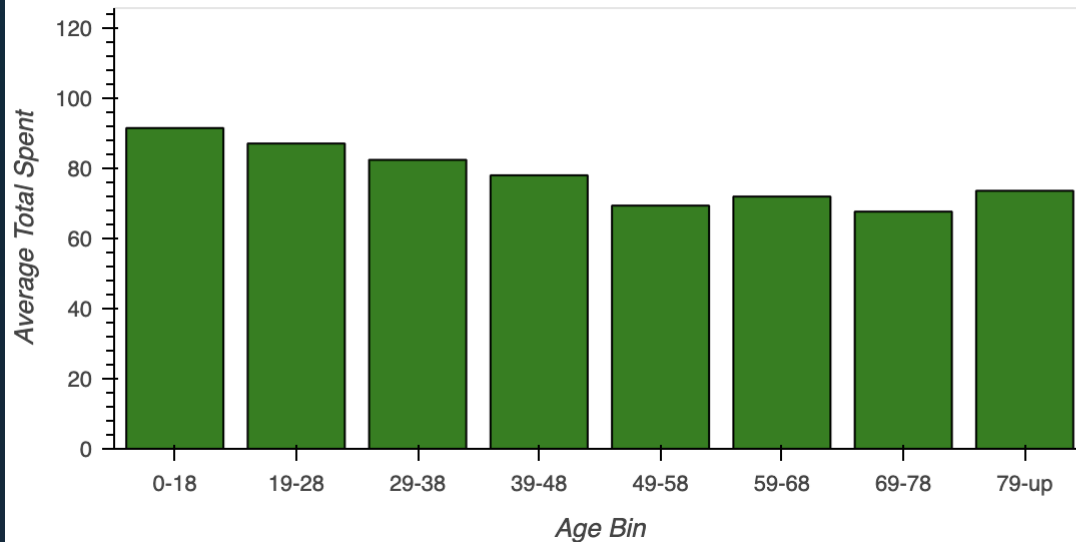# Marketing Opportunities& Fraud Forecasting

Marketing Opportunities
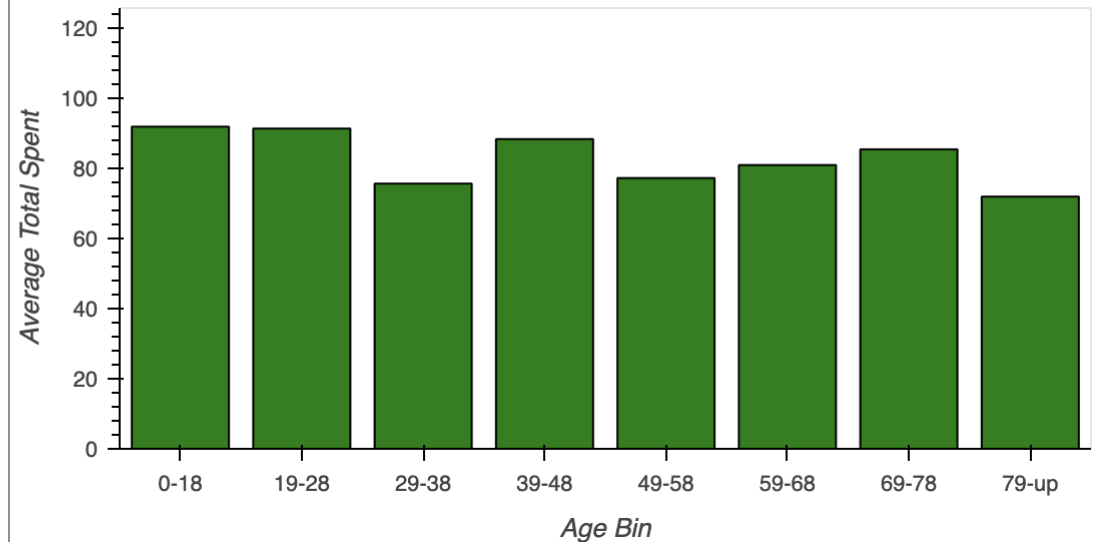
Fraud Forcast

- Neural Prophet, Prophet, and ARIMA models
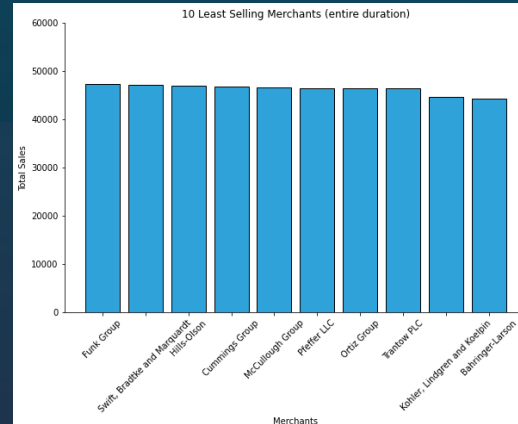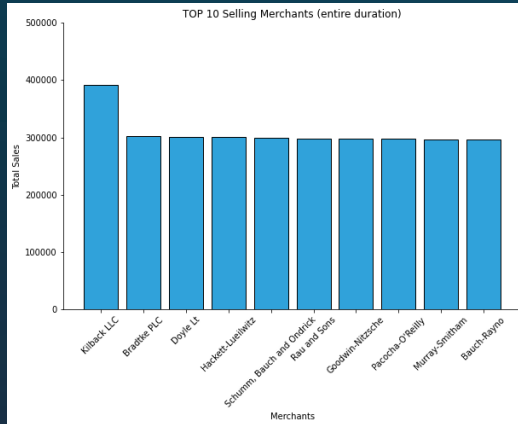- Excessive outliers

- Daily fraud range:
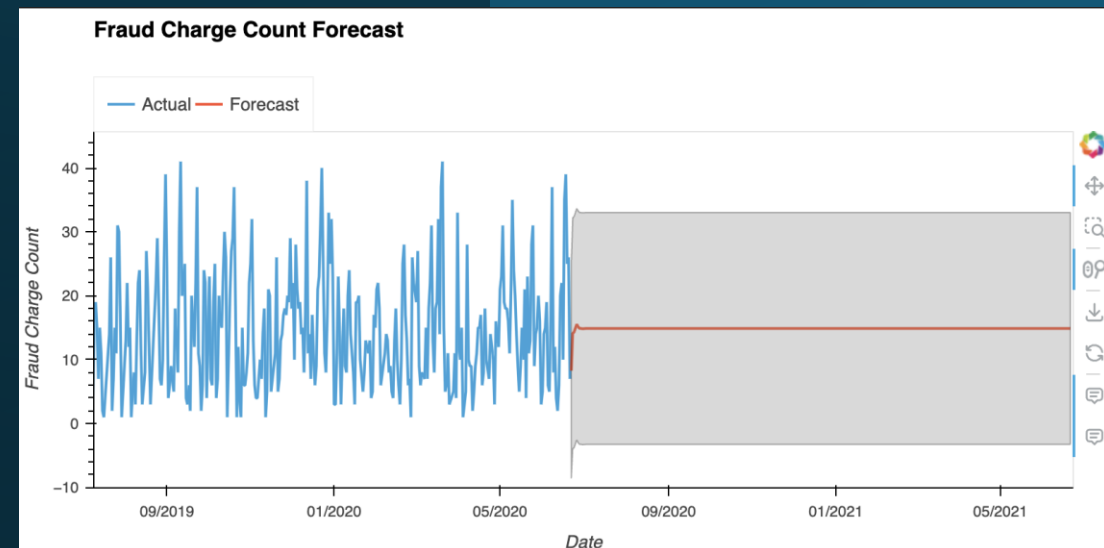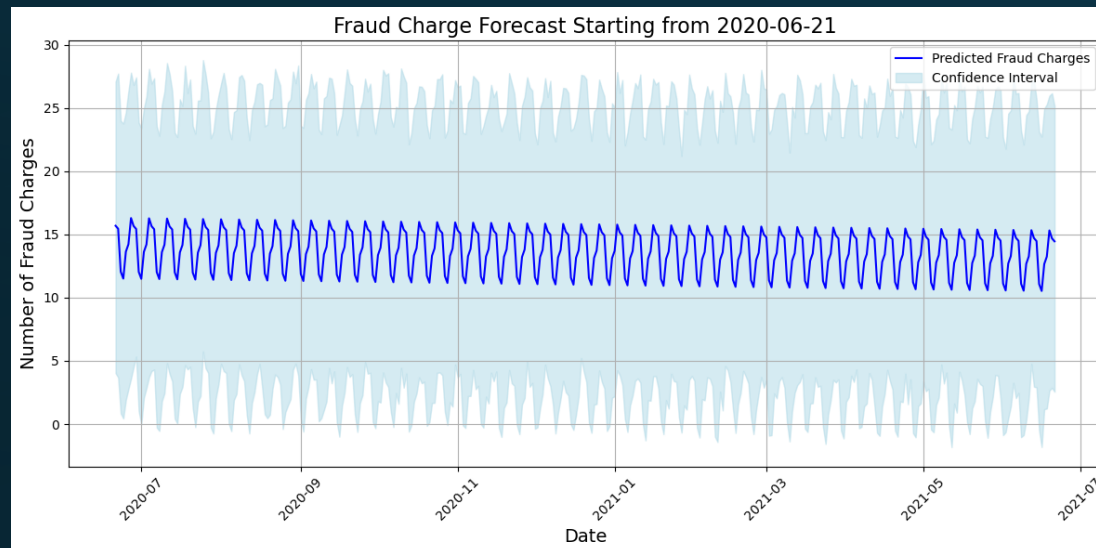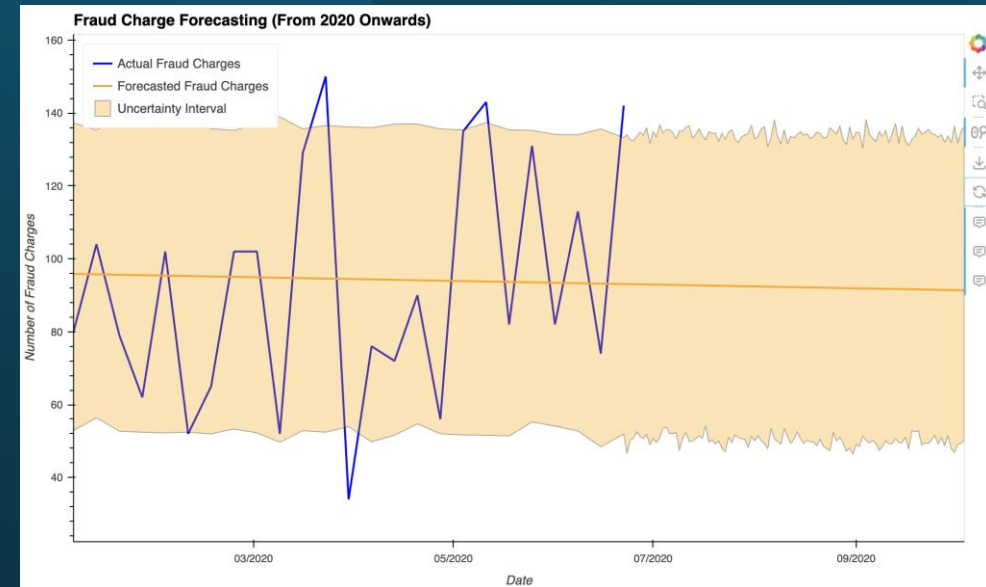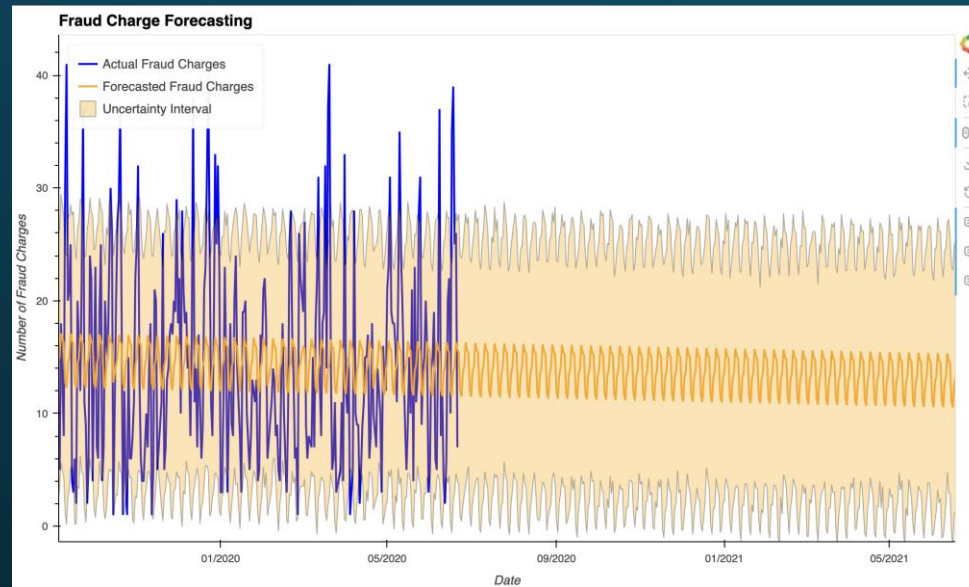
Spending Behavior by Merchants

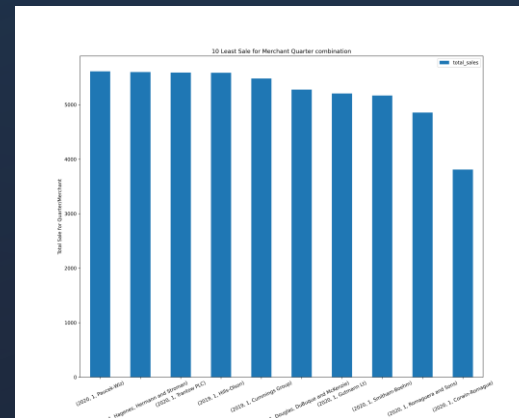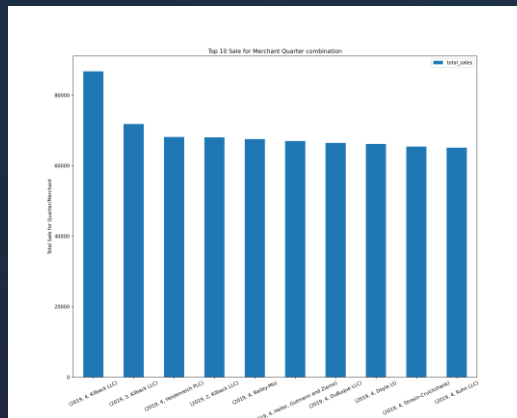# Merchant Sales Performance Overview

Top and Least Ten Selling Merchants for entire duration.

Top and Least Ten Selling Merchants for quarter.

- Market Trends and Insights

  - Potential Market Trends: Identify emerging trends based on sales data.
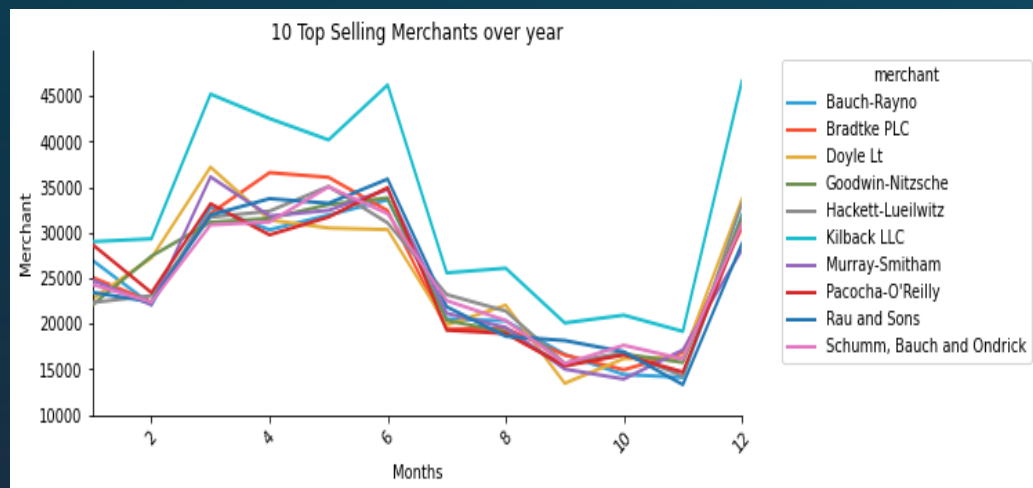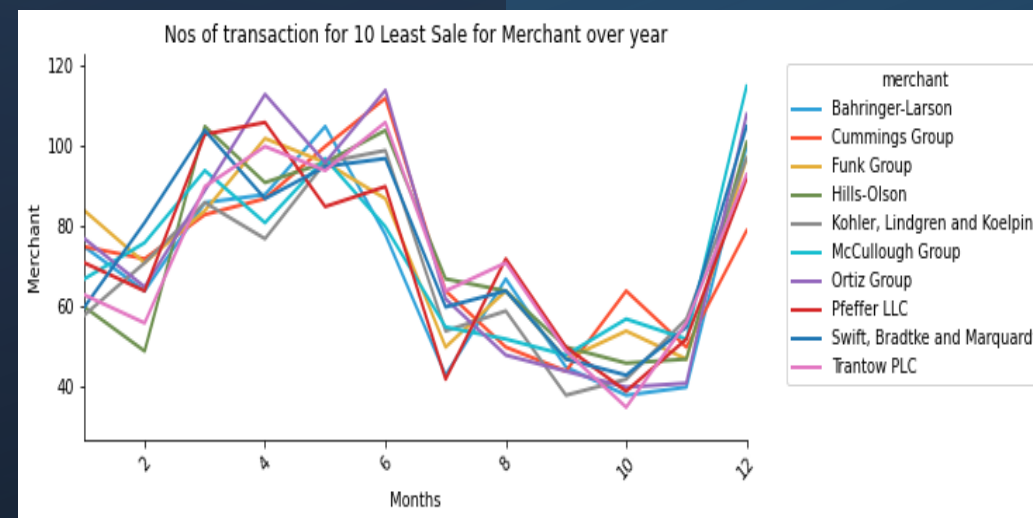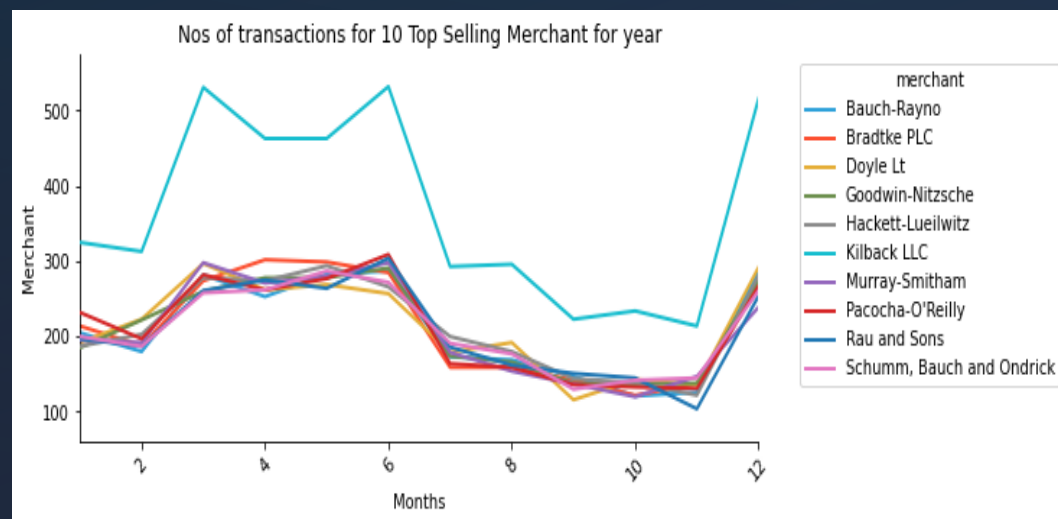
  - Areas of Improvement: Strategies for lower-performing merchants.

  - Strategic Partnerships: Form partnerships with top-performing merchants and provide support to lower-performing ones

Merchant Sales Performance Overview (contd.)

Top and Least Ten Selling Merchants for year

Top and Least Ten Transactions for Merchants for year.
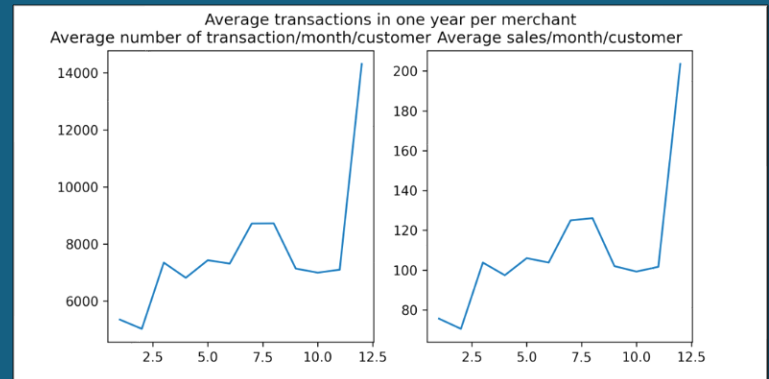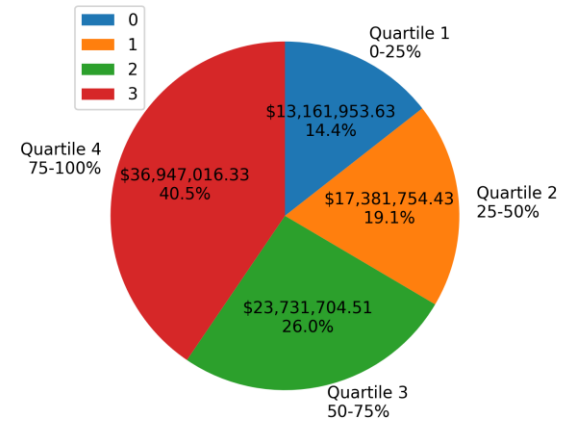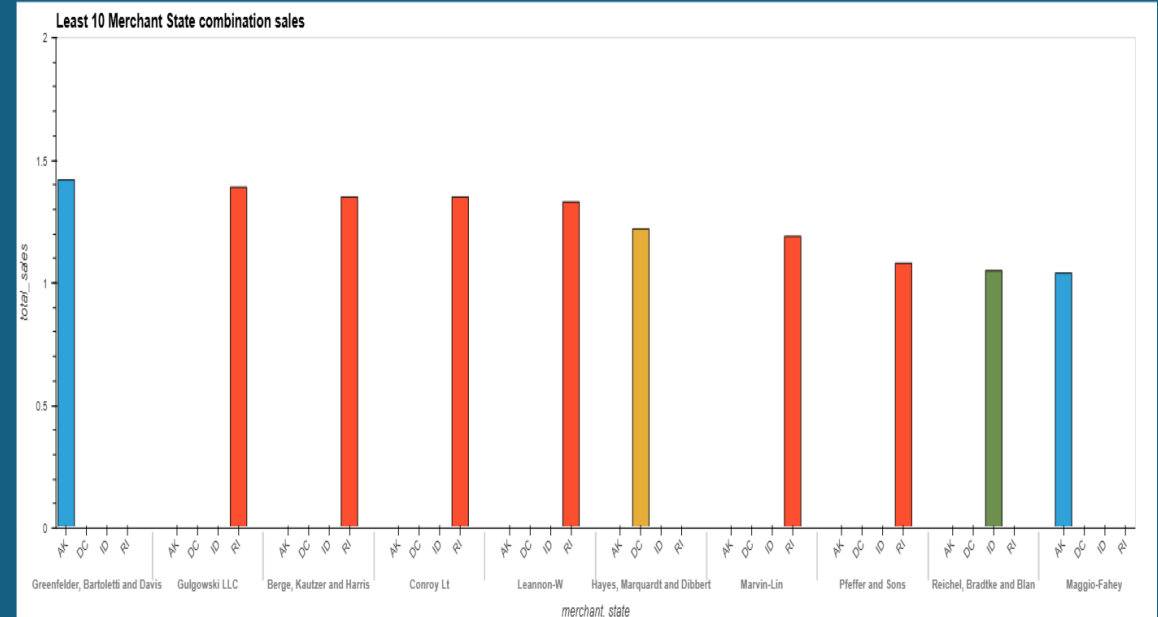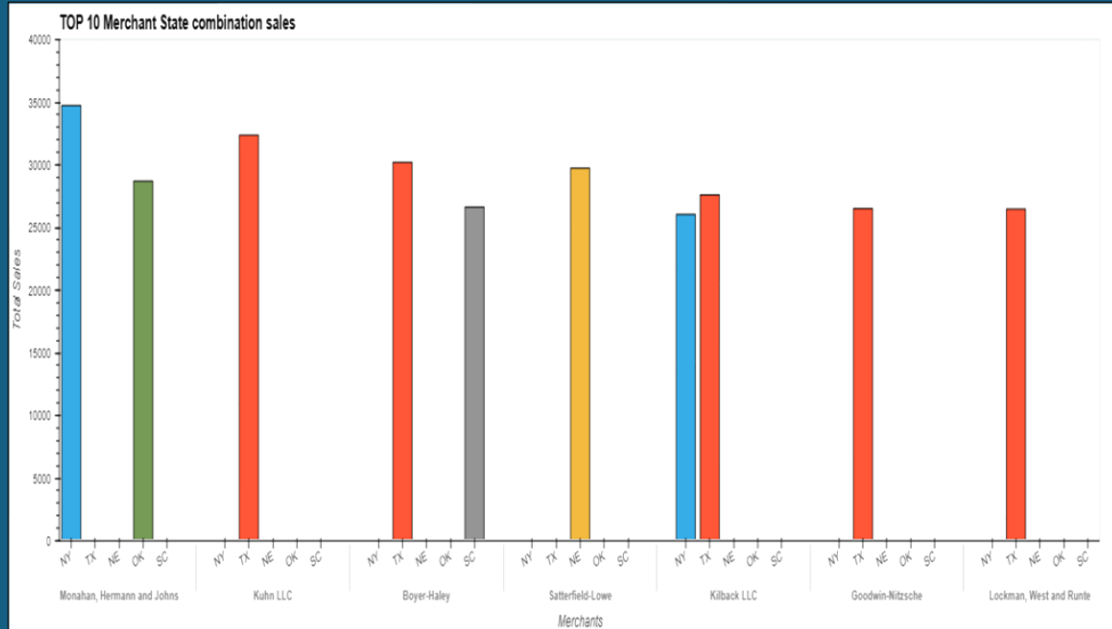
Total sales for all merchants in a year

- Average number of transactions per month for merchant
- Average sales per month for merchant
- 4 Quartiles distribution of merchant sales

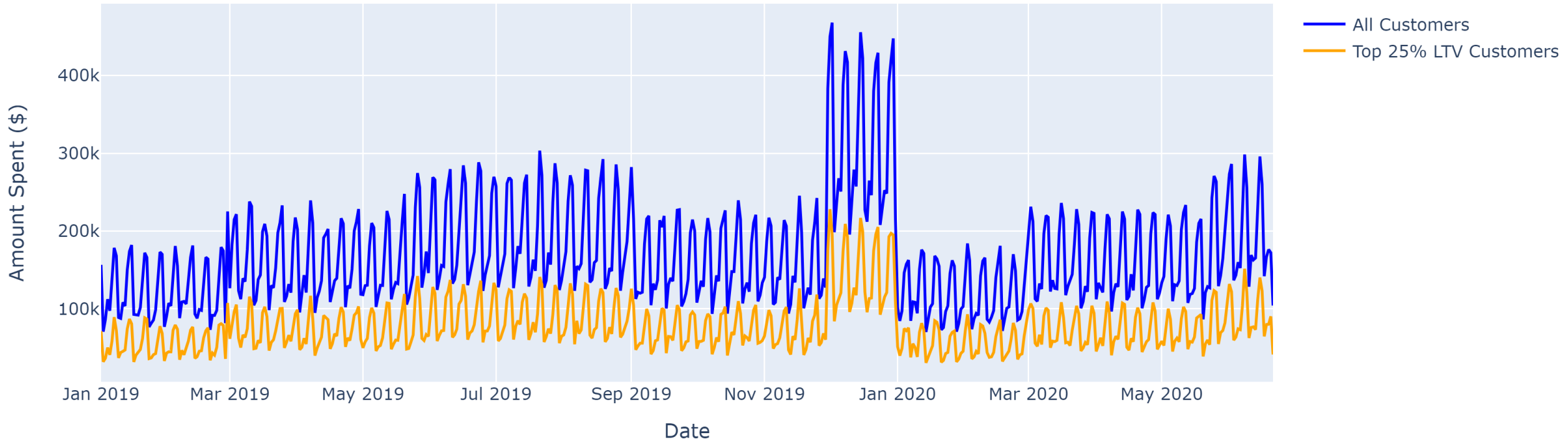# Top & Bottom Ten sales for merchant state wise

Lifetime Value (LTV) Forecasting

Top 25% LTV vs All Customers

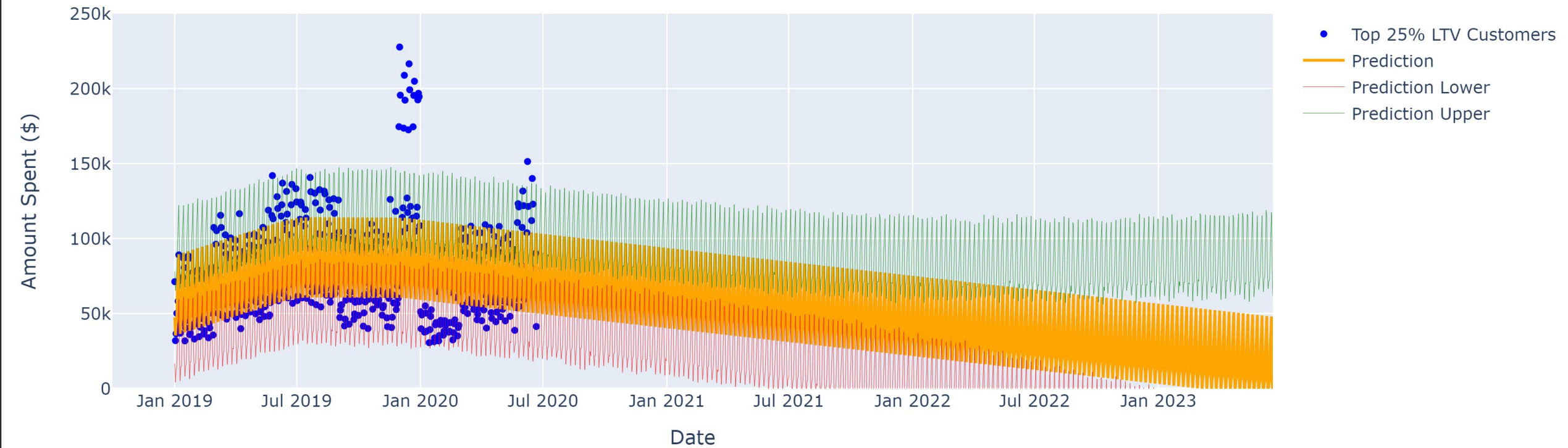All Customers vs. Top 25% LTV Customers Total Spending per Day
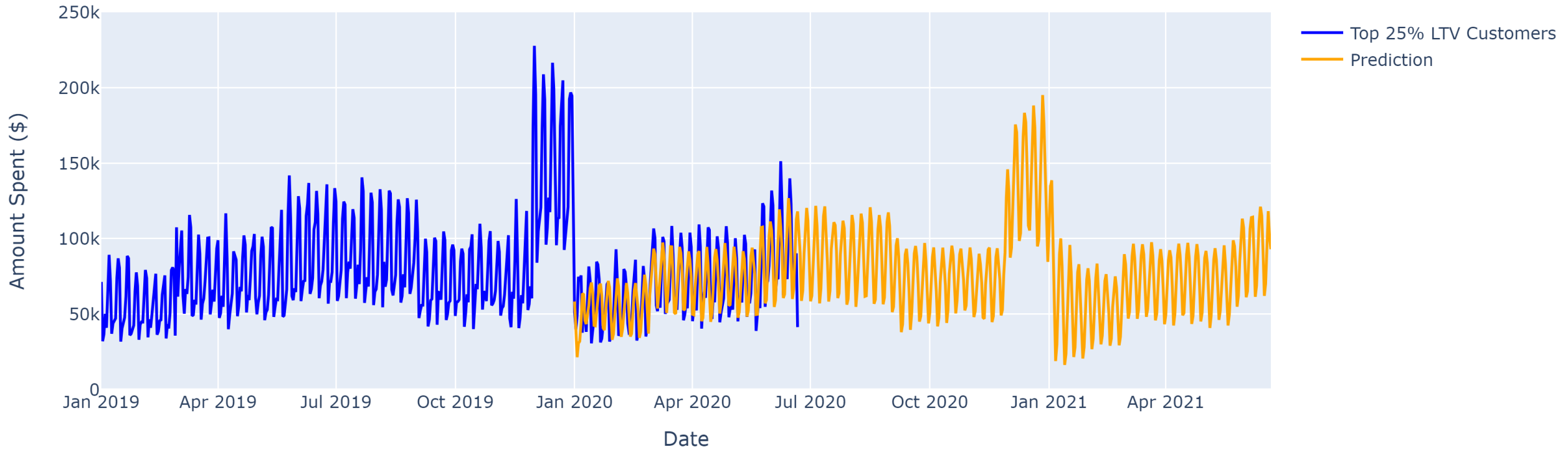
Prophet Forecast

ARIMA Forecast

Future Improvements

Advanced Segmentation using ML & AI

Real-Time Data Integration

Customer Dashboards

Generalized App

Thank You!

Website & Social Media Coming Soon…