

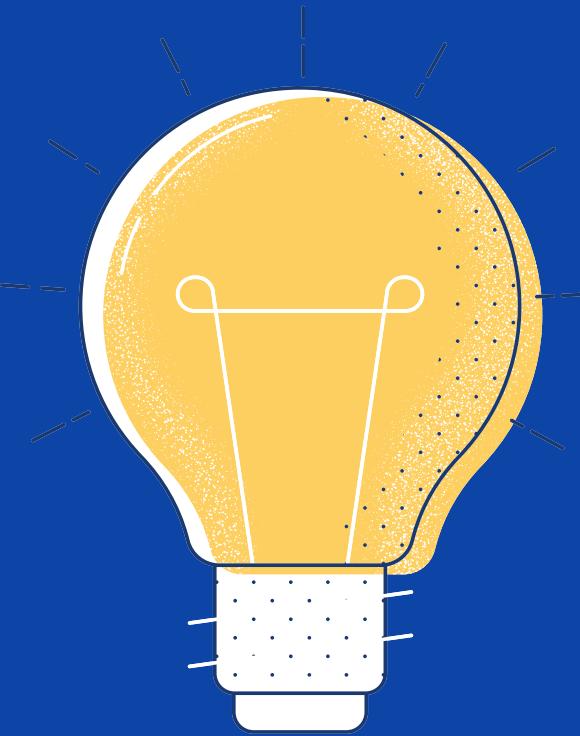
# NYC TLC Taxi Trip Data Analysis - Tipping Behavior



by Hans Darmawan  
JCDS2602



# OVERVIEW



- 
- BACKGROUND
  - GAP ANALYSIS
  - PROBLEM STATEMENT
  - SCOPE OF WORK
  - DATA UNDERSTANDING
  - DATA WRANGLING
  - EXPLORATORY DATA ANALYSIS

## BACKGROUND

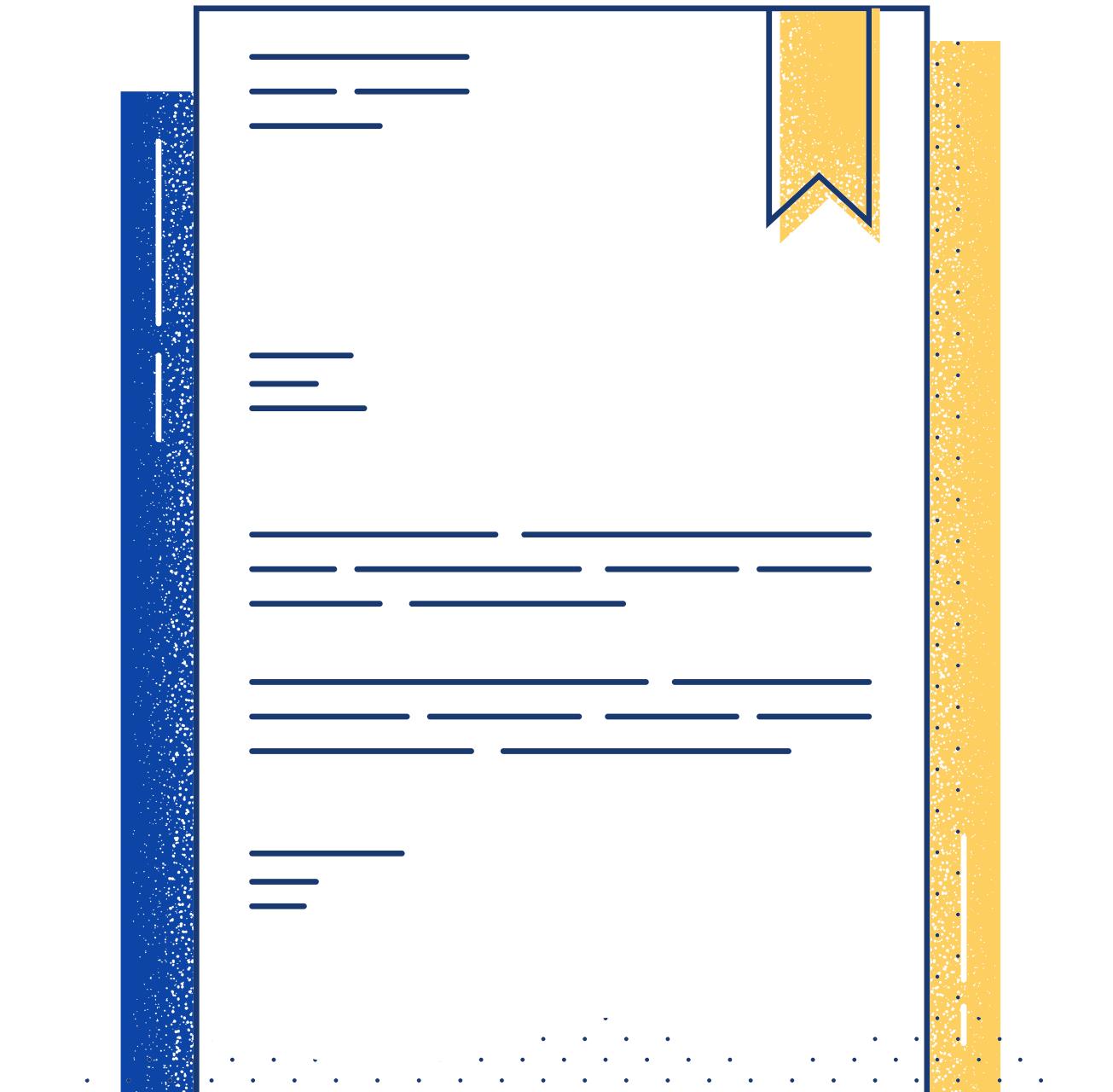


- Taxi transportation is essential for urban mobility, offering convenience and accessibility
- NYC TLC regulates taxis and for-hire vehicles in New York City since 1937
- Competition between traditional taxis and ride-sharing services has increased significantly
- Tipping behavior significantly influences taxi driver earnings

# GAP ANALYSIS

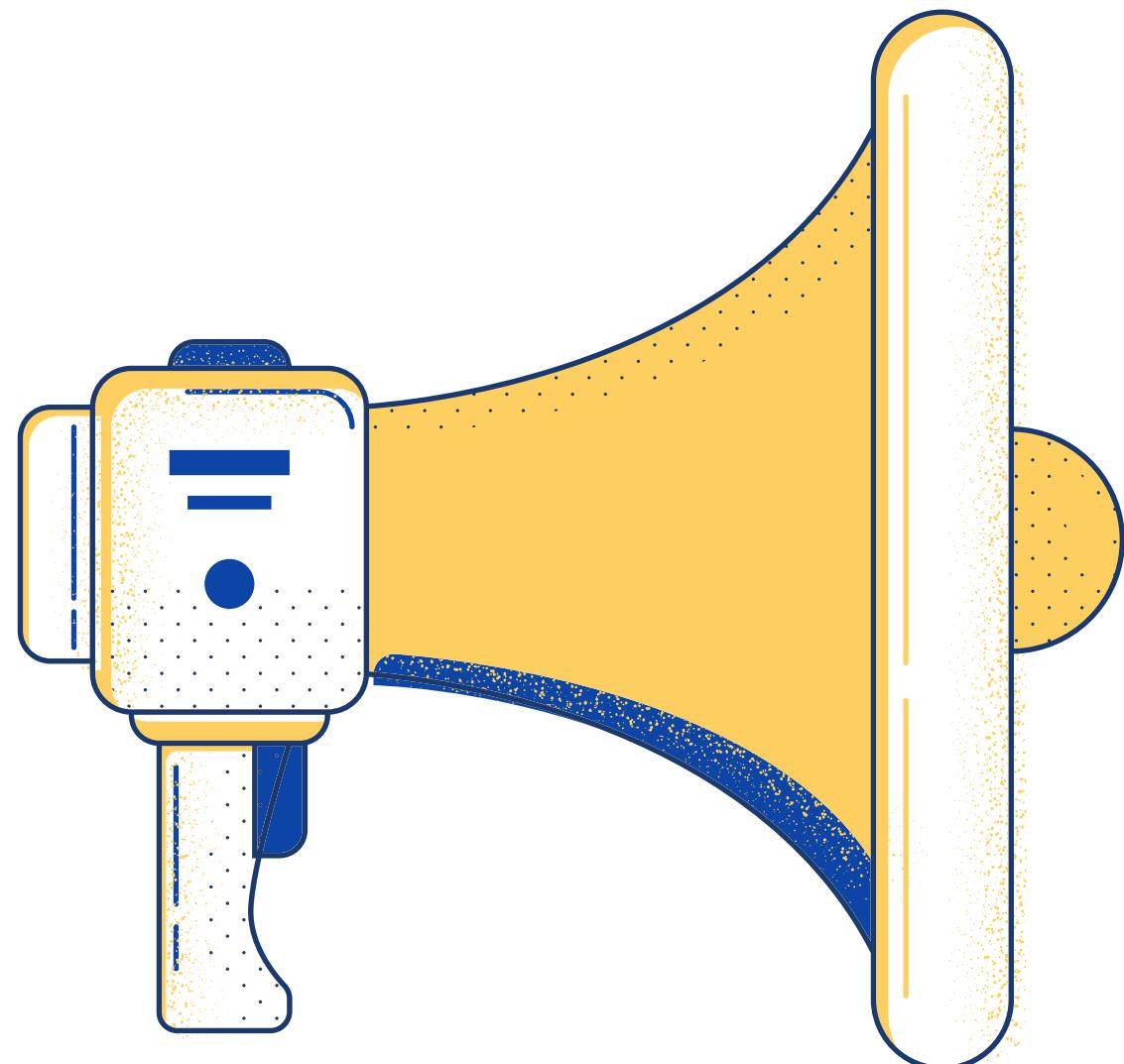
---

- Ride-sharing apps have integrated structured tipping systems that prompt passengers
- Traditional taxi tipping is less standardized with inconsistent behavior patterns
- Lack of structured data collection makes it difficult to identify tipping patterns in taxis
- NYC TLC needs deeper understanding of taxi tipping behavior to improve service quality



# PROBLEM STATEMENT

---



- Lack of clarity regarding factors influencing tip amounts in NYC taxis
- Need to examine relationships between trip characteristics and tipping behavior
- Understanding these relationships will help NYC TLC develop effective regulations
- Findings can inform driver training to improve customer service and increase tips

# SCOPE OF WORK

---



- Data collection from NYC TLC trip dataset, Taxi Zones CSV, and GeoJSON files
- Data wrangling to clean and prepare dataset for analysis
- Exploratory Data Analysis to identify patterns in tipping behavior
- Analysis of tipping patterns by time, payment method, location, and trip characteristics

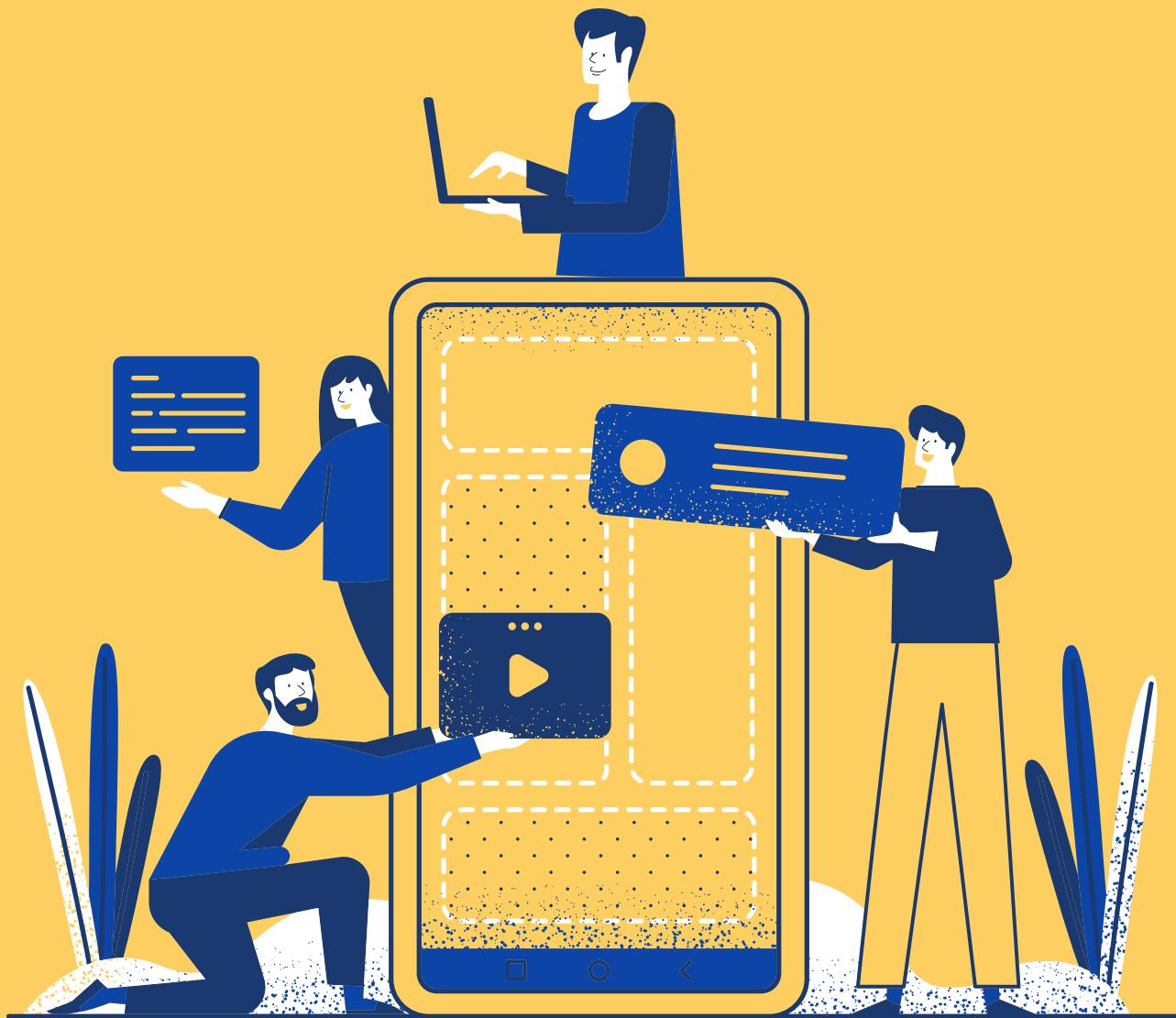
# DATA UNDERSTANDING



- Dataset contains taxi trip information including pickup/dropoff times, locations, fares
- Key fields include vendor ID, pickup/dropoff datetime, location IDs, passenger count
- Data includes fare amount, tip amount, and various surcharges
- Dataset covers January 2023 with over 68,000 initial records

# EDA: KEY FINDINGS

---



- Tipping patterns vary significantly by day of week and hour of day
- Credit card payments receive substantially higher tips than cash payments
- Pickup and dropoff boroughs influence tipping behavior
- Weak positive correlation between trip distance/duration and tip amounts

# NYC TLC Taxi Trip Data Analysis: Tipping Behavior (January 2023)

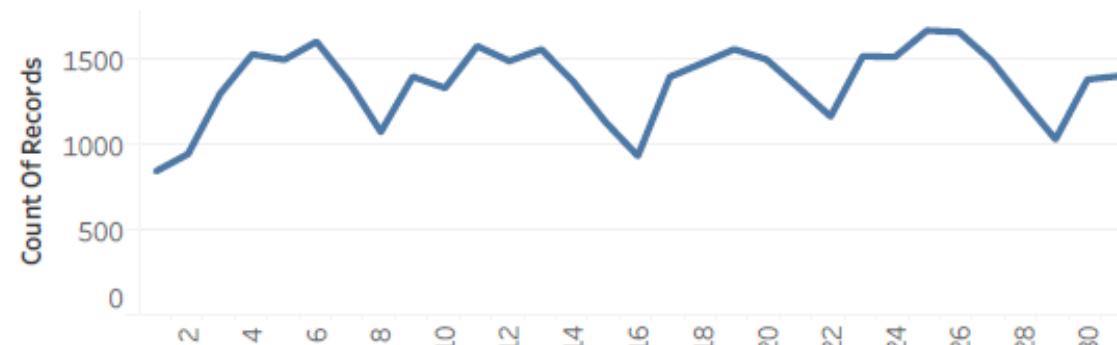


Borough Parameter  
Pickup

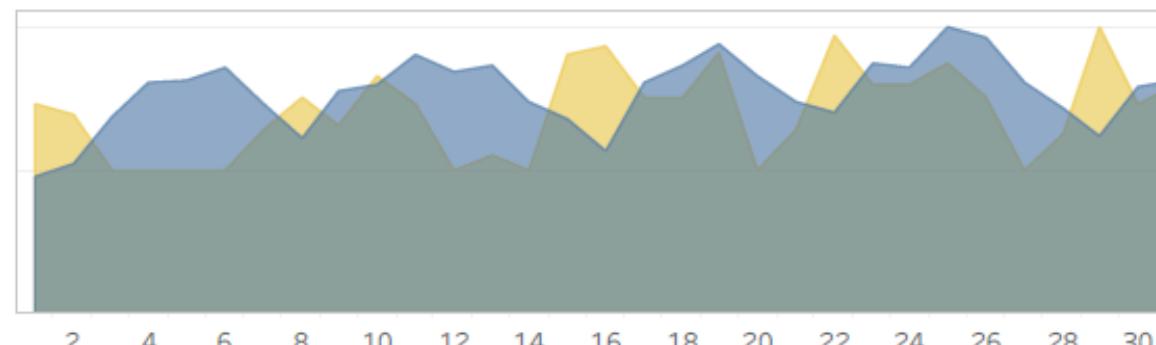
Boroughs  
Multiple values

Measure Names  
Median Tip Amount  
Sum Of Tip Amount

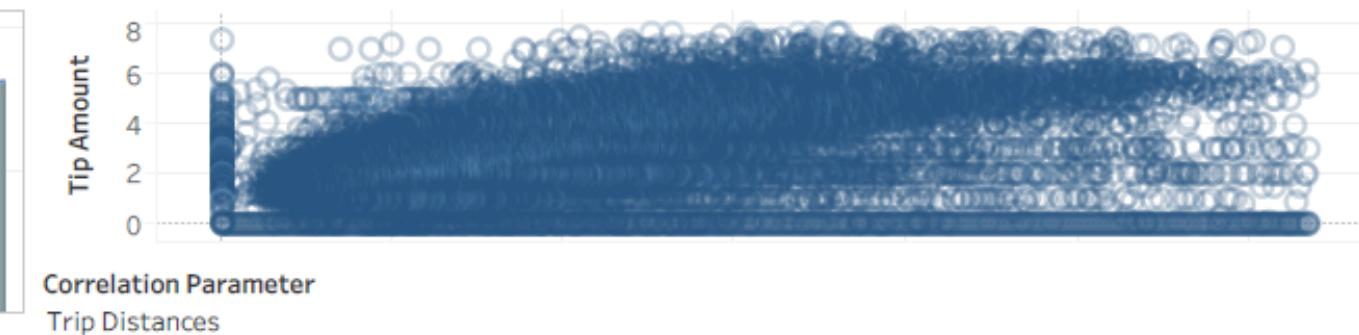
Daily Record Counts



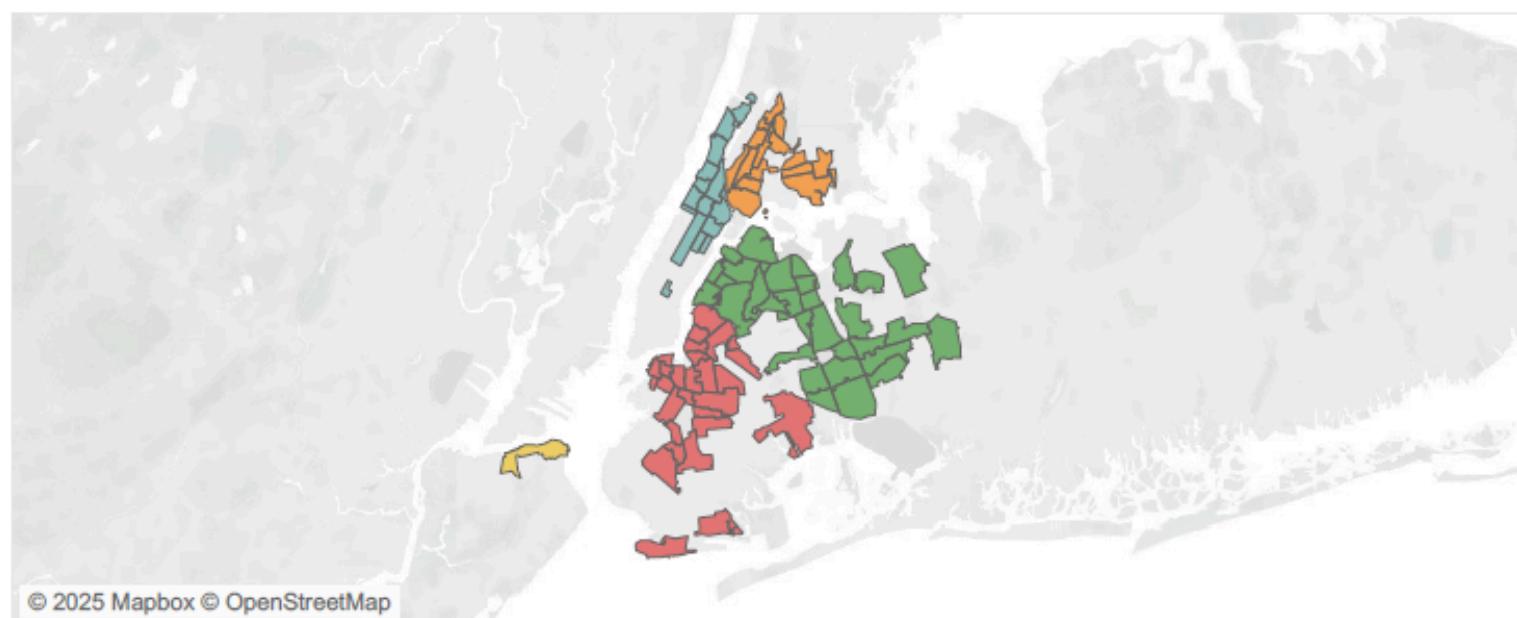
Daily Tip Amount Distributions



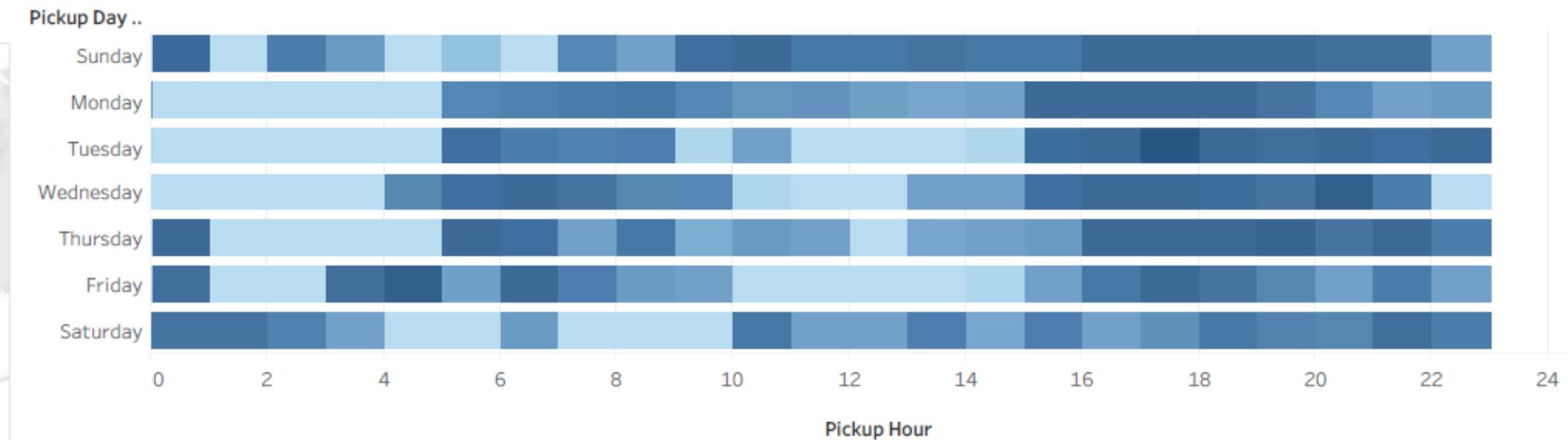
Trip Distances vs Tip Amount



Tip Amount Distributions by Pickup - Bronx, Brooklyn, Manhattan and 2 more

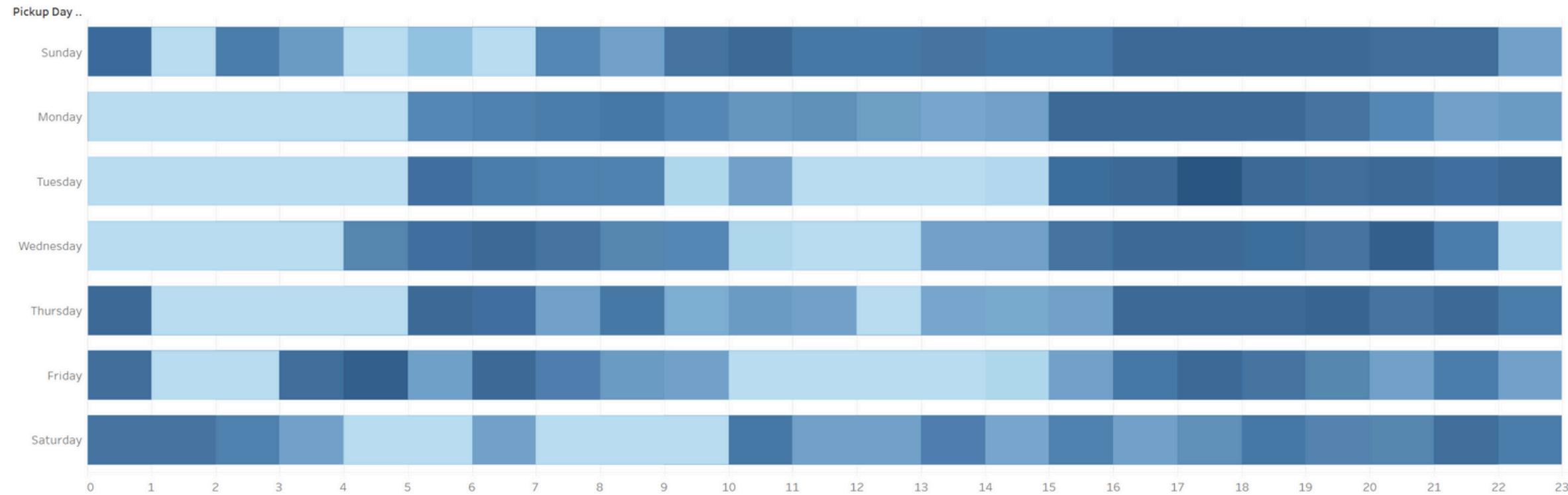


Median of Tip Amounts by Hours And Day Of Week

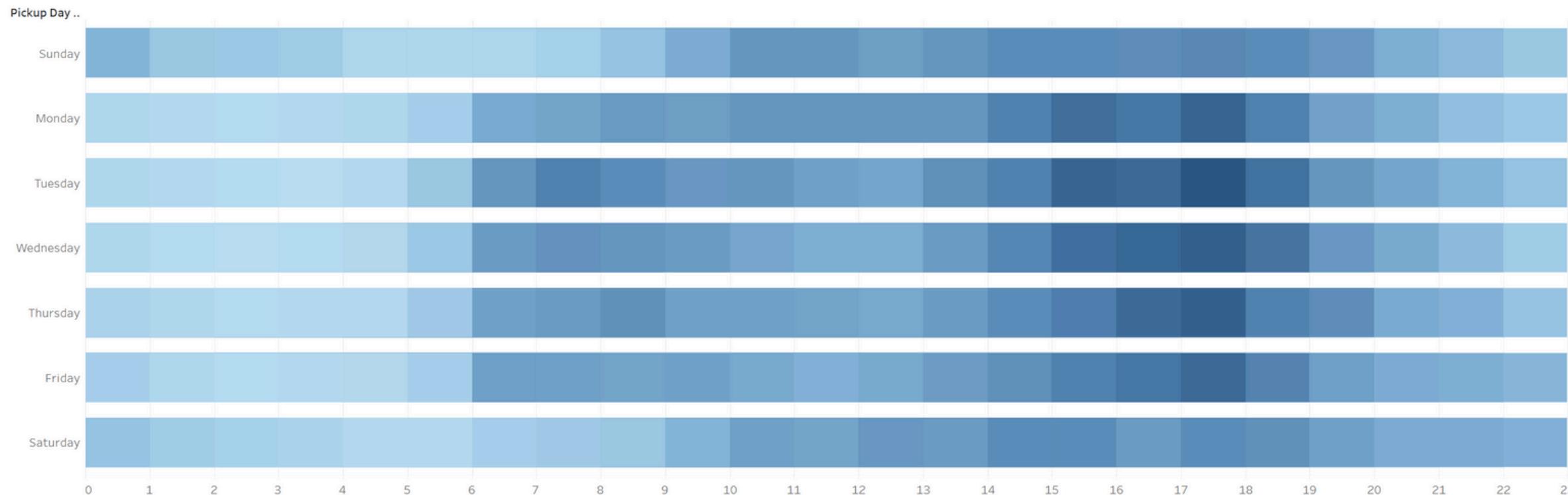


Tip Param.. Median|of Tip Amounts

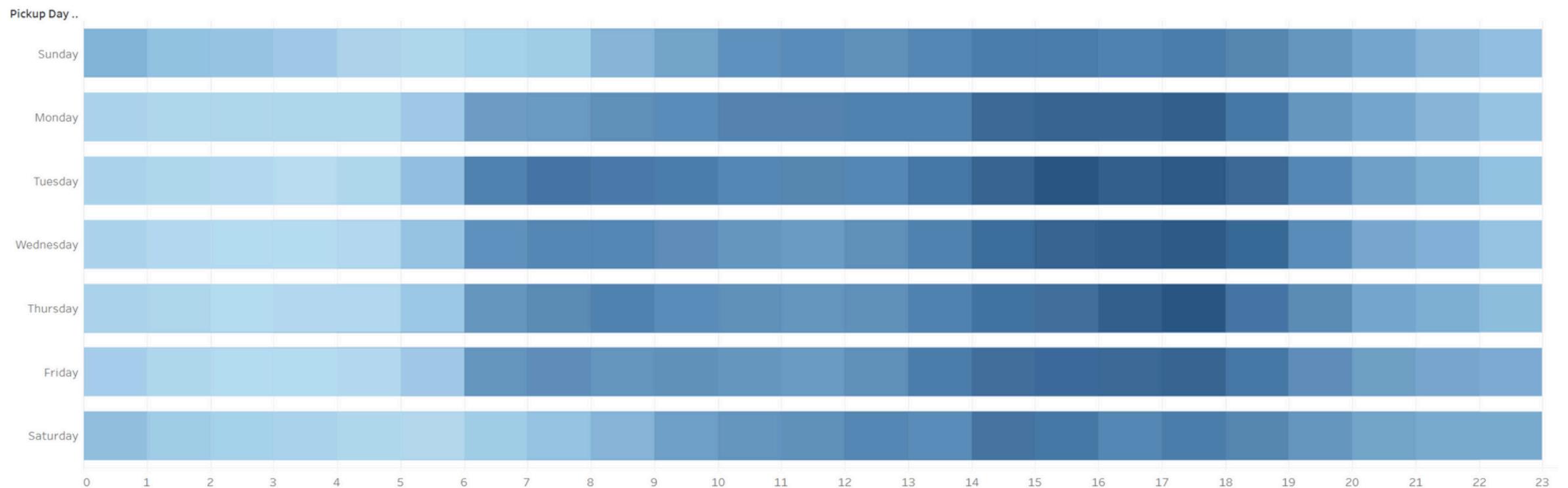
## Median of Tip Amounts by Hours And Day Of Week



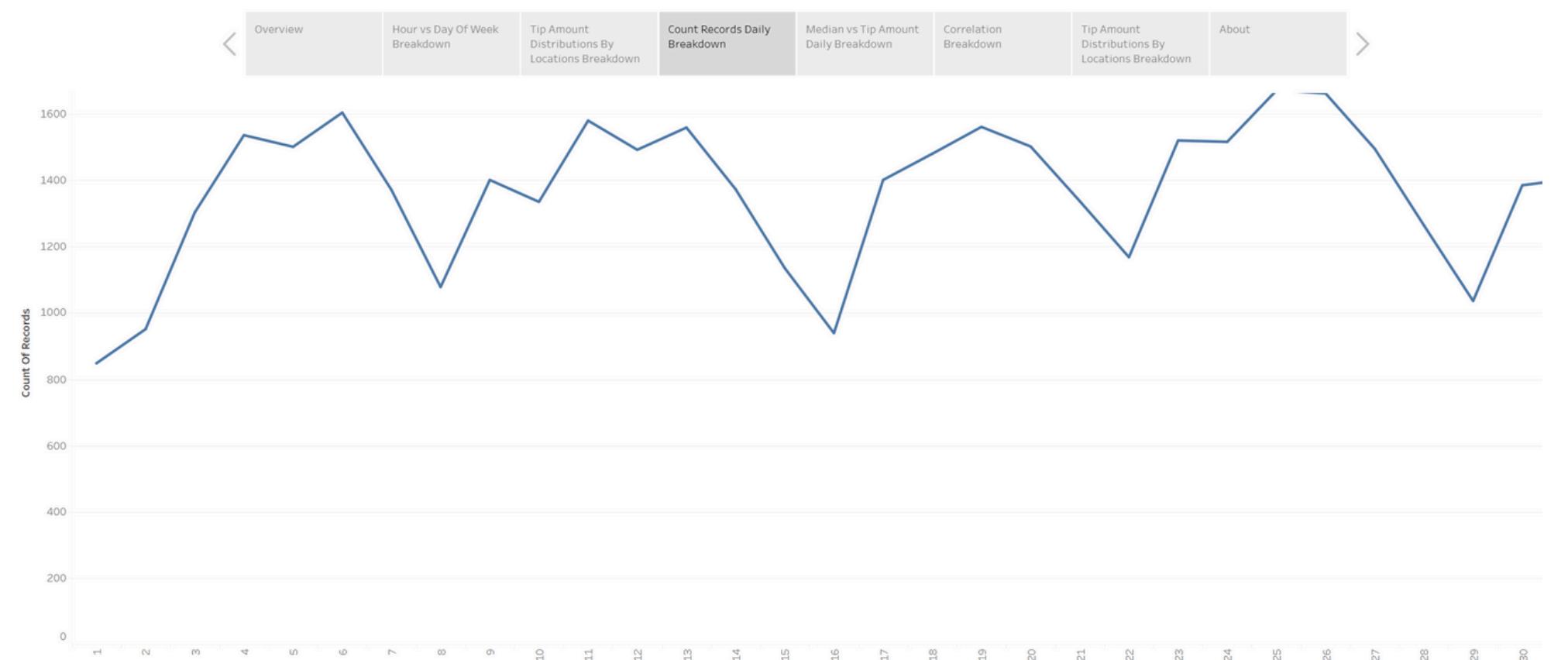
## Sum of Tip Amounts by Hours And Day Of Week



### Count of Records by Hours And Day Of Week

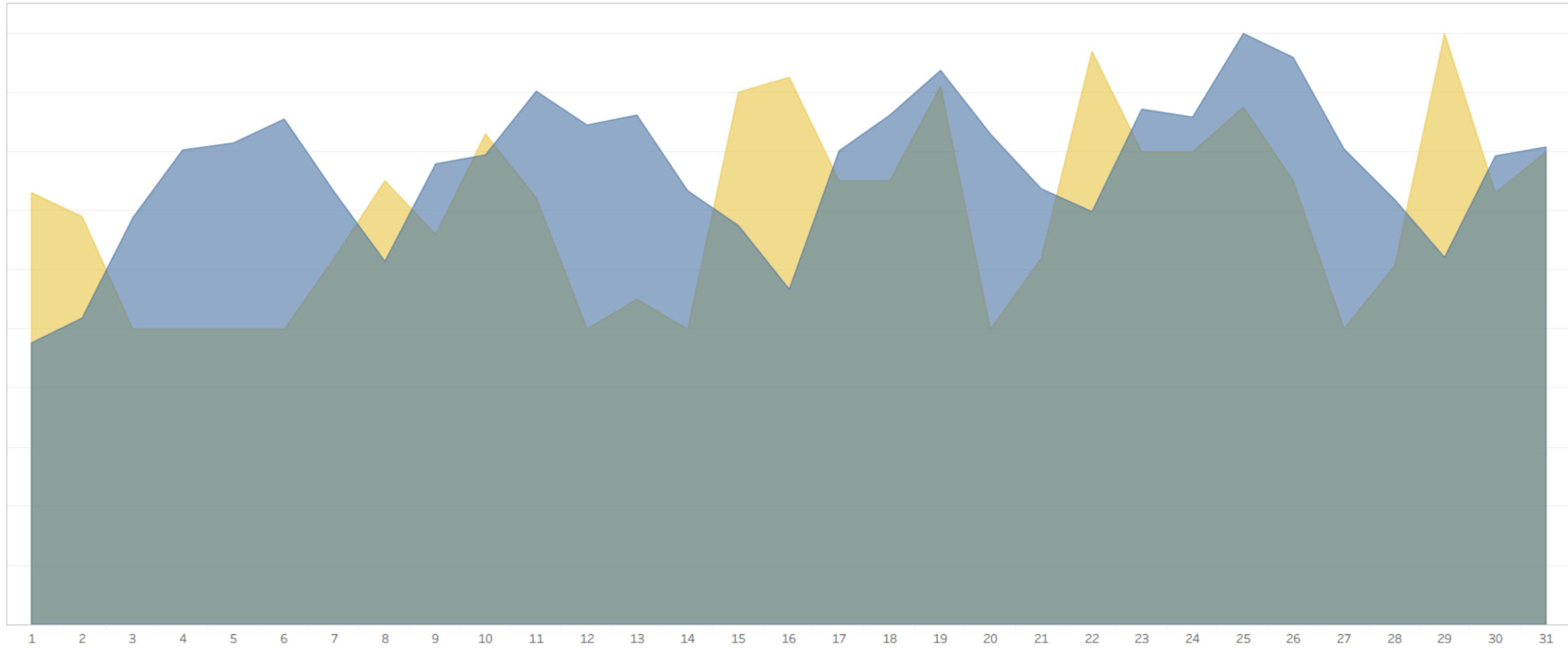


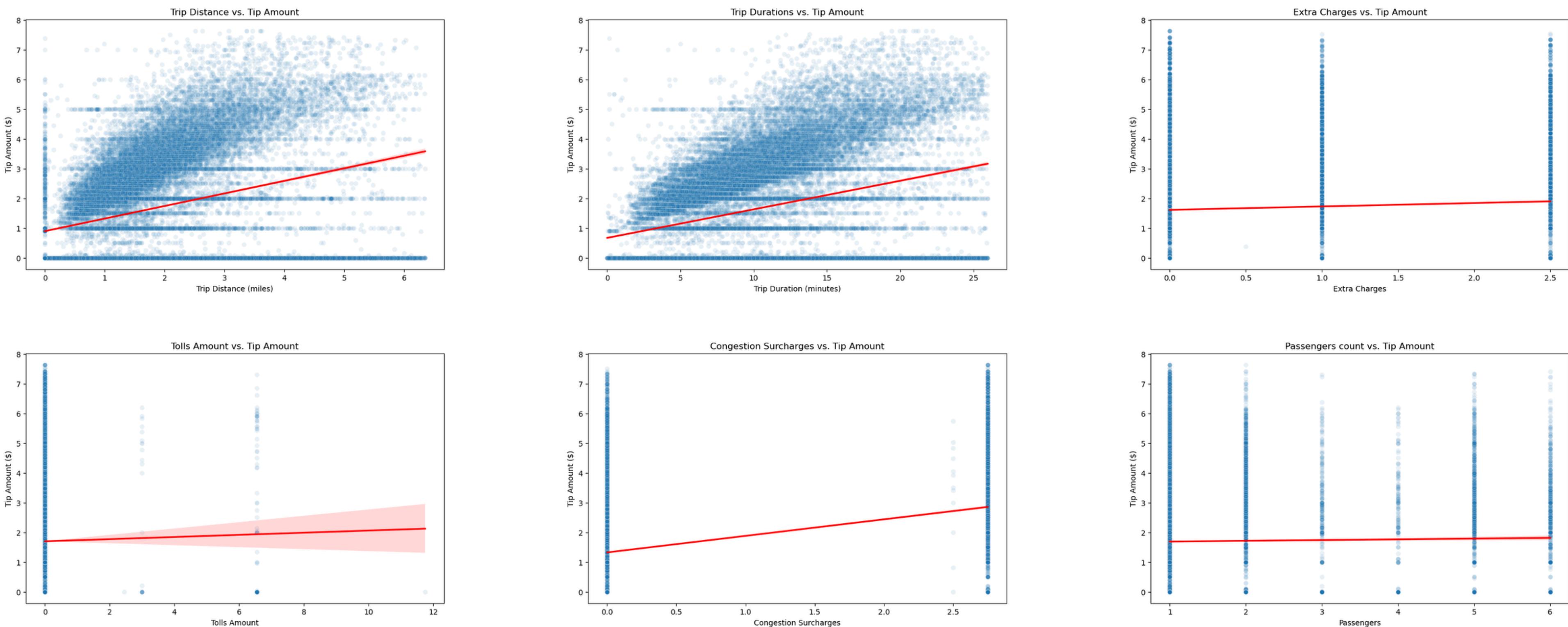
### NYC TLC Taxi Trip Data Analysis: Tipping Behavior (January 2023)



## NYC TLC Taxi Trip Data Analysis: Tipping Behavior (January 2023)

Overview	Hour vs Day Of Week Breakdown	Tip Amount Distributions By Loca..	Count Records Daily Breakdown	Median vs Tip Amount Daily Breakdown	Correlation Breakdown	Tip Amount Distributions By Loca..	About
----------	-------------------------------	------------------------------------	-------------------------------	--------------------------------------	-----------------------	------------------------------------	-------





# CONCLUSIONS



- 
- Payment method is the strongest predictor of tipping behavior
  - Temporal and geographic factors significantly influence tipping patterns
  - Recommendations include promoting cashless payments and focusing on high-tip zones
  - Driver training should emphasize service quality during peak tipping periods



Thank You  
Any Questions ?