

# PROJECT : COMMUNICATE WITH YOUR DATA

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# INTRODUCTION

## Dataset overview

- The dataset comes from the Ford GoBike System (February 2019).
- It contains bike-sharing trip data, including:
  - Trip Duration (in seconds)
  - Start & End Stations
  - User Type (Subscriber or Customer)
  - Rider Age & Gender
  - Bike ID & Rental Details

# PURPOSE OF ANALYSIS

1.

- Understand user behavior patterns in bike-sharing.

2.

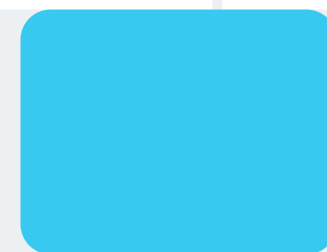
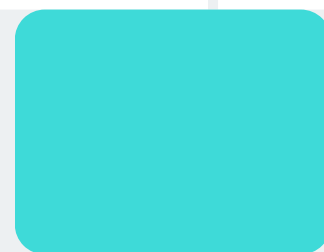
- Explore ride duration variations across age groups.

3.

- Identify correlations between user demographics and ride characteristics.

4.

- Present data-driven insights to optimize the bike-sharing experience.



# **KEY QUESTIONS & OBJECTIVES (WHAT YOU AIMED TO FIND)**

- **Key Questions**

- **How does ride duration distribution change across different age brackets?**
- **What is the most rented month for bike usage?**
- **How do ride durations vary by user type (Subscriber vs. Customer)?**
- **What are the most popular hours for bike rentals?**
- **How is gender distribution represented among riders?**

- **Purpose of Analysis**

- **Understanding user behavior and ride patterns**
- **Identifying key trends in bike rentals**

# DATA CLEANING & PREPROCESSING

- **Steps taken:**
  - **Handling :**
    - **Missing values**
    - **Outliers,**
- **Data formatting**



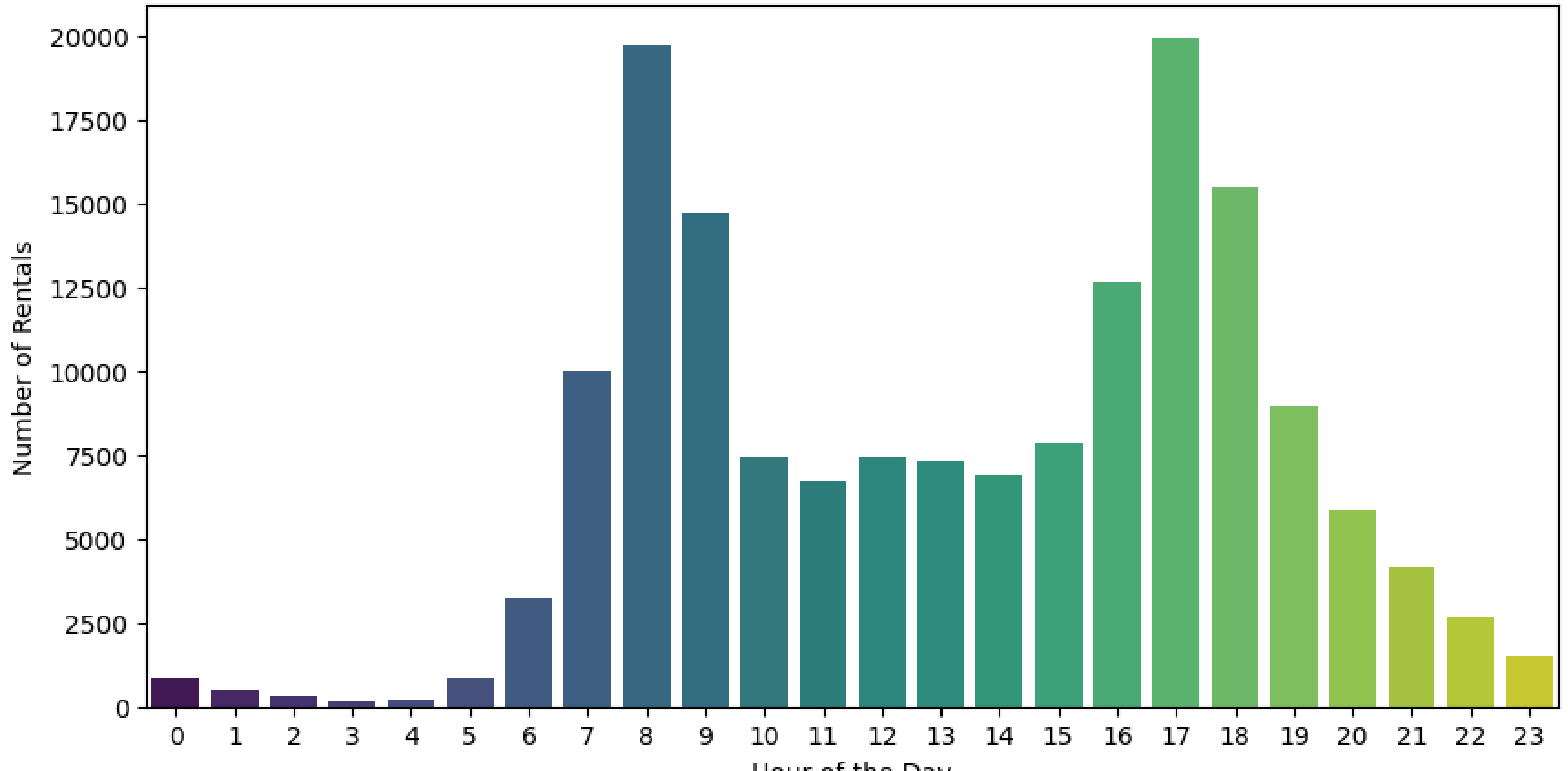
# EXPLORATORY DATA ANALYSIS (EDA) OVERVIEW

UNIVARIATE, BIVARIATE & MULTIVARIATE ANALYSES



**\*\* WHAT IS THE MOST POPULAR HOUR IN BIKE RENTAL? \*\***  
**ANSWER : 5 PM**

Most Popular Hours for Bike Rentals

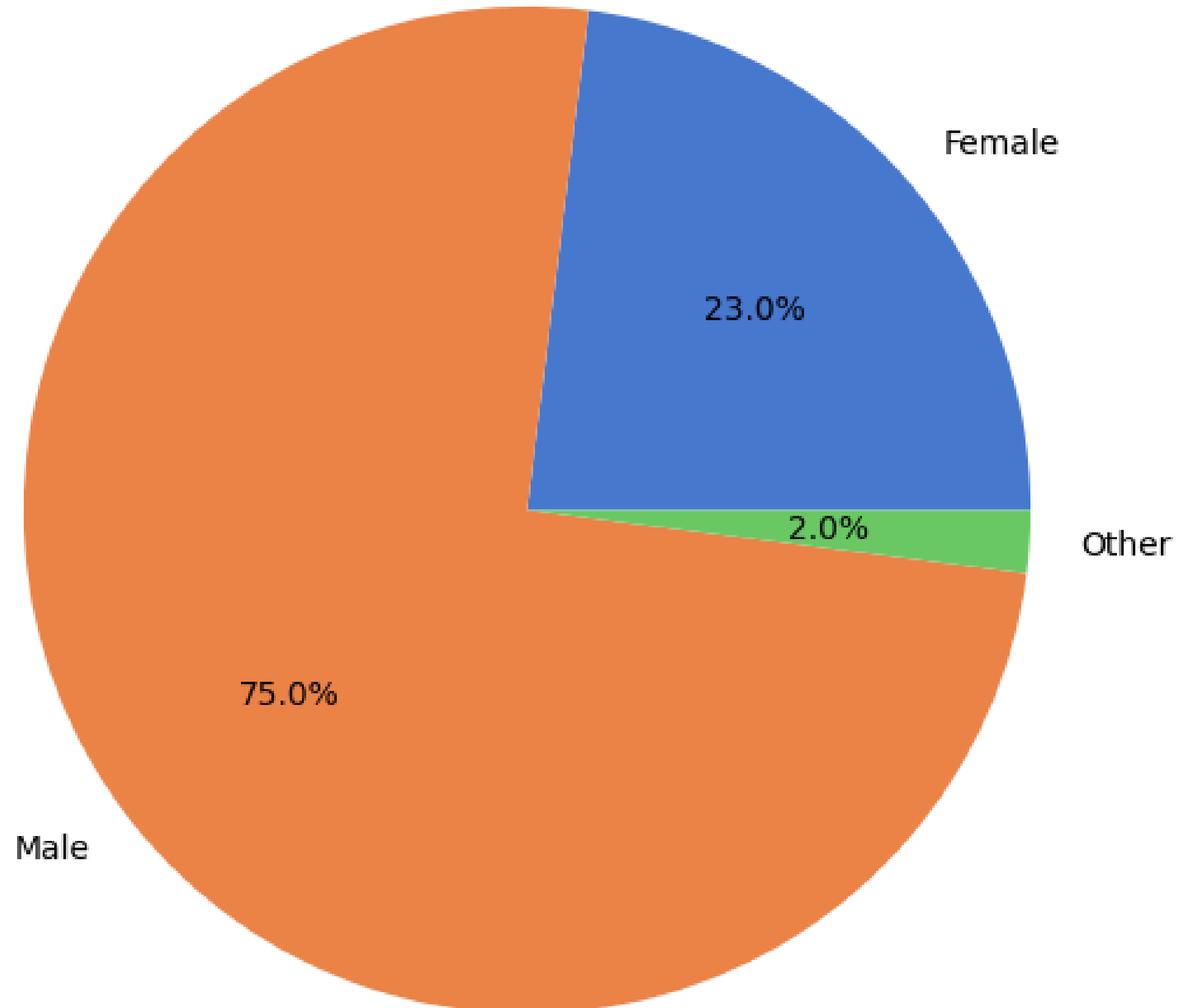


**INCREASE THE NUMBER OF BIKES AT 5 PM**

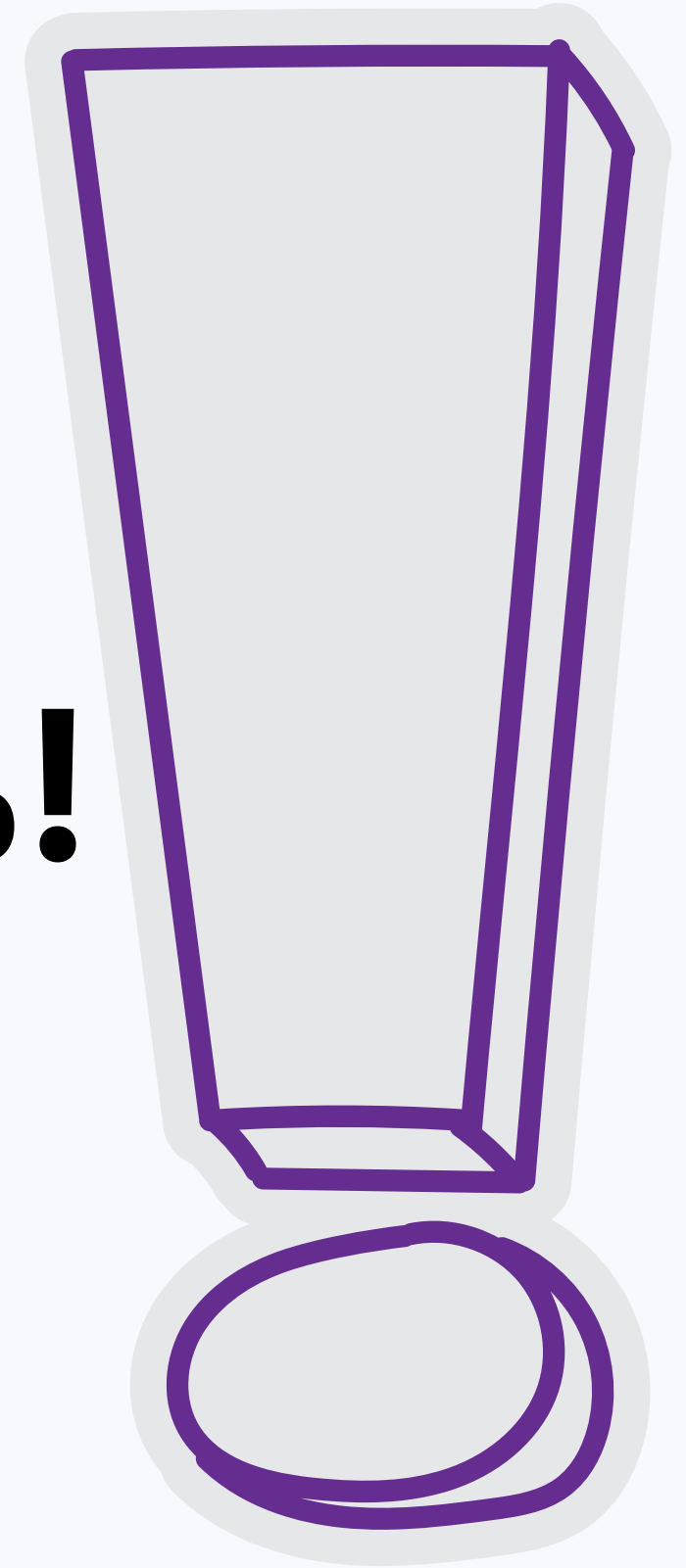


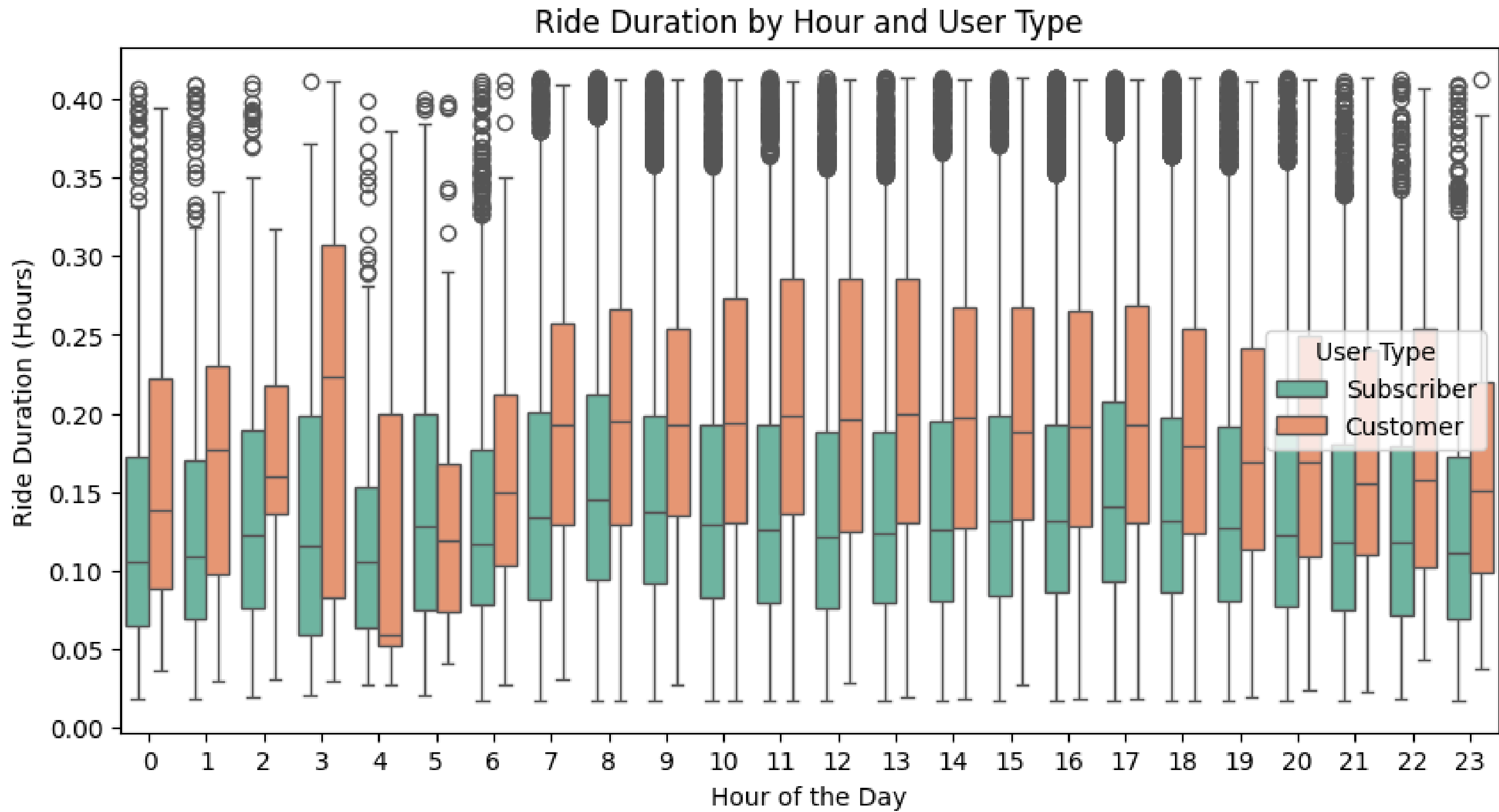
# WHAT GENDER WE SHOULD TARGET MORE ?

Gender Distribution of Bike Members



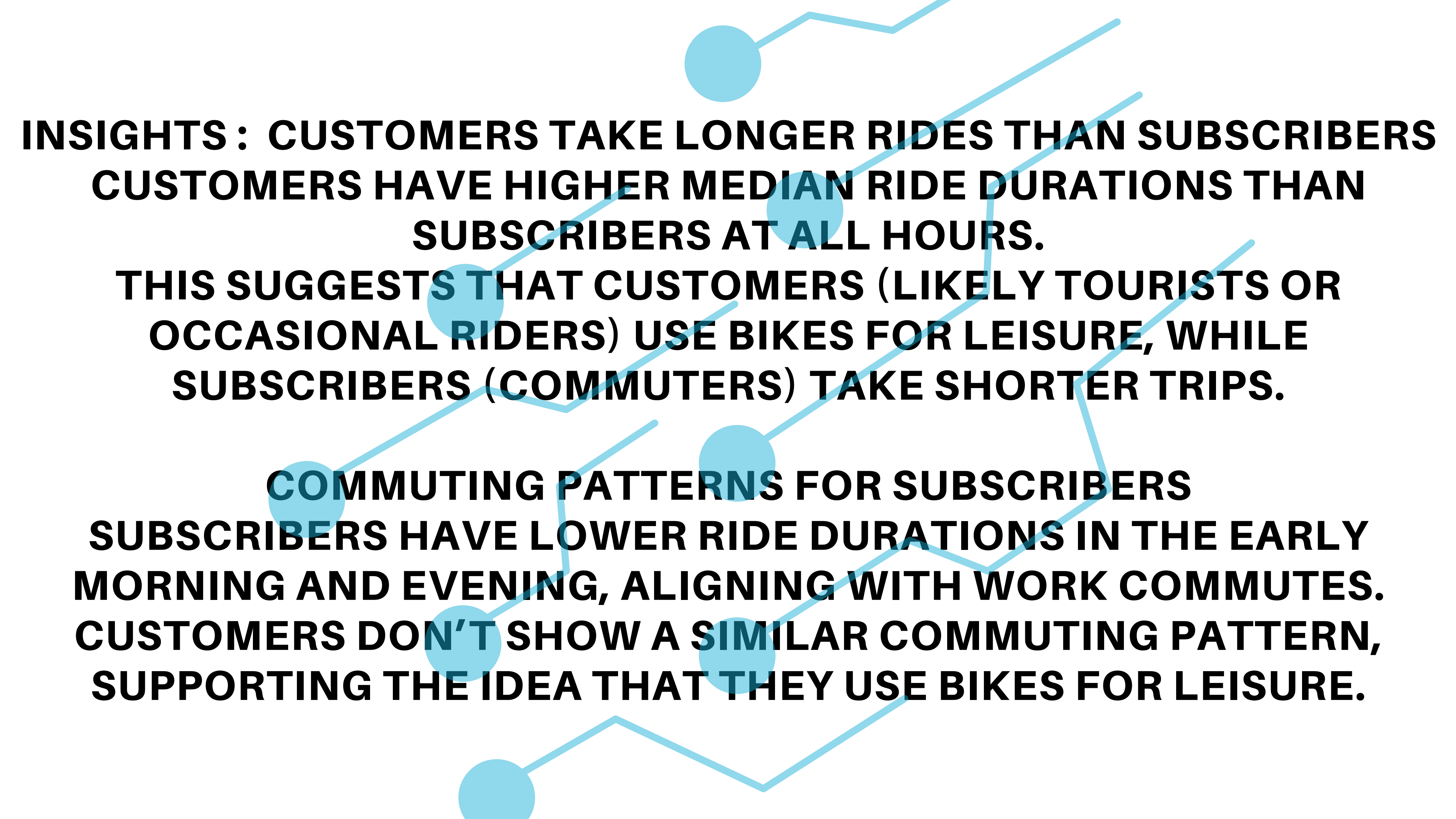
**MALES RIDE BIKES BY 75%!**





Multivariate Analysis

**\*\*How the type of the user affects the ride duration?\*\***



**INSIGHTS : CUSTOMERS TAKE LONGER RIDES THAN SUBSCRIBERS  
CUSTOMERS HAVE HIGHER MEDIAN RIDE DURATIONS THAN  
SUBSCRIBERS AT ALL HOURS.**

**THIS SUGGESTS THAT CUSTOMERS (LIKELY TOURISTS OR  
OCCASIONAL RIDERS) USE BIKES FOR LEISURE, WHILE  
SUBSCRIBERS (COMMUTERS) TAKE SHORTER TRIPS.**

**COMMUTING PATTERNS FOR SUBSCRIBERS  
SUBSCRIBERS HAVE LOWER RIDE DURATIONS IN THE EARLY  
MORNING AND EVENING, ALIGNING WITH WORK COMMUTES.  
CUSTOMERS DON'T SHOW A SIMILAR COMMUTING PATTERN,  
SUPPORTING THE IDEA THAT THEY USE BIKES FOR LEISURE.**

# Key Findings & Insights

- Peak usage times and age group trends
  - “Peak hour is 5 PM with 17500+ rentals”).
- Subscriber vs. Customer ride behavior
  - That is clear in the day parts
- Gender-based differences in ride patterns
  - Males ride bikes by 75%!

# Challenges & Limitations

- **Outliers in ride duration**
- **Data gaps & missing values**



# CONCLUSION & RECOMMENDATIONS

- **Key takeaways from the data analysis**
  - **Suggestions for improving service**
    - **(adjusting bike availability in high-demand areas,\**
    - **promoting usage during off-peak hours)**

