

Case Study

How does a bike-share
navigate speedy success?



Hello!

I am Saloni Pandya



MSc in Statistics
Aspiring Data Analyst

- **Github:** <http://github.com/SaloniPandya>
- **LinkedIn:** <http://linkedin.com/in/salonip16>
- **Email:** pandyasaloni01@gmail.com



About Cyclistic

In 2016, Cyclistic launched a successful bike-share program featuring over 5,800 bicycles and 600 docking stations, forming a network of 692 stations across Chicago.

The bikes can be unlocked from one station and returned to any other station in the system anytime



Business Task

Understanding Differences in Bike Usage Between Annual Members and Casual Riders at Cyclistic

The business task is to understand how annual members and casual riders utilize Cyclistic bikes differently in order to design a marketing strategy aimed at converting casual riders into annual members.

Data Source

Data Source: Motivate International Inc. (publicly available)

Time Period: Previous 12 months (From May'23 to Apr'24)

 202304-divvy-tripdata.zip	May 5th 2023, 01:13:25 am	15.40 MB	ZIP file
 202305-divvy-tripdata.zip	Jun 9th 2023, 03:47:13 am	23.44 MB	ZIP file
 202306-divvy-tripdata.zip	Jul 14th 2023, 02:52:44 am	25.66 MB	ZIP file
 202307-divvy-tripdata.zip	Aug 14th 2023, 05:58:28 pm	28.54 MB	ZIP file
 202308-divvy-tripdata.zip	Oct 12th 2023, 11:05:18 am	28.65 MB	ZIP file
 202309-divvy-tripdata.zip	Oct 12th 2023, 11:05:18 am	24.89 MB	ZIP file
 202310-divvy-tripdata.zip	Nov 13th 2023, 10:08:10 pm	19.15 MB	ZIP file
 202311-divvy-tripdata.zip	Dec 5th 2023, 11:58:19 pm	13.17 MB	ZIP file
 202312-divvy-tripdata.zip	Jan 5th 2024, 01:18:23 am	8.42 MB	ZIP file
 202401-divvy-tripdata.zip	Feb 5th 2024, 08:51:23 pm	5.45 MB	ZIP file
 202402-divvy-tripdata.zip	Mar 4th 2024, 08:07:52 pm	8.46 MB	ZIP file
 202403-divvy-tripdata.zip	Apr 2nd 2024, 12:19:19 am	10.96 MB	ZIP file

Tool Used: Excel

Before Data Manipulation

Columns [13]

ride_id, rideable_type, started_at, ended_at, start_station_name, start_station_id, end_station_name, end_station_id, start_lat, start_lng, end_lat, end_lng, member_casual

Total Rows: 63,55,004 or 6.3M

Variables

ride_id: Unique identifier for each ride.

rideable_type: Type of bike used for the ride.

started_at: Timestamp for when the ride started.

ended_at: Timestamp for when the ride ended.

start hour: Hour of the day when the ride started

end hour: Hour of the day when the ride

start date: Date when the ride started

end date: Date when the ride ended.

ride len: Duration of the ride in minutes.

member casual: Rider Type (mem

day of week: Day of the week.

After Data Manipulation

Columns [12]

ride_id, rideable_type, started_at, ended_at, member_casual, started_date, ended_date, start_hour, end_hour, ride_length, day_of_week, month

Total Rows: 57,50,177 or 5.7M

New Columns: start_date, start_hour, end_date, end_hour, day_of_week, ride_len and month





Analysis of Cyclistic Bike Ride Data

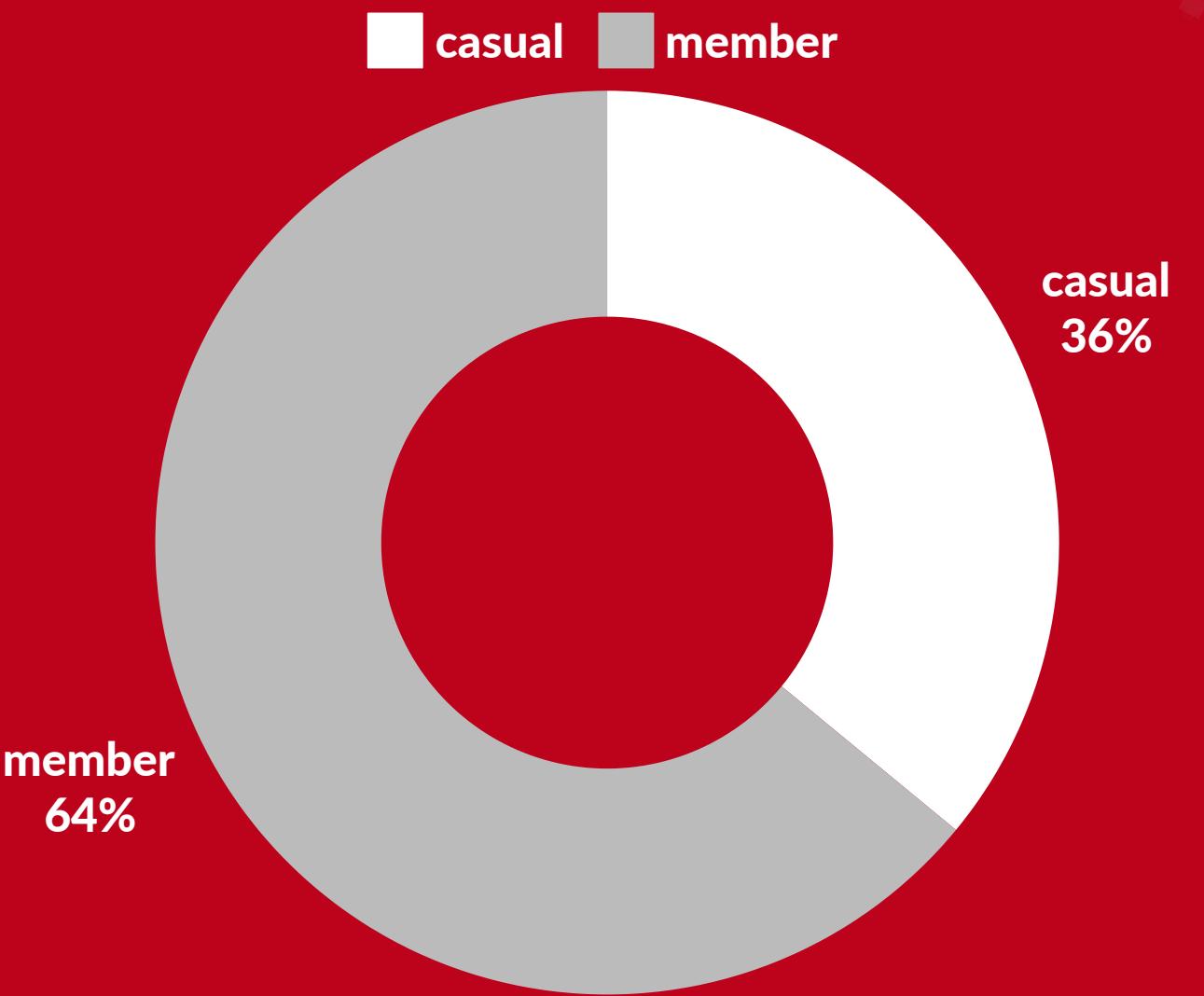
Insights into Casual and Member Riders

Rider Type Distribution

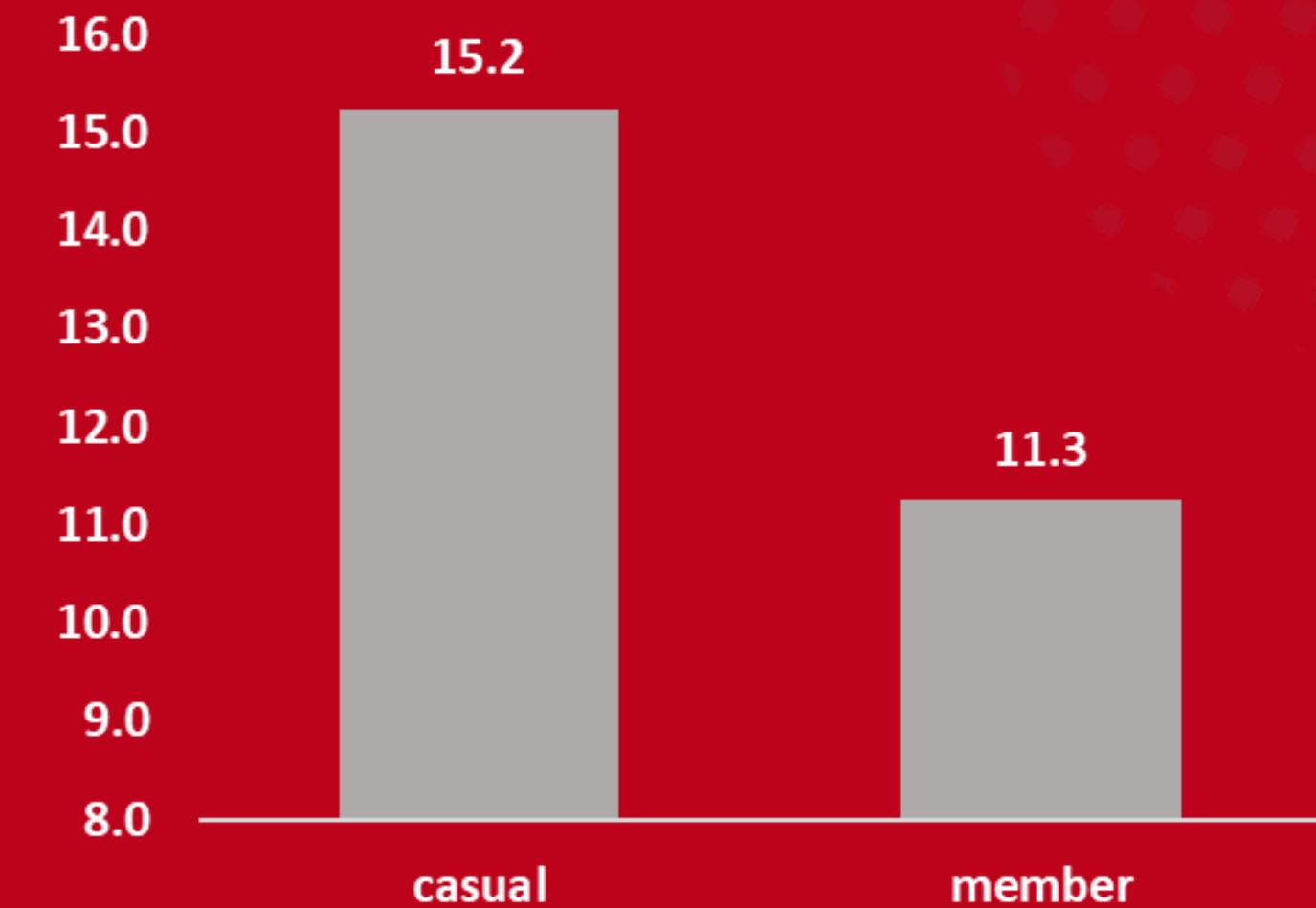
Casual vs. Member Riders

Casual riders account for 36% of total rides, while members contribute to around 64% of the total rides.

This could suggest that members have a higher level of satisfaction or dependency on the service compared to casual riders.



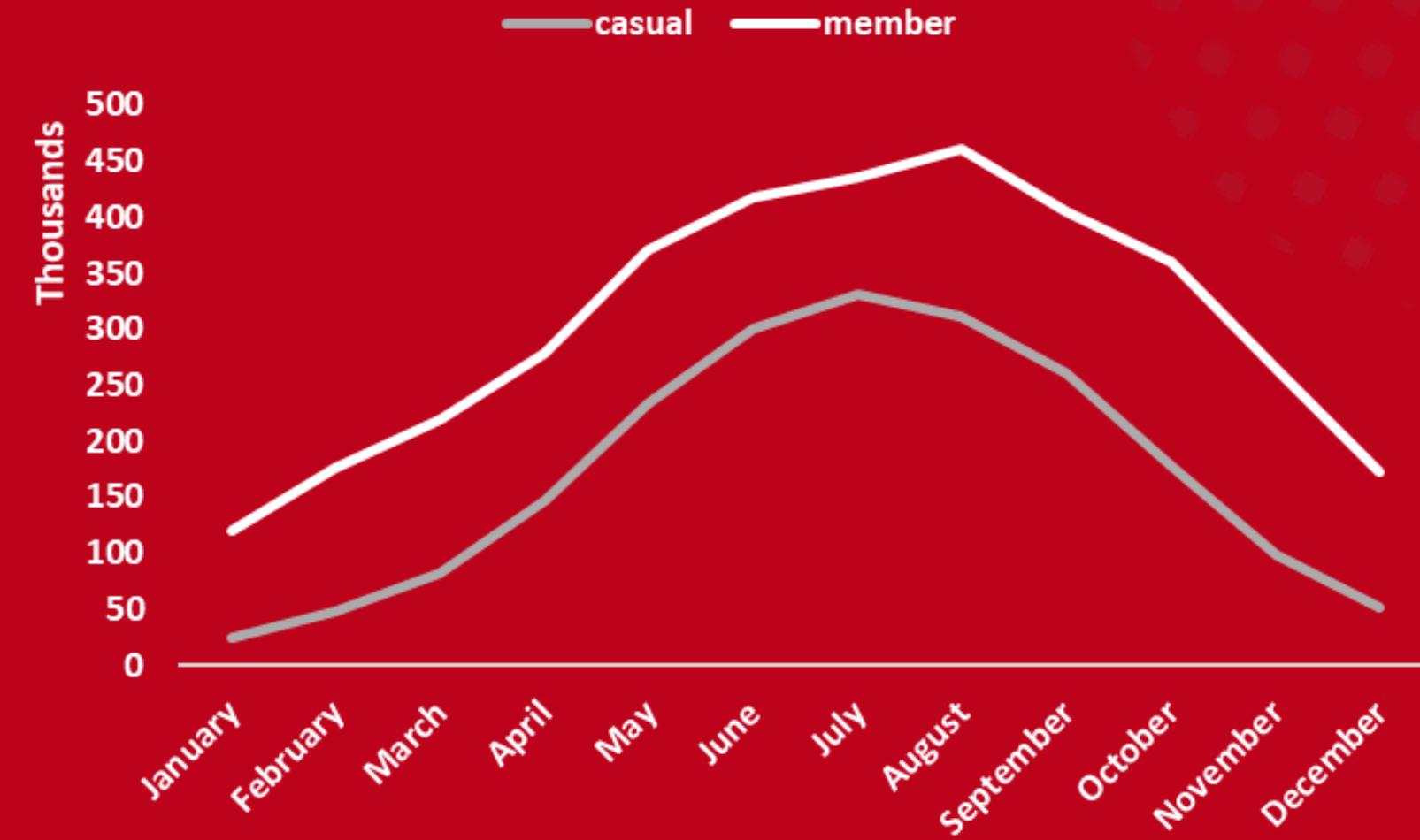
Average Ride Length



Casual riders have a higher average ride length of approximately 15.32 minutes compared to member riders, whose average ride length is approximately 11.29 minutes.

This suggests that casual riders may use the bikes for longer durations, possibly for leisurely rides or exploring the city, while member riders may use them for more efficient, shorter trips.

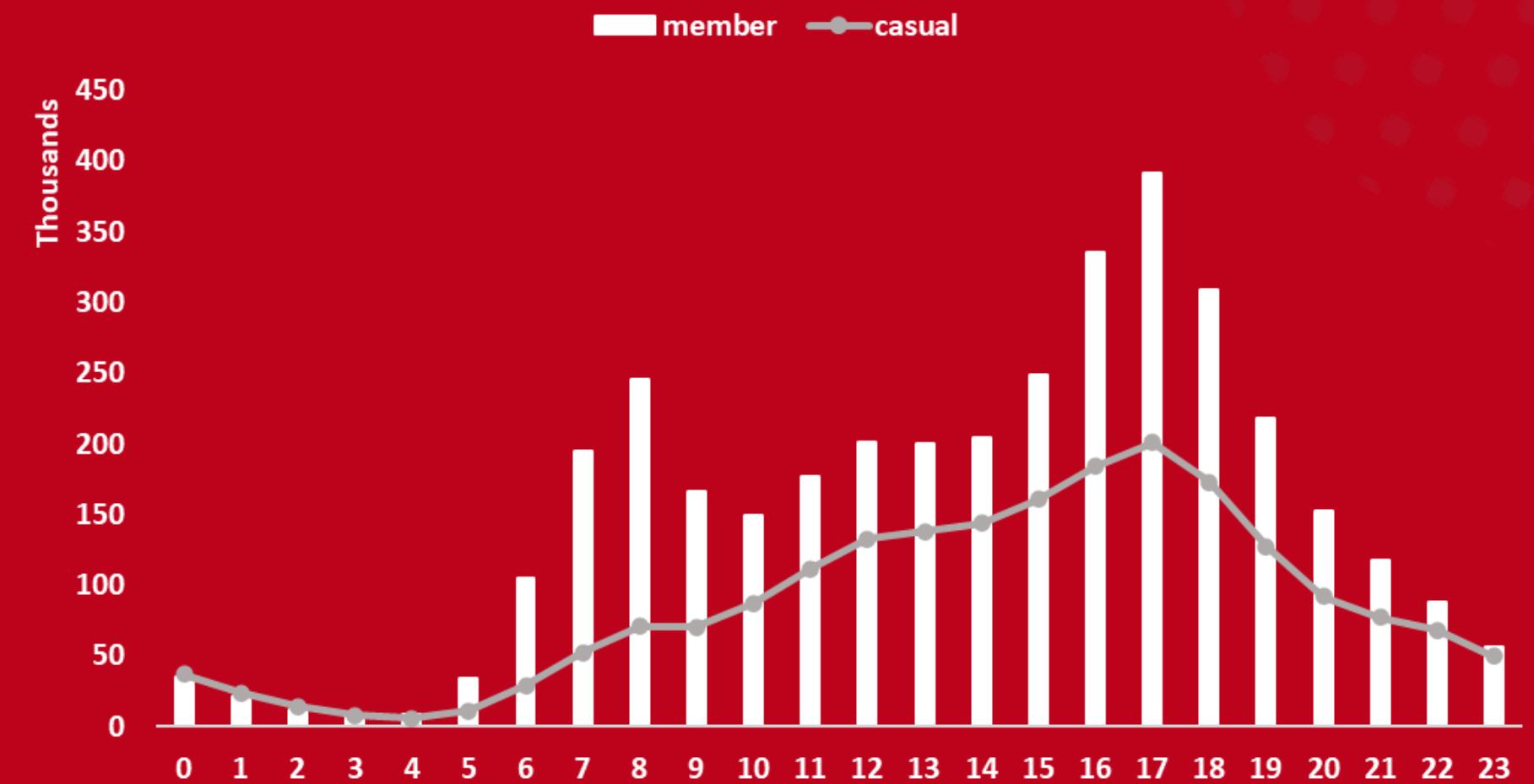
Monthly Ride Count



Summer months (June to August) experience the highest ride counts for both casual and member riders in Chicago.

It suggests that the warm weather and vacation season during summer time contribute to increased bike usage among both casual and member riders.

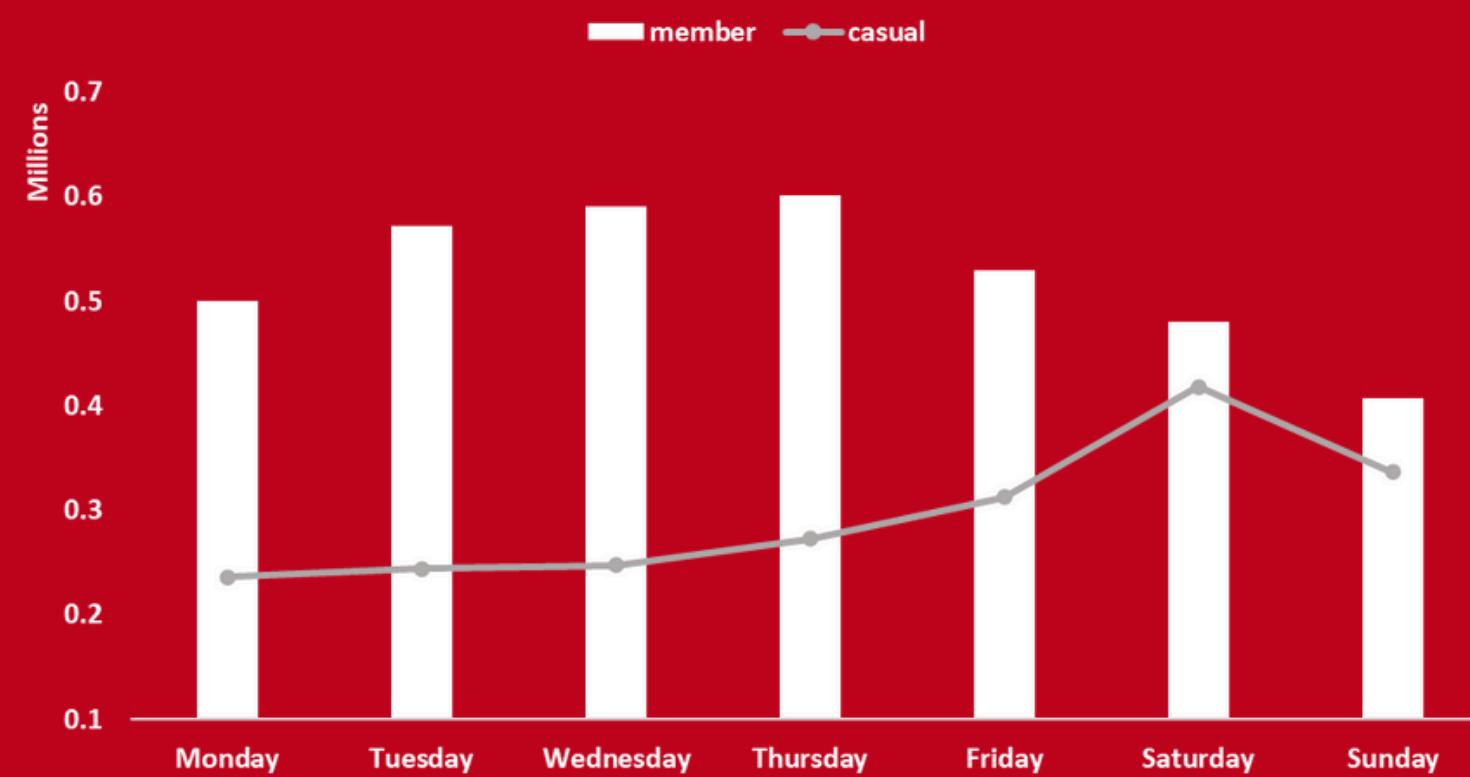
Hourly Ride Count



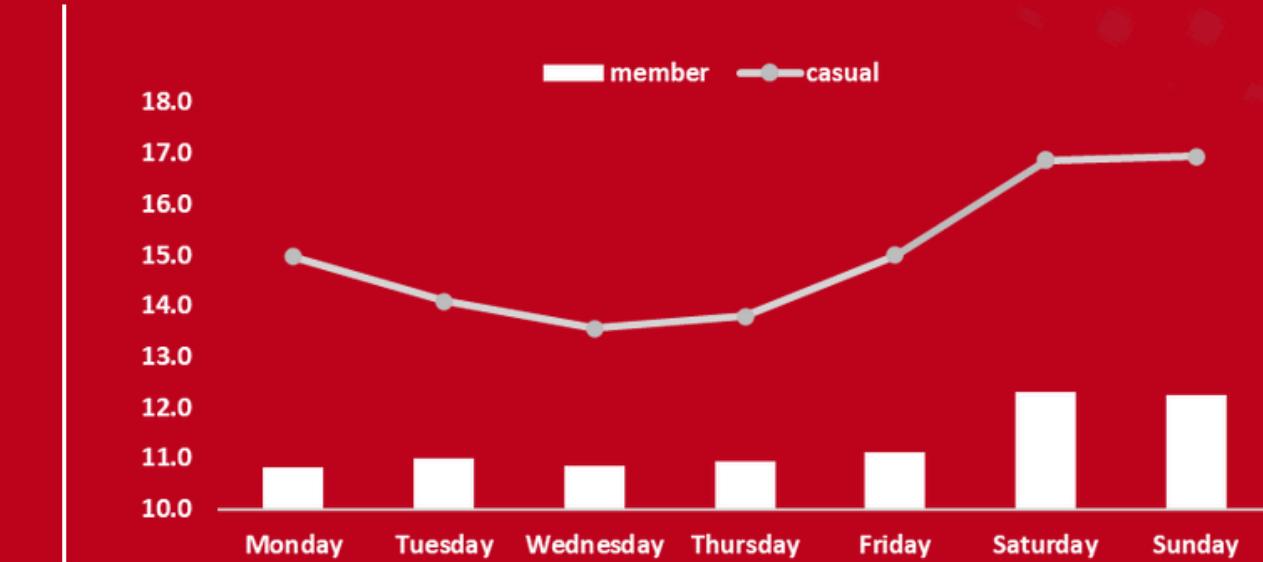
Both casual and member riders exhibit increased ride activity during the morning rush hours (7-9 AM) and evening peak hours (4-6 PM), indicating strong demand for commuting services.

Casual riders outnumbered member riders during the late-night hours, particularly between 12 AM and 2 AM, indicating a potential preference for late-night trips among casual riders.

Weekly Ride Distribution



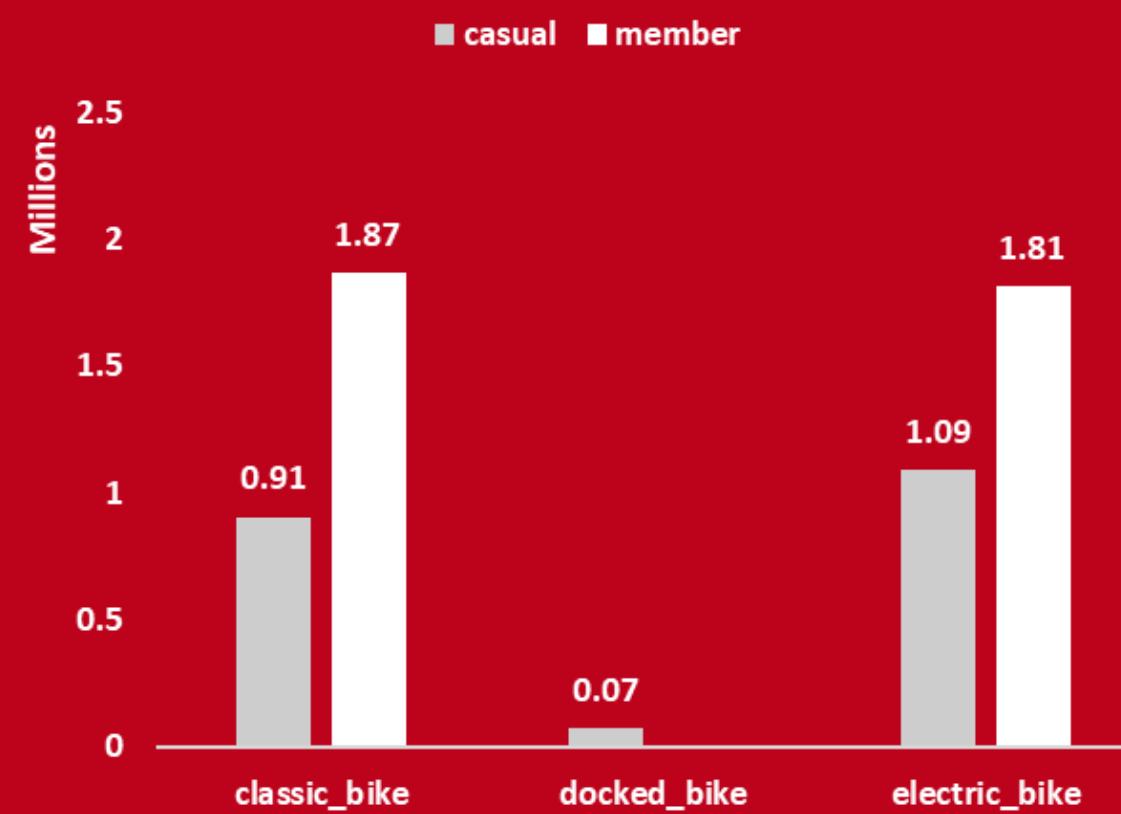
Average Ride Length by Day



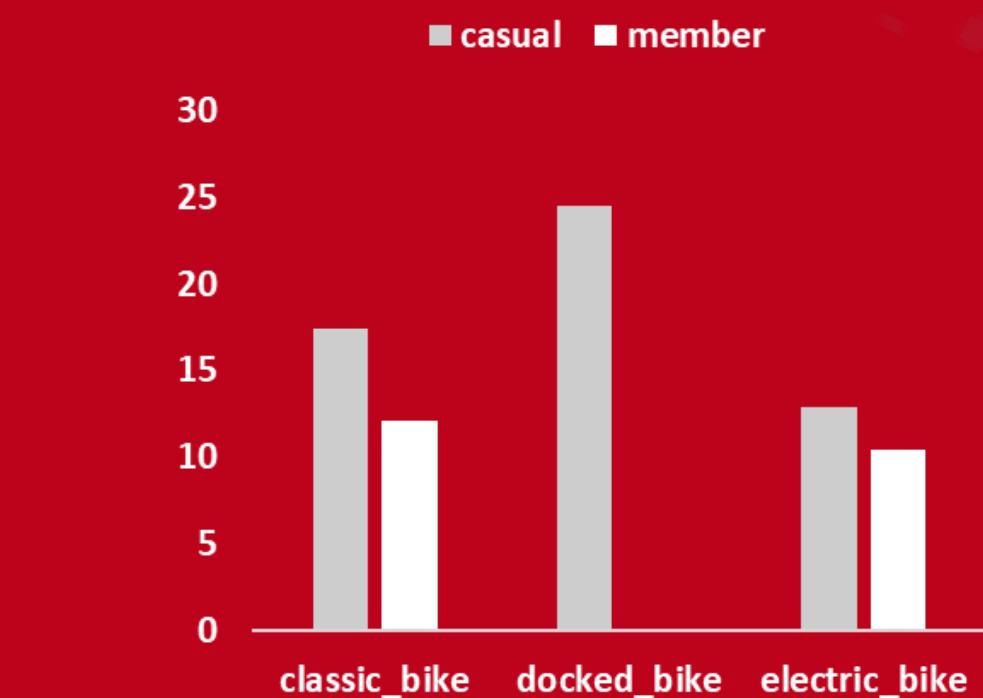
Despite being outnumbered by member riders, casual riders consistently exhibit longer average ride lengths.

Weekend rides show the highest average lengths for both casual and member riders, indicating casual riders prioritize leisurely rides while members opt for efficiency.

Bike Type Preference



Average Ride Length by Types of Bikes



Both casual and member riders show a preference for classic and electric bikes.

Docked bikes have the highest average ride length among all bike types, suggesting potential opportunities to promote longer rides and increase rider engagement.

Thank you!

Got any questions?