CYCLISTIC

A CONCISE ANALYSIS

OF THE

BIKE-SHARING PROGRAM

By

Adedapo Ibrahim Bayo

INTRODUCTION

Transportation has been part of human civilization; whether going to work, on holiday, or for tourism, all these usages are possible by means of transportation such as cars, buses, bikes, and others. Among all these means of transportation, bikes offer unique advantages such as sustainability and improvement of health and wellness.

Based on this, a Chicago-based company in 2016 launched a bike-sharing program offering; this had grown to a fleet of **5824** bicycles and **692** docking stations. It offered various bikes, such as reclining bikes, hand tricycles, and cargo bikes, making it more inclusive to people with disabilities.

It offers flexible pricing strategies such as single-pass and full-day passes, both of which are classified as casual riders, and members, who are classified as annual members.

Despite this growth, the cyclistic team is working to improve the profitability of the company. Currently, the marketing team focuses on building general awareness and appealing to broad customer segments, but there is a need for a new strategy to increase profitability. Cyclistic finance analysts have concluded that annual members are much more profitable than casual riders.

The marketing director is designing a marketing strategy to convert casual riders into annual members since casual riders are aware of the cyclistic program and have chosen cyclistic for their mobility needs.

STATEMENT OF BUSINESS PURPOSE

The aim of this analysis is to uncover how annual members and casual riders use cyclistic bikes differently.

METHODOLOGY

Data Source

The data used was data from the last 12 months, from July 2024 to June 2025, historical trip data from Motivate International Inc. (Index of bucket "divvy-tripdata"). under the license by Lyft Bikes and Scooters.

Tool Used

1. Excel
2. RStudio 4.5.1

Manipulation of Data

This initial data manipulation and visualization was done in RStudio 4.5.1 before final manipulation in Microsoft Excel.

STEP 1: COLLECT DATA

The file was downloaded from (Index of bucket "divvy-tripdata"), and the files were unzipped.

STEP 2: WRANGLE DATA AND COMBINE INTO A SINGLE FILE

column names of each of the files was compared and formatted into right and consistent data type

Two new columns, ride_length and day_of_week, were inserted and formatted into the proper data type.

STEP 3: CLEAN UP AND ADD DATA TO PREPARE FOR ANALYSIS

Inconsistent data was removed; the Dataframe includes a few hundred entries when bikes were taken out of docks and checked for quality by Divvy or ride_length was negative

STEP 4: CONDUCT DESCRIPTIVE ANALYSIS

Descriptive analysis such as mean, median, and mode of ride_length was conducted and also descriptive analysis of each member was compared with one another

STEP 5: EXPORT SUMMARY FILE FOR FURTHER ANALYSIS

a csv file was created for further visualization in Excel and for presentation

STEP 6: visualization in spreadsheet and PowerPoint

SUMMARY OF ANALYSIS

Table 1 This Table summarizes the average ride_length of each weekday between July 2024 and June 2025.

member_casual	weekday	Average_ridelength
member	Monday	708.4433
casual	monday	1517.7567
member	Tuesday	713.8919
casual	Tuesday	1362.9986
member	Wednesday	713.5224
casual	Wednesday	1385.9133
member	Thursday	8561.9639
casual	Thursday	13268.0137
member	Friday	6892.7711
casual	Friday	7466.4386
member	Saturday	1652.1112
casual	Saturday	2173.0024
member	Sunday	832.1108
casual	Sunday	1873.9188

Table 2. This table show the summary statistic of ride_length with minimum ride of 0.042 s and maximum ride of 2157000 s.

Descriptive statistics of ride_length	
shortest ride_length	0.042
1st Quarter	353.80
median ride_length	632.00
mean ride_length	3249.83
3rd Quarter ride_length	1234
longest ride_length	215700.00

Table 3 This table summarize the statistic of ride_length for annual members with minimum ride_length of 0.042 s and maximum ride_length of 214860 s.

Descriptive statistics of casual member ride_length	
shortest ride_length	0.042
median ride_length	812.886
mean ride_length	3249.836
longest ride_length	215700

Table 4 This table summarize the statistic of casual member ride_length with minimum of 0.0699 and maximum of 214860 s

Descriptive statistics of annual member ride_length	
shortest ride_length	0.0699
median ride_length	555.205
mean ride_length	4474.52
longest ride_length	214860

KEY INSIGHTS

Number of rides for the last 12 months: casual vs member

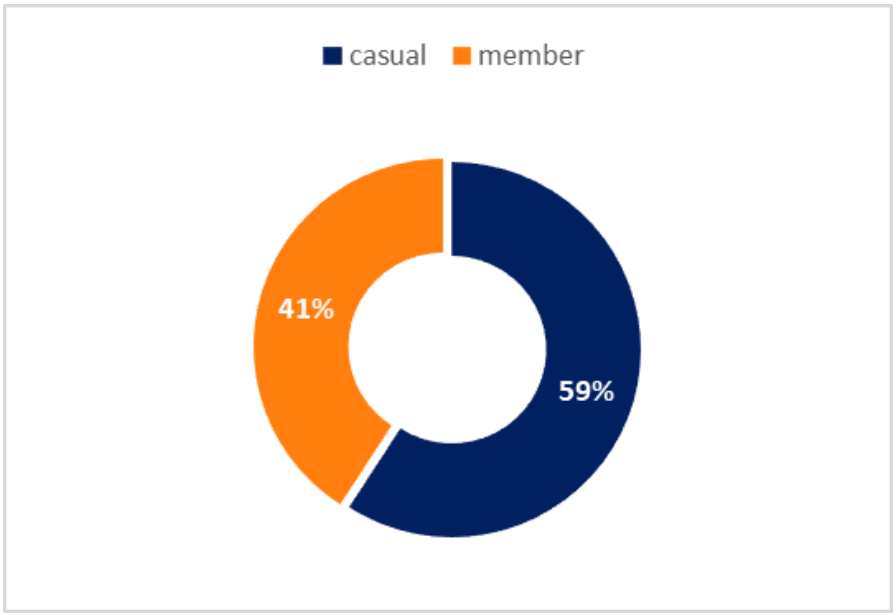

Figure 1 This represents the percentage of casual and annual members

This pie chart represents number of rides for the last 12 months, with annual members having a total of 59% and casual members staggering 41% despite nature of the usage such as single day pass.

Number of Rides by Weekday

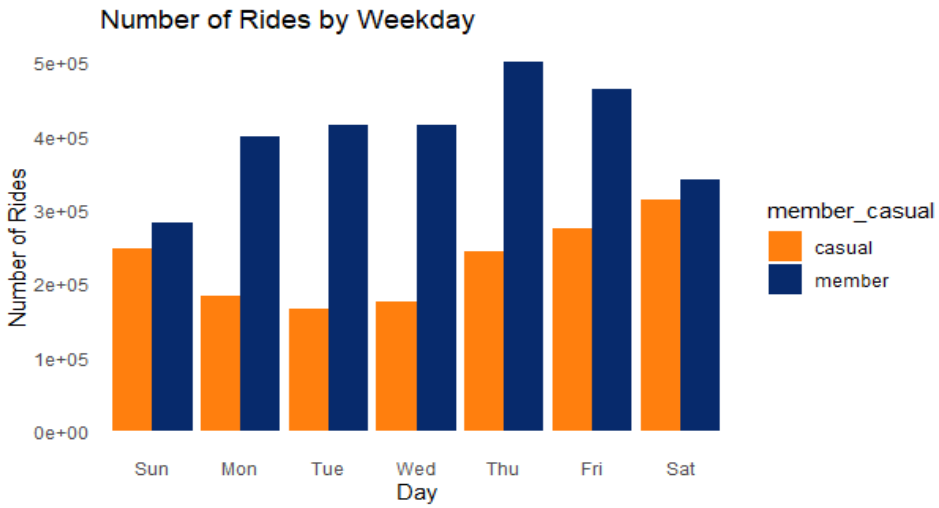

Figure 2 This figure show number of rides per weekdays

Difference in usage Patterns two rider types with Casual riders' usage peaks on the weekend and is low during the week, while member riders' usage peaks on the workdays and drops on the weekend.

Member riders contribute a much higher volume of rides to the total, as their ride count is significantly higher than casual riders' on every single day.

This chart provides strong evidence that the two customer segments use the bike-sharing service for different purposes: casual riders for weekend recreation, and member riders for weekday transportation like commuting.

Average ride duration by weekday

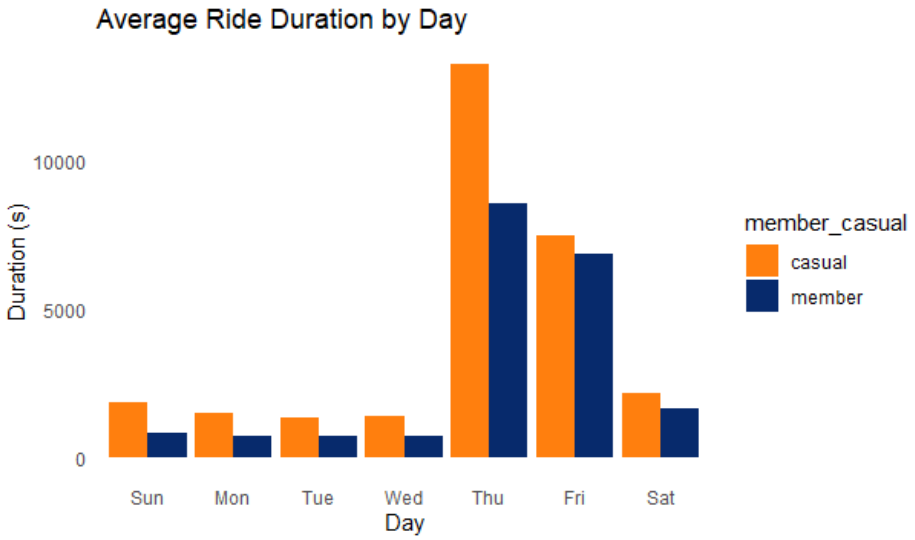

Figure 3 This figure shows the bar graph of average ride duration by day

This shows massive outlier for casual riders on Thursday. This is due to a few long rides that is inflating the average.

While members also have their longest average ride on Thursday, the value is much more contained. This is due to a route that is popular on Thursdays.

The above chart show members using the service more on weekdays and casual riders on weekends, this chart shows that when casual riders *do* ride on a weekday especially Thursday, their rides are, on average, much longer.

The member rider data shows a pattern of consistent, short rides, while the casual rider data is highly variable, with some days like Thursday showing a massive average duration, driven by outliers

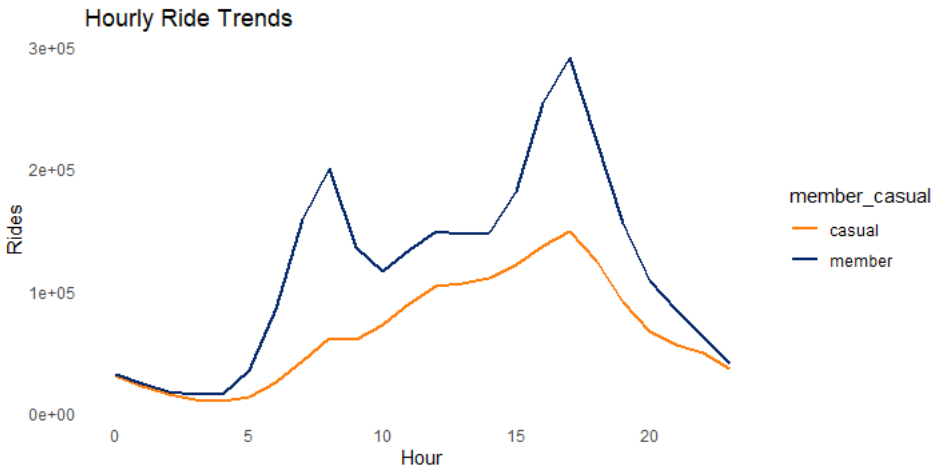

Figure 4 This graph shows number of rides hourly trend

This chart reinforces the purpose of the bike usage

The distinct morning and evening peaks for member strongly suggest they are commuters.

The single, broad afternoon/evening peak suggests that casual usage is more for leisure and social activities. The chart further highlights the higher volume of rides from member riders, especially during the peak commuting hours.

Distribution of ride length

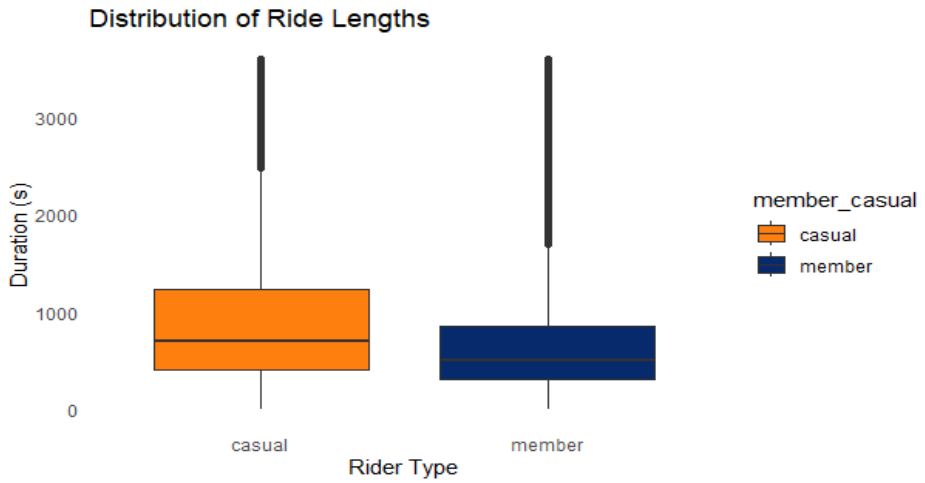

Figure 5 This figure shows the distribution rider type by box plot

The higher median (812) and larger interquartile range (IQR) for casual riders show that their rides are, on average, longer and have more inconsistent durations.

The lower median (555) and smaller IQR for member riders indicate that their ride durations are more predictable and generally shorter.

Both groups have whiskers that extend to roughly the same maximum value on the Y-axis (around 3500 seconds), suggesting that while members typically have shorter rides, both casual and member riders occasionally take very long rides.

The box plot effectively illustrates that casual riders tend to use the service for longer, less predictable trips, while member riders use it for shorter, more consistent trips.

Bike Type Preference

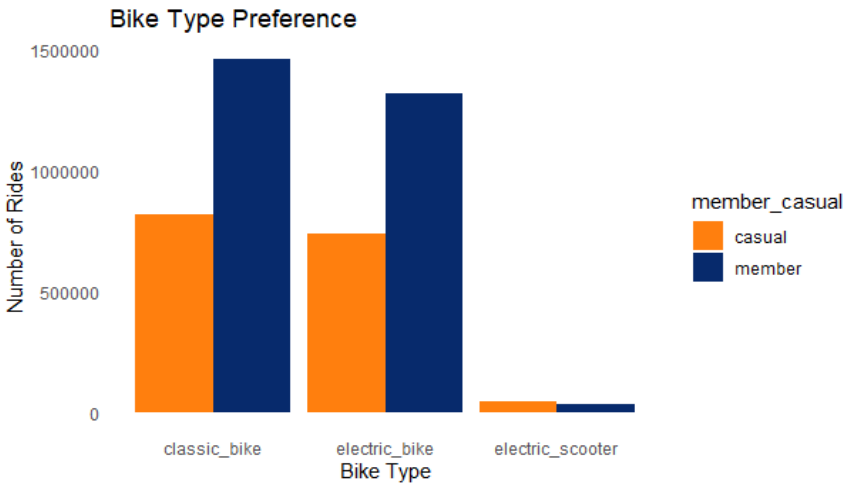

Figure 6 This chart show bike type preference

Both casual and member riders overwhelmingly prefer bikes (classic and electric) over electric scooters.

Member riders generate a higher volume of rides for all vehicle types, reinforcing the conclusion from the previous charts that they are the service's power users.

Casual Riders use classic bikes slightly more than electric bikes.

Member Riders use classic bikes significantly more than electric bikes.

While no significant difference for between annual member and casual member preference for electric scooter majorly due to being used by people with disabilities

Top Ten Start Station Name for Annual and casual members

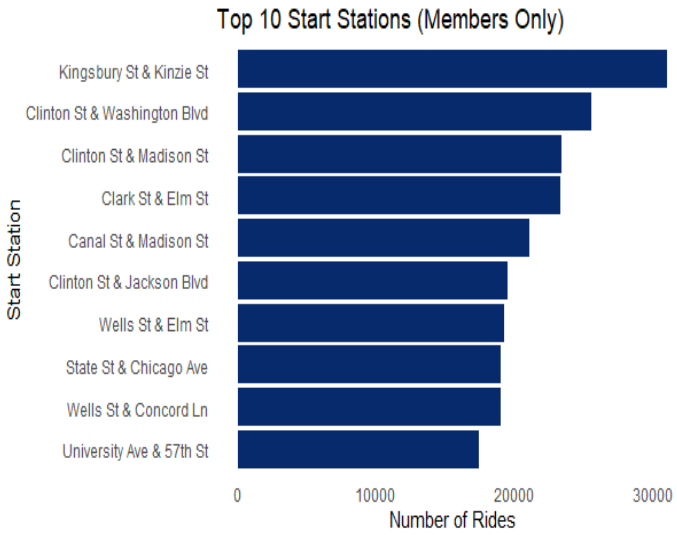

Figure 7 Top 10 start station name for annual members

The station names (e.g., Kingsbury St & Kinzie St, Clinton St & Washington Blvd, Clark St & Elm St) are all typical of a downtown urban environment, a central business district.
The number of rides from the top stations is high, with the highest being over 30,000 and the lowest being close to 20,000.

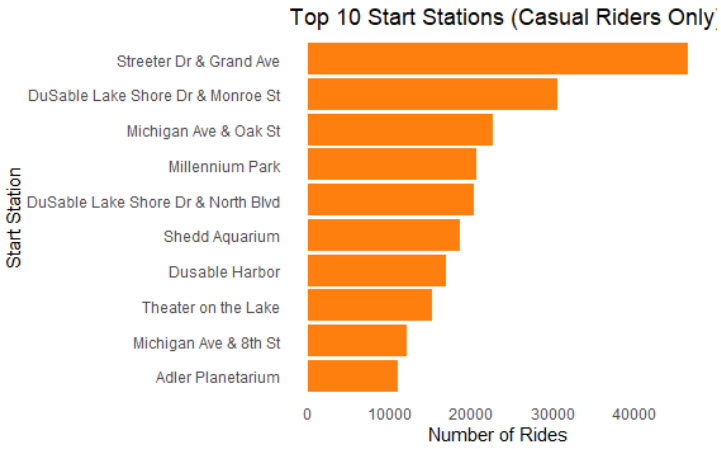

Figure 8 Top 10 start station name for annual members

The station names (e.g., Streeter Dr & Grand Ave, DuSable Lake Shore Dr & Monroe St, Millennium Park, Shedd Aquarium, Adler Planetarium) are tourist attractions, parks, and recreational areas.

The number of rides is also high, with the top station having over 40,000 rides. However, the volume drops off more steeply for the lower-ranked stations compared to the members' chart.

Comparison Of Casual and Annual Members Start Station Names

The most significant finding is the stark difference in the types of locations for the top start stations.

There is no overlap between the top 10 start stations for members and the top 10 for casual riders.

This indicates that the two groups have fundamentally different origins for their rides.

RECOMMENDATION

Top Three Recommendations for Converting Casual Riders to Annual Members

Based on the insights, here are three key recommendations:

1. **Implement Targeted Weekend & Tourist Hotspot Membership Promotions:**

Casual riders heavily use the service on weekends and at stations near tourist attractions. This indicates a high propensity for recreational use.

A marketing campaign targeting specifically the top casual rider start stations such as (Streeter Dr & Grand Ave, Millennium Park, Shedd Aquarium) on Saturdays and Sundays. Offering a compelling discount or incentive like **"Sign up for an annual membership today and get your next 3 rides free!"** immediately after a casual rider completes a trip. This will capitalize on their positive experience and offers an immediate value proposition.

2. **Highlight Cost-Effectiveness for Longer, Infrequent Rides:**

Casual riders take longer rides, which can quickly accumulate costs with single-ride or full-day passes. Even if infrequent, these longer trips represent a higher per-ride cost for casual riders.

A digital marketing content should be developed for social media ads, in-app notifications and e-mail campaigns that specifically targets casual riders who have completed longer rides. Highlighting the significant of cost savings an annual membership would provide over multiple longer trips. For example**, "Did you know your last ride would have been free with an annual membership? Save more on your next adventure!"**

3. **Commuting Benefits Through Digital Media:**

Casual riders currently do not exhibit a commuter pattern. By demonstrating the convenience and efficiency of bike-sharing for daily commutes, Cyclistic should tap into a new use case for this segment.

A digital media campaigns should be created for example short videos, animated infographics that visually depict the ease and benefits of using Cyclistic for commuting. Testimonials Featuring the current members highlighting how bike-sharing saves time, money, and reduces stress during their daily commute. Target these ads to casual riders during weekday morning and evening hours, potentially using geo-fencing around business districts. This directly addresses how digital media can influence casual riders to adopt a commuter mindset and become members.

CONCLUSION

The distinct usage patterns between Cyclistic's casual riders and annual members present a clear opportunity for targeted marketing. understanding *why* and *how* casual riders currently use the service, Cyclistic can craft compelling messages and offers that highlight the specific benefits of annual membership that align with their existing behaviours or encourage new, more frequent usage patterns. Implementing these recommendations can drive the conversion of casual riders, ultimately maximize annual memberships and contribute to Cyclistic's future growth.