Analyzing Cyclistic Bike sharing Data to identify User Differences towards driving Annual Memberships

Presented by: Tobi Ibidapo-Obe
Last Updated: 26th March, 2023

Outline

Executive summary

Analysis was conducted to identify user differences in Cyclistic bikes. By analyzing historical dataset over the last 12 months, valuable insights were gained to identify differences in Casual riders and Members, and recommendations are given towards driving annual memberships.

Introduction

We need to better understand how annual members and casual riders differ in order to design data-driven marketing strategies aimed at converting casual riders into annual members.

The aim of this study was therefore to identify how are Cyclistic Casual riders different from Members?

Methodology

The google analytic framework was used for this exploratory study. The framework includes the ASK, PREPARE, PROCESS, ANALYZE, SHARE and ACT phases. Pertinent questions that needed to be asked were streamlined to include;

➔ Are there specific trends or patterns that distinguish the two user groups?

➔ How do casual riders and annual members differ in their usage patterns?

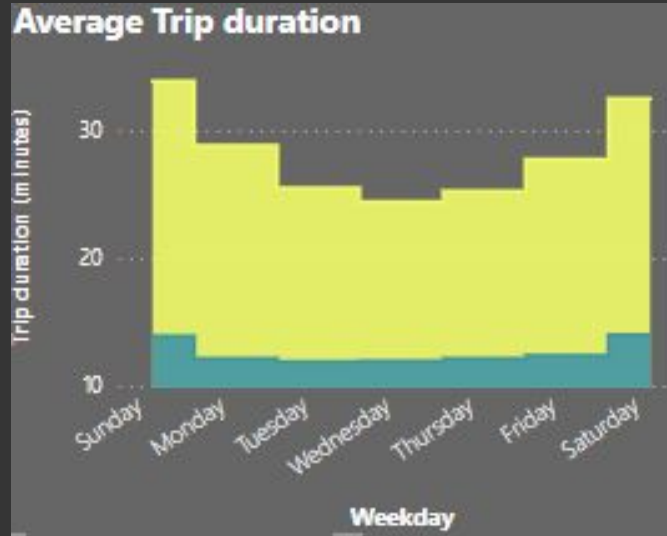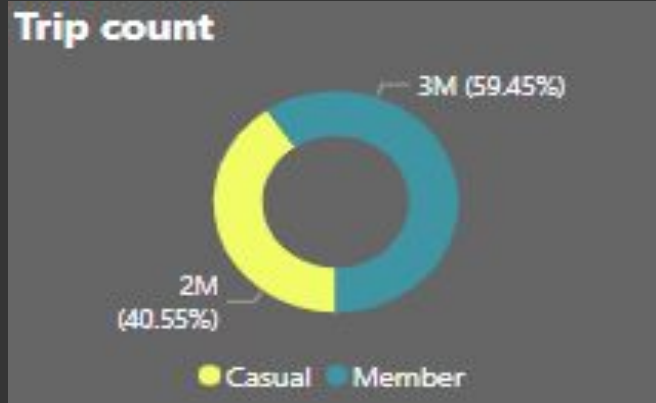➔ What actionable steps can be taken to encourage casual riders convert to annual memberships?

These questions were answered with metrics that include; **Trip counts, Trip duration, Bike Use, Routes Use.**

Summary of the framework used are;

- Ask phase: This was defining the business task and framing questions to guide analysis.

- Prepare phase: Cyclistic previous 12 months trip data was used. The data collected was appropriate to answer the business task.

- Process phase: Thorough work was done to process the data. Data exploration, cleaning and validation was conducted to ensure clean data for analysis. The documentation is available in the jupyter notebook file.

- Analyze phase: Exploratory data analysis was done to answer the questions highlighted.

- Share phase: Findings were discovered and a visual report prepared in Power BI is available.

- Act phase: Recommendations to convert casual riders is available in this presentation.

Results and Findings

Are there specific trends or patterns that distinguish the two user groups?

Trip count

3M (59.45%)

2M (40.55%)

● Casual ● Member

Average Trip duration

Trip duration (minutes)

30

20

10

Sunday Monday Tuesday Wednesday Thursday Friday Saturday

Weekday

Key Findings

Out of 5,776,703 trips, **casual riders** had 2,342,493 (**40.55%**) and average trip duration of **28.88 minutes** while member riders had 3,434,210 (59.45%) trips and average trip duration of 12.56 minutes

Results and Findings cont'd

How do casual riders and annual members differ in their usage patterns?

Key Finding

Data showed that docked bikes are not used by members.
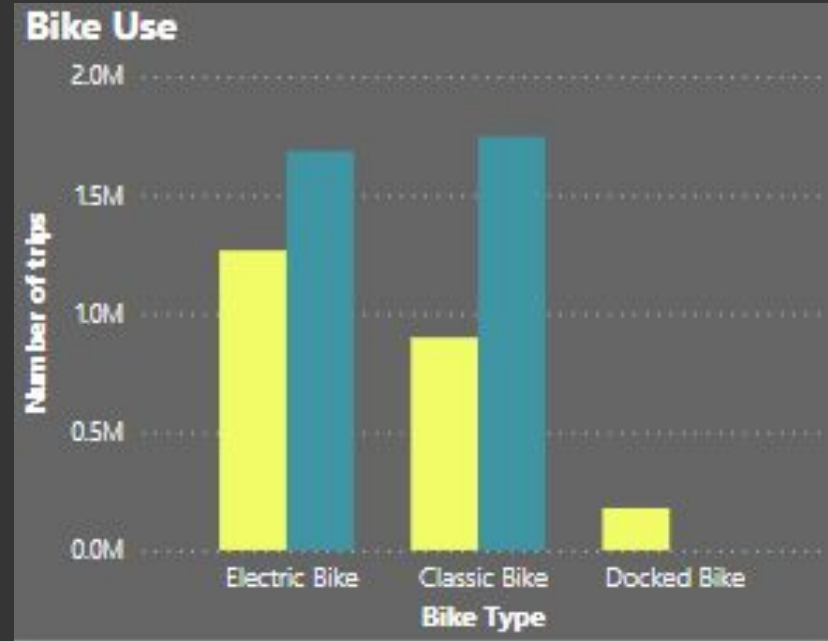
Results and Findings cont'd

How do casual riders and annual members differ in their usage patterns?

Top 5 Casual Routes
Routes
Streeter Dr & Grand Ave to Streeter Dr & Grand Ave
DuSable Lake Shore Dr & Monroe St to DuSable Lake Shore Dr & Monroe St
DuSable Lake Shore Dr & Monroe St to Streeter Dr & Grand Ave
Michigan Ave & Oak St to Michigan Ave & Oak St
Millennium Park to Millennium Park

Key Finding

Data revealed that the most preferred routes taken by casual riders are different from the routes taken by members.

Top 5 Member Routes
Routes
University Ave & 57th St to Kimbark Ave & 53rd St
University Ave & 57th St to Ellis Ave & 60th St
Ellis Ave & 60th St to Ellis Ave & 55th St
Ellis Ave & 60th St to University Ave & 57th St
Ellis Ave & 55th St to Ellis Ave & 60th St

Recommendations

Data has shown casual riders have longer average trip durations. They might find annual membership more suitable knowing it allows them to enjoy extended rides without incurring additional costs. Cost-saving messages can persuade casual riders to become members.

For casual riders to become members, Cyclistic need to consider improving docked bike availability and expand the bike network in stations used by member riders. Ensuring bikes are readily available at docking stations will help Cyclistic manage its newly complex membership base.

Create personalized membership messages on social media platforms, to target locations and along popular routes taken by casual riders. Such messages when seen can convince casual members to apply for membership.

Conclusion

By effectively communicating membership benefits through targeted marketing campaigns and implementing the recommendations of this analysis, Cyclistic can create a more enticing value proposition for casual riders to become annual members, ultimately increasing membership conversion rates and fostering long-term customer loyalty.

Thank you!