Cyclistic Bike-Share Case Study

Analyst: Vamsi Myla
Date: 06/02/2025

Executive Summary

Cyclistic, a Chicago-based bike-share company, aims to increase its number of annual members by converting casual riders. This project analyzes rider behavior using Q1 2020 trip data and provides actionable business insights. Results suggest that casual riders are leisure-oriented and respond to different motivations compared to members, who primarily commute. Targeted marketing strategies can bridge this gap.

Business Task

Objective: Identify behavioral differences between casual and member riders to develop strategies that convert casuals into members.
Stakeholder: Cyclistic Marketing Analytics Team

Data Sources

- **Raw Data:** Divvy_Trips_2020_Q1.csv (1.5M+ rows of trip records)
- **Tools Used:** Python (Pandas), Google Colab, Tableau
- **Cleaned Data Outputs:**
    - avg_ride_duration.csv
    - weekday_usage.csv
    - bike_type_usage.csv
    - monthly_usage.csv

Data Cleaning

Performed in Python (see Cyclistic_Bike_Share_Analysis_project.ipynb):

- Removed rides with non-positive durations
- Converted time columns to datetime
- Created new columns: `ride_length_min`, `weekday`, `month`
- Exported grouped summaries for visualizations

Exploratory Analysis & Key Insights

1. Average Ride Duration

Insight: Casual riders average 37.03 minutes per ride, while members average only 11.50 minutes.
Interpretation: Casuals are more leisure-focused.

2. Weekday Usage Trends

Insight: Members ride mostly on weekdays; casuals dominate on weekends.
Interpretation: Members use bikes to commute; casuals use them for recreation.

3. Bike Type Usage

Insight: Docked bikes are heavily used by members compared to casuals.
Interpretation: Members ride more frequently regardless of bike type.

4. Monthly Ride Trends

Insight: Casual ride volume increases from January to March, while member usage stays consistent.
Interpretation: Casual riders are more season-sensitive.

Visualizations (via Tableau)

Each visualization was created using aggregated CSVs:

- **Bar Chart:** Avg ride duration by rider type
- **Stacked Bar:** Weekly usage by rider type
- **Grouped Bar:** Bike type preference
- **Line Chart:** Monthly ride trends

Recommendations

1. **Launch Weekend Memberships**
   Incentivize casual users with weekend or family passes.
2. **Seasonal Promotions**
   Target casuals in spring/summer when their usage rises.
3. **In-App Cost Comparisons**
   Show casuals how much they could save as members.
4. **Highlight Member Perks**
   Emphasize convenience, loyalty programs, and app features.

Conclusion

This analysis shows clear behavior differences between Cyclistic's casual and member users. Marketing efforts that align with these patterns can drive membership growth. The next step is A/B testing campaign strategies and expanding the analysis to a full year of data.