



Trips Analytics & Data-Driven Growth Strategy



PREPARED BY

Monica Bonu



EXECUTIVE SUMMARY

Project objectives, key insights and strategic recommendation

🎯 Aim

To understand how annual members and casual riders use Cyclistic bikes differently, in order to inform the design of targeted, data-driven conversion strategies for casual riders.

🏃 Objectives

1. Compare trip volume patterns across user types and time periods
2. Assess differences in trip duration between casual riders and annual members
3. Identify temporal usage patterns (monthly, daily, and hourly) that differentiate the two user groups
4. Highlight opportunities for membership conversion based on observed usage patterns

💡 Key insights

General trend

Increase in overall trips by both users in 2020

User comparison

Both casual riders and annual members use Cyclistic services differently

Duration

Casual riders travel 7X longer than annual members

✖️ Strategic recommendation

Incentivise Long-Duration casual Riders

Flexible membership option

Sustain casual riders inflow funnel

Expand data collection to facilitate membership growth prediction

DATA SCOPE & METHODS

Collection, cleaning and analysis

Data Types & Sources

Source

Motivate International Inc.

Trip records

Ride ID, Start/End time, User Type

Period

2019 & 2020
Quarter 1: Jan - Mar

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PREPROCESSING

- Remove trips < 1 mins (False start)
- Handled missing data



TRANSFORMATION

- Extract Hour, Day and Month
- Recoded Usertypes
- Factorisation and vectorisation of data
- Conversion into long format dataset



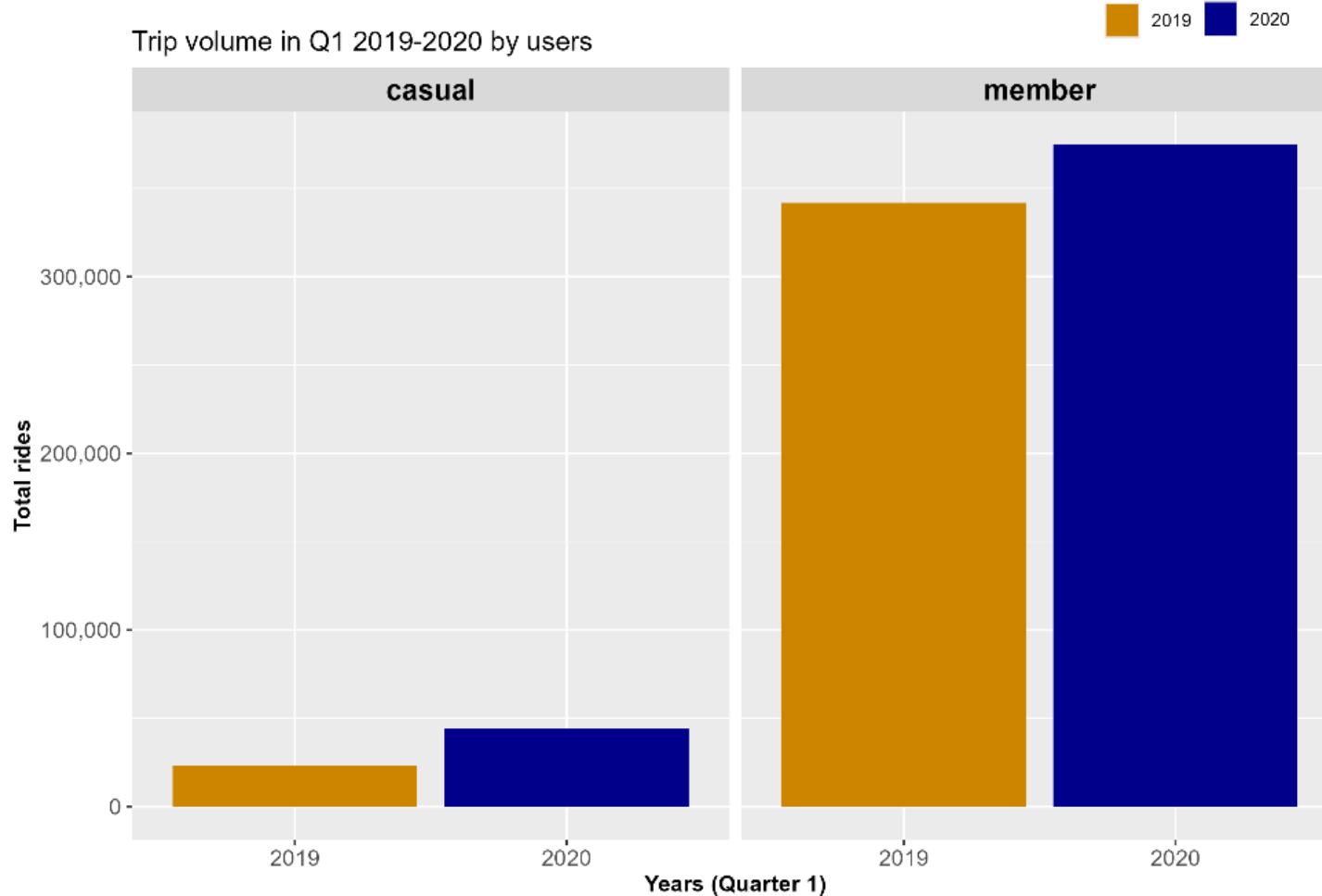
ANALYSIS

- Descriptive analysis (count, mean and median)
- Inferential analysis (chi-square and student t-test)
- Result visualisation

TRIP VOLUME ANALYSIS

Total trip volume in quarter 1(Q1) 2019 and 2020

Trip volume in Q1 2019-2020 by users



Trip volume

Q1 combined

783,020 trips

↑ by 61,818 trips in 2020 (~8%)

Member (annual subscribers)

91%

↑ by 4% in 2020

Casual (casual riders)

9%

↑ by 32% in 2020

Insight

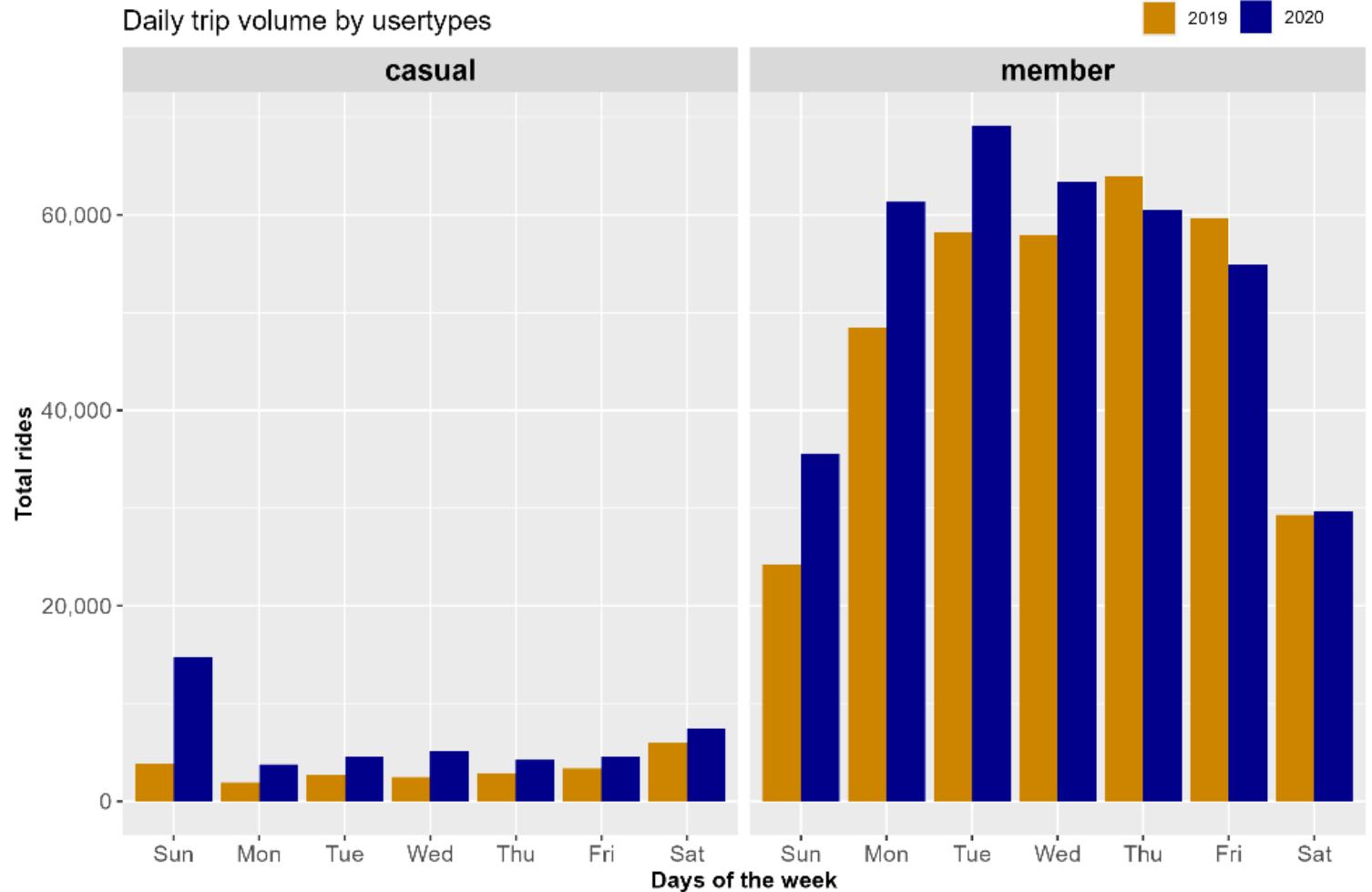


Incremental changes in trip volume by both user groups

TEMPORAL TRIP VOLUME ANALYSIS

Daily trips by both casual and annual members grouped by year

Daily trip volume by usertypes



Members (annual subscribers)



WEEKDAY RIDERS

Casual (casual riders)

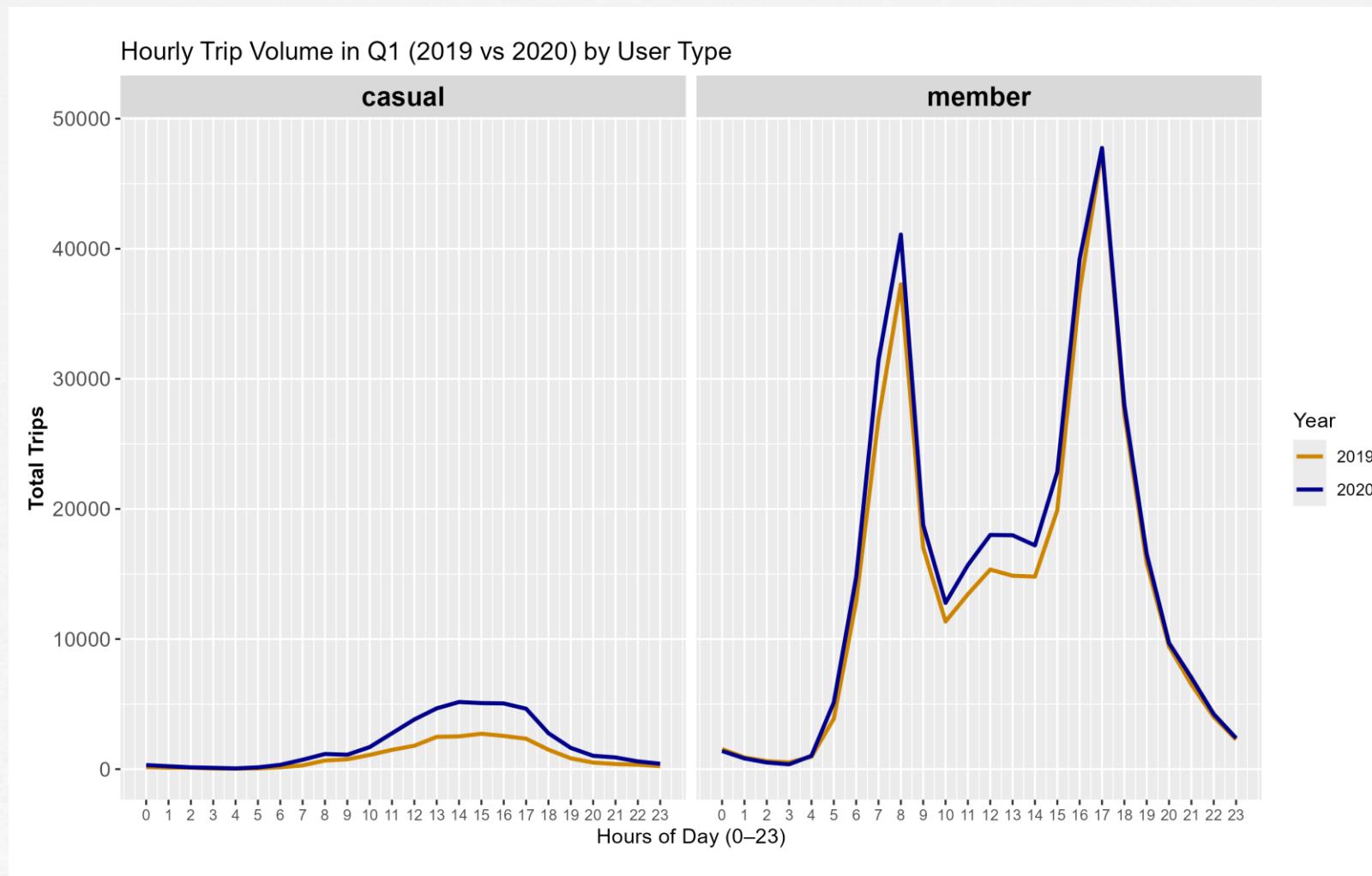


WEEKEND RIDERS

TRIP VOLUME ANALYSIS

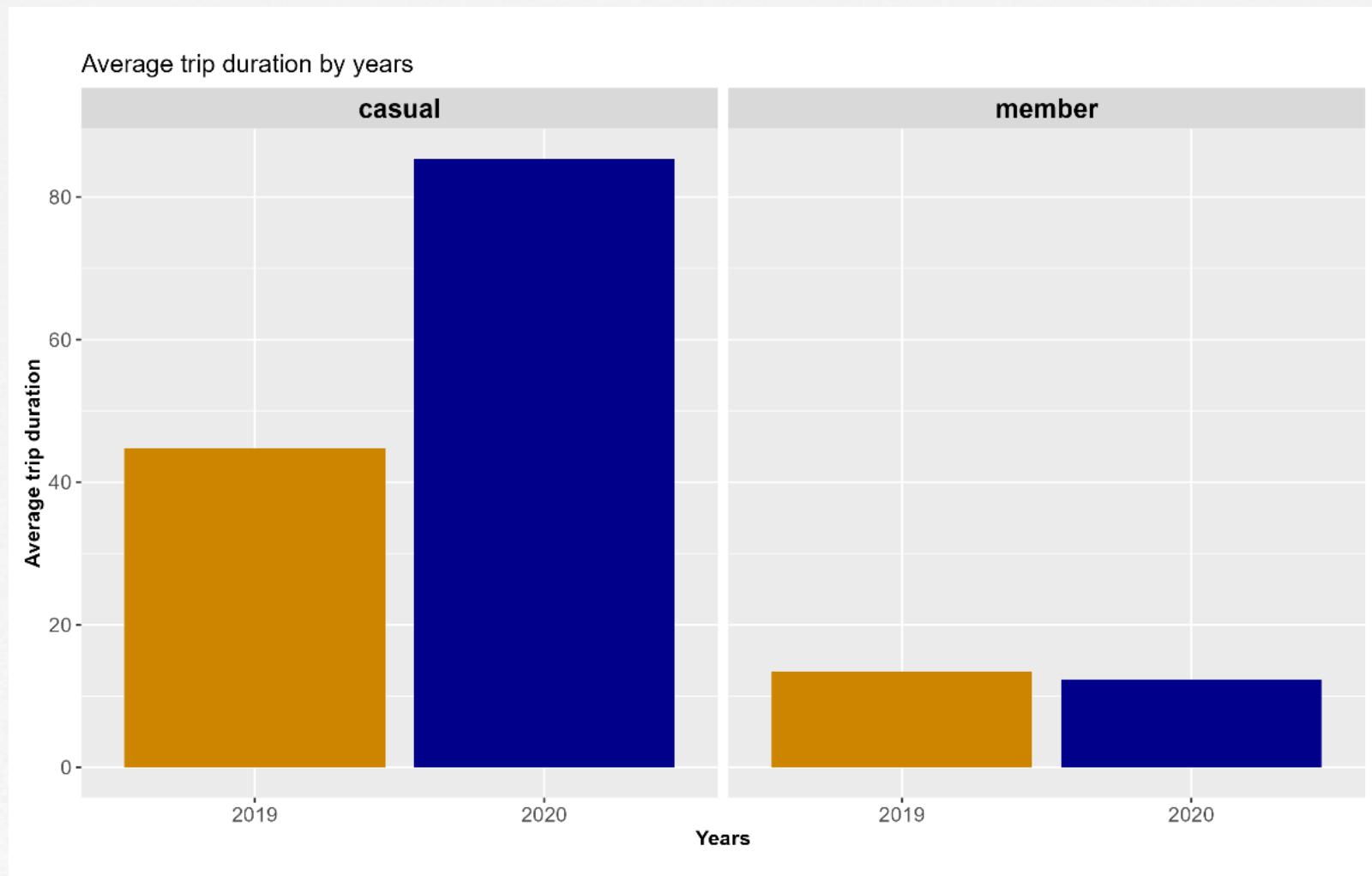
Analysis period: Q1, 2019 -2020

Hourly trips by both casual and annual members grouped by year (24hr period)



TRIP DURATION ANALYSIS

Overall trip duration for both casual and annual members grouped by year



Average trip duration 2020

20 mins

50% of all rider below 9 mins

Members (annual subscribers)

12 mins

50% travelled below 9 mins

7x

Casual (casual riders)

85 mins

50% travelled below 23 mins

Insight



Casual riders travelled longer than annual subscribers

Behavioural Interpretation

How do annual subscribers and casual riders use Cyclistic bikes differently?



The difference in users' behaviour is explicit from the duration, days and purpose of trips

Casual riders

- Long-duration riders
- Weekend riders
- Leisure riders

Annual subscribers

- Short-duration riders
- Weekday riders
- Work-related riders

Business Recommendations (marketing)

Conversion strategies for enhancing Annual Membership Growth through the casual rider pipeline



Reposition the Annual Subscription Package as a value-driven and cost-efficient alternative



Incentivise Long-Duration Casual Riders

Incentivise riders exceeding trip duration thresholds (first-month discounts, trial membership options)



Maintain Casual Rider Funnel

Continue investing in casual rider accessibility and visibility to sustain annual conversion flow



Deploy a Time-specific Campaign

- Run weekend promotional campaigns
- Employ rider specific in app campaign based on cumulative monthly trip duration



Flexible Membership Option (Quarterly subscription)

Lowers commitment barriers and creates a steppingstone to full annual membership

Business Recommendation (Data)

Data collection and future conversion prediction



Data Enhancement and future analysis

To enable more precise, user-level conversion strategies, Cyclistic should expand its data collection beyond trip-level metrics.



Rider Profile & Socio-Demographic Data (age, gender, employment status, etc.)

Enables segmentation of casual riders by life stage and mobility needs, improving targeting precision for membership conversion



Bike & Product Preference Data

Enhance target cyclistic service to meet specific riders needs



Pricing & Spend Data

Enables quantification of the value proposition of membership for individual riders.

CONCLUSION

Analysis period: Q1, 2019 - 2020

1

Casual riders and annual members exhibit structurally different usage patterns

- Annual members are short-distance, weekday commuters
- Casual riders take longer trips, concentrated on weekends

2

Membership Growth Strategy

- should focus on converting high-potential casual riders while sustaining casual rider acquisition
- Include flexible membership options to reduce commitment barriers

3

Expand Trip data

- Expanded data collection beyond trip-level metrics is required to enable targeted marketing and predictive conversion strategies