



David Martinez, May 20, 2025

Cyclistic Case Study: How Annual Members & Casual Riders Use Bikes Differently

Business Task

- **Objective:** Convert more Casual Riders into Annual Members to drive profitable growth.
- **Context:**
 - Since 2016, Cyclistic has grown to 5,824 bicycles and 692 stations across Chicago.
 - Casual Riders purchase single-ride or full-day passes; Annual Members pay yearly and generate higher lifetime value.
- **Charge from Marketing Director:**

“Design marketing strategies aimed at converting casual riders, who already use Cyclistic, into annual members.”
- **Guiding Questions:**
 1. How do Annual Members and Casual Riders use Cyclistic bikes differently?
 2. Why would Casual Riders buy an annual membership?
 3. How can digital media influence that conversion?
- **Today’s Focus:** Question 1—usage differences between the two groups.

Executive Summary

- **Significant Usage Disparity:** Annual Members (Subscribers) exhibit substantially higher ride volume (**882**) compared to Casual Riders (Customers) (**118**).
- **Differing Trip Length Tendencies:** Subscribers favor longer average trips (**34 minutes**), while Casual Riders average shorter rides (**10 minutes**) but with greater variability, including rides up to **60 minutes**.
- **Marketing Recommendations:** Leverage these patterns to:
 - **Attract Leisure Riders:** Promote the value of annual memberships for the extended, varied trips favored by some casual riders.
 - **Reinforce Commuter Value:** Emphasize the consistent, efficient short trips enjoyed by current subscribers.
 - **Incentivize Frequent Casual Riders:** Offer targeted membership trials or discounts to those showing potential for increased usage.
 - **Key Opportunity:** Converting casual riders who exhibit longer, or more frequent rides represents a significant growth potential for Cyclistic.

Data Sources

- **Raw Ride Logs (CSV):**
 - Divvy_Trips_2019_Q1.csv
 - Divvy_Trips_2019_Q2.csv
 - Divvy_Trips_2019_Q3.csv
 - Divvy_Trips_2019_Q4.csv
 - Divvy_Trips_2020_Q1.csv
- **BigQuery Tables & Views:**
 1. **cyclistic_trips_full_year_tbl** (Unioned & schema-aligned full year of ride logs)
 2. **cyclistic_trips_core_metrics** (View with **ride_length_min** & **day_of_week**)
 3. **cyclistic_trips_summary** (View of overall KPIs: ride counts, mean/min/max durations, mode day)
 4. **trends_avg_length_by_weekday** (Table of avg. ride length & count by day of week)
- **Exported for Visualization:**
 - Extracted Hyper files in Tableau Public

Data Cleaning & Manipulation

- **Schema Alignment:**

- Renamed Q2 column headers to match Q1/Q3/Q4 (**trip_id**, **start_time**, **end_time**, **bike_id**, etc.)
- Added NULL columns in 2020 Q1 for missing fields (**bike_id**, **tripduration**, **from_station_id**, **gender**, **birthyear**)

- **Type Casting:**

- Cast all **trip_id** fields to STRING (to accommodate alphanumeric IDs in 2020 Q1)
- Ensured **birth_year** and **bike_id** are INTEGER, timestamp fields are TIMESTAMP

- **Union & View Creation:**

- Used CREATE OR REPLACE VIEW **cyclistic_trips_full_year_tbl** AS ... UNION ALL ...
- Produced a single, year-long table with consistent schema

Data Cleaning & Manipulation: Enrichment and Summary View

•Enrichment:

- Added **ride_length_min** = `TIMESTAMP_DIFF(end_time,start_time,MINUTE)`
- Added **day_of_week** = `EXTRACT(DAYOFWEEK FROM start_time)`

•Summary View:

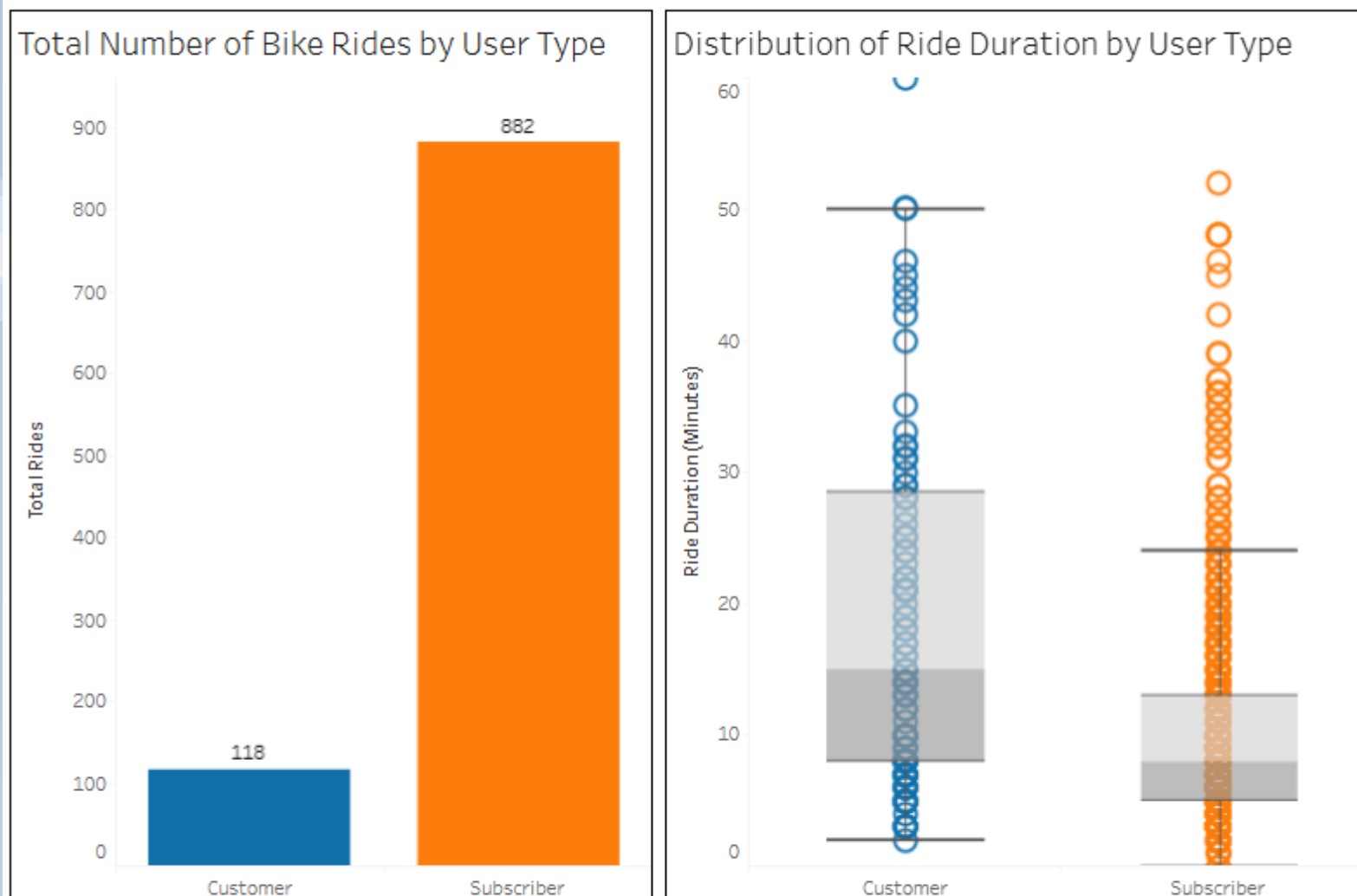
- Created **cyclistic_trips_summary** view to calculate:
 1. Total rides & distinct **trip_id** count
 2. Mean, min, max ride durations
 3. Mode of **day_of_week** via `APPROX_TOP_COUNT`

Summary of Analysis

- **Volume Disparity:** Subscribers accounted for 88% of total rides (882 vs. 118) over our study period.
- **Average Trip Duration:** Subscribers ride 3× longer on average—34 min vs. 10 min for Casual Riders.
- **Duration Consistency:** Subscriber trip lengths cluster tightly around 25–45 min; Casual Rider durations are far more dispersed, up to the 60 min free-ride limit.
- **Peak Usage Days:** Both groups ride most on Saturdays and Sundays, but Casual Riders show larger weekend spikes.

Comparing Cyclistic Rider Usage: Annual Members vs. Casual Riders (2019 - Q1 2020)

Usertype
Customer
Subscriber



Key Differences in Cyclistic Usage:

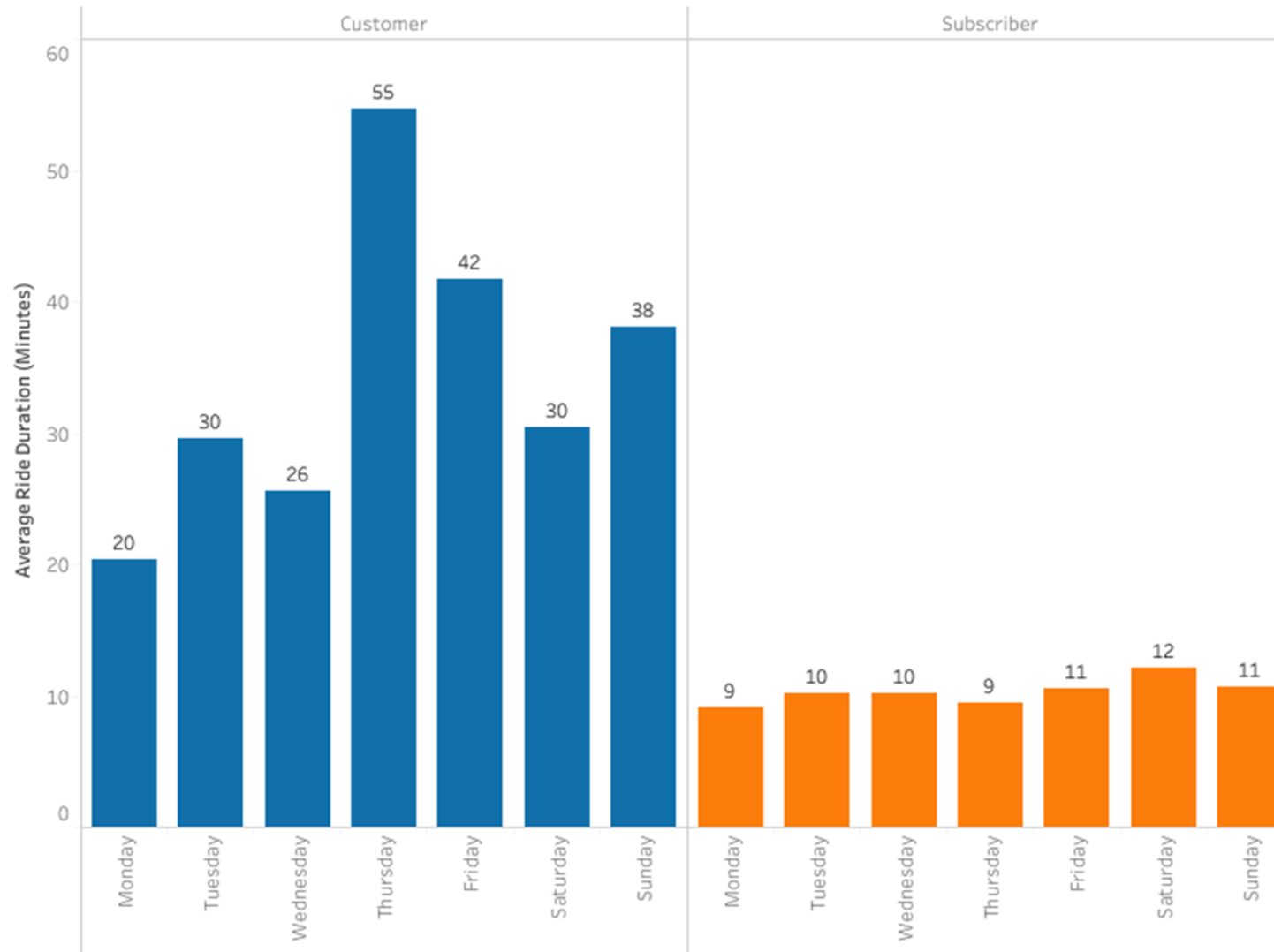
Ride Volume: Annual members (Subscribers) take 882 rides versus 118 rides by casual riders (Customers).

Ride Duration: While Subscribers' rides center around 34 min and Customers' around 15 min, the overall distributions are similarly compact within the 0–60 min range—both groups have relatively few extremely long or very short outliers.

Consistency vs. Variation: Subscribers show a tighter interquartile range (more consistent trip lengths), whereas Customers' IQR is broader, indicating greater variation in how they use the service.

Average Bike Ride Duration by User Type and Day of Week (2019 - Q1 2020)

Usertype
Customer
Subscriber



Key Differences in Average Ride Duration by Day:

Weekdays Longer for Casual: Casual Riders average significantly longer rides on weekdays.

Shorter, Consistent Subscriber Rides: Subscriber average ride times are shorter and consistent across all days.

Largest Difference Mid-Week: The biggest gap in average duration occurs mid-week...

Top Three Recommendations

Driving Casual Rider Conversion

- **Tailored Marketing for Leisure-Oriented Riders**

- Strategy: Develop campaigns that highlight the economic benefits and convenience of an annual membership for longer, leisure-focused rides.
- Focus: Emphasize unlimited access, cost savings on multiple longer trips, and the freedom to explore Chicago without per-ride charges.
- Channels: Target digital media (social media, travel blogs, local event partnerships) where these riders plan their recreational activities.

- **Reinforce Subscriber Benefits for Retention & Advocacy**

- Strategy: Continue to emphasize the core value proposition for current Annual Members, strengthening loyalty and encouraging referrals.
- Focus: Highlight the seamless, consistent, and efficient nature of their daily commute or short-trip needs.
- Channels: Utilize in-app notifications, email campaigns, and member-exclusive content that celebrates their predictable usage.

- **Strategic Incentives for Frequent Casual Riders**

- Strategy: Identify casual riders who show patterns of increased ride frequency or longer-duration trips and offer them personalized conversion incentives.
- Focus: Provide trial memberships (e.g., 1-month free), step-down pricing (e.g., discounted first year), or loyalty points that convert to membership credit.
- Channels: Implement targeted in-app prompts, email remarketing campaigns, and potentially direct mail if address data is available.

Thank you!

- Questions?
- David Martinez
- Email: demartinez722@gmail.com
- GitHub: <https://github.com/DavidMartinezAnalyst/cyclistic-bike-share-analysis/tree/main>
- LinkedIn: www.linkedin.com/in/davidmartinezanalyst