

# Riding the Demand: Insights for a Bike-Share PM

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A Data-Driven Analysis to Inform Product, Operations, and  
Marketing Strategy

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# BLUF (Bottom Line Up Front)

**Key Finding:** A recent app change aimed at commuters showed a promising but statistically inconclusive ridership increase of +43.78 rides/hour. Further testing is required.

**Primary Insight:** Our user base is clearly split into two predictable groups: high-frequency Weekday Commuters (Registered Users) and high-volume Weekend Leisure Riders (Casual Users).

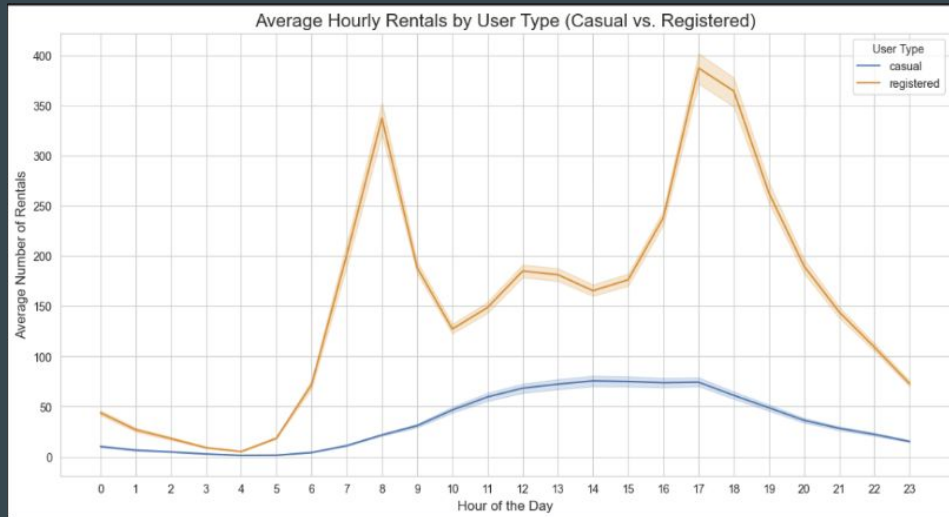
**Immediate Opportunities:** This analysis has identified clear, low-impact maintenance windows and provides a data-backed foundation for launching distinct marketing campaigns tailored to each user segment.

**Recommendation:** Extend the A/B test to gather more data, and immediately implement targeted operational and marketing strategies based on the distinct user patterns identified.

# Insight 1: Two Distinct Rider Personas Drive Our Business

**Registered users are predictable commuters; casual users are leisure riders.**

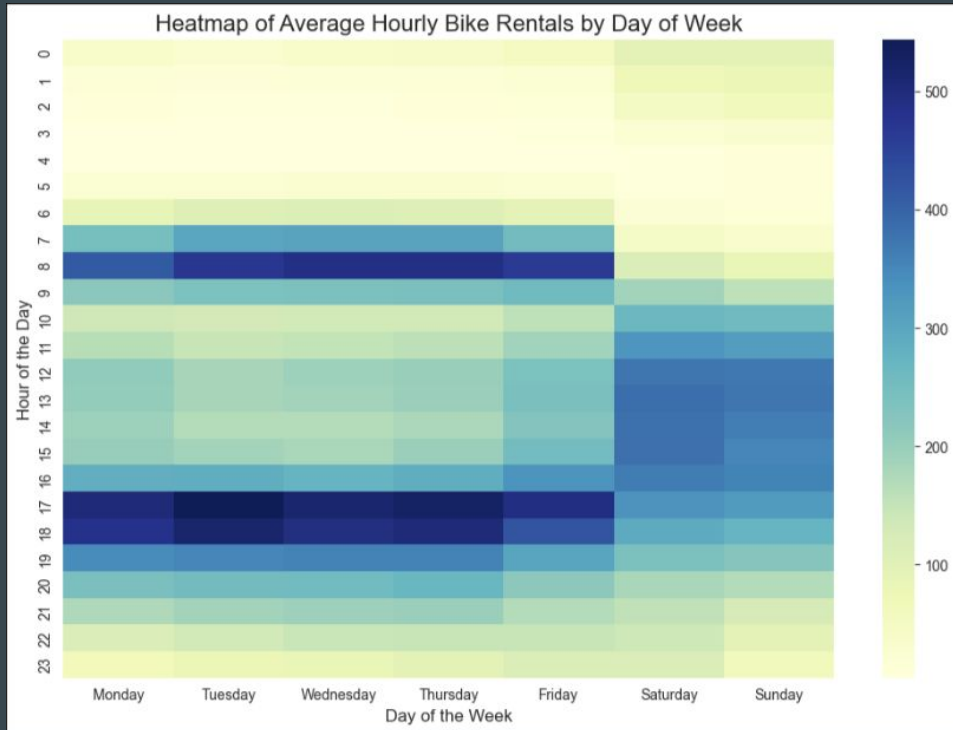
- **Registered Users (Commuters)** : Drive massive, predictable ridership peaks at 8 AM and 5-6 PM on weekdays. They are the core, high-frequency users.
- **Casual Users (Leisure Riders)**: Create a sustained, high-volume block of demand on weekend and weekday afternoons. They represent a key segment for growth.



# Insight 2: The Weekly Rhythm of Demand

The weekly usage heatmap provides a clear playbook for operational efficiency.

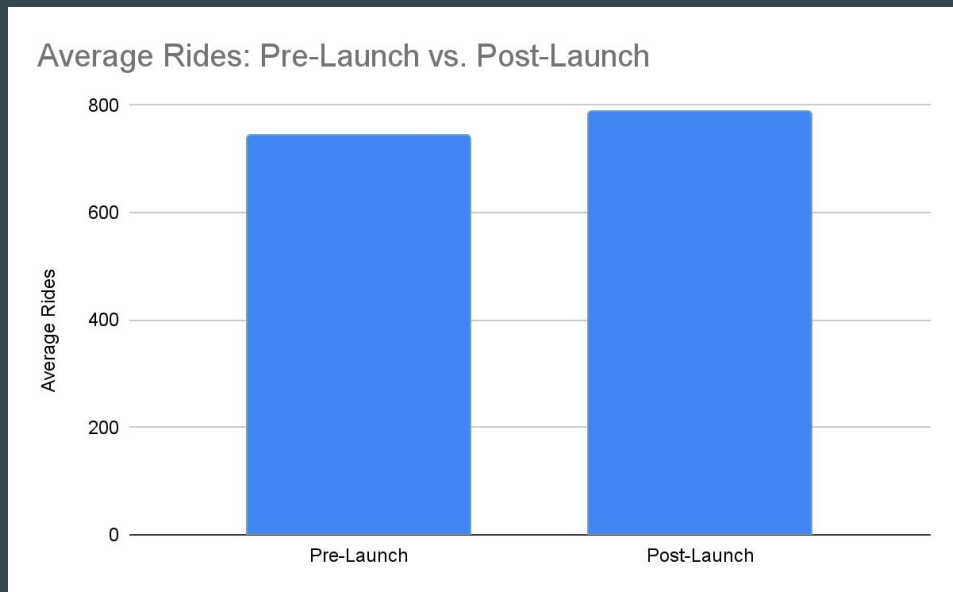
- **Opportunity 1 (Rebalancing):** The dark blocks at 8 AM and 5-6 PM on weekdays are the most critical windows for bike rebalancing to meet peak commuter demand.
- **Opportunity 2 (Maintenance):** The consistent lull from 12 AM to 5 AM every day is a reliable, system-wide, low-impact window for fleet and station maintenance.



# A/B Test: A Promising but Inconclusive Result

The app change increased observed ridership by +43.78/hr, but the result lacks statistical certainty.

- **Practical Significance: STRONG POSITIVE:**
  - The post-launch period showed an **increase** of **+43.78** rides/hour.
  - This is well above our practical **significance** threshold of **+15** rides/hour.
- **Statistical Significance: INCONCLUSIVE**
  - The p-value was **0.1206**, which is higher than our risk threshold of **0.05**.
  - This means we cannot be **95%** confident that the increase was caused by the feature and not random chance, likely due to a small sample size.



## **A Note on Risk & External Factors:**

Our analysis confirms that ridership drops dramatically during rain or snow.

This poses a significant risk to revenue forecasts and service reliability.

**Ethical Consideration** : This presents an "equity of access" issue for users who rely on our service for their commute. Our communication and operational plans must account for this uncertainty.

# Recommendations & Next Steps

- **Extend the A/B Test (Product)** : The observed +43.78 ride/hour increase is too promising to ignore. Continue the experiment to gather more data and achieve statistical confidence.
  - **Implement Segmented Strategies (Marketing & Ops):**
    - **Marketing** : Immediately begin designing separate campaigns for the "Weekday Commuter" and "Weekend Leisure" segments.
    - **Operations** : Formalize the 12 AM - 5 AM window for system maintenance and refine rebalancing plans for the 8 AM and 5 PM weekday peaks.
  - **Plan for Seasonality (Strategic)** : Schedule the bulk of the annual fleet overhaul and major maintenance for the statistically confirmed low-demand "Spring" season (Jan-Mar).
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