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# Bike Share Case: User Behavior Insights

This report analyzes two years of hourly bike share usage data, addressing three key business questions. The primary objective is to provide actionable insights into customer behavior, particularly regarding the differences in usage patterns between casual and registered users. By examining these insights, we aim to offer strategic recommendations to the company's leadership team, enabling them to enhance ridership and optimize services based on varying conditions such as weather and seasonality.

**Business Question 1: How do bike rental patterns vary among casual and registered users on weekdays, weekends, and holidays, and what targeted recommendations can be made based on these patterns?**

**[Click here to visualize data in Tableau Public]**

**Description:** This stacked bar chart displays the average number of rides for casual and registered users on each holiday, categorized by working day. The colors represent ridership type: blue for casual users and orange for registered users. Each bar is labeled with the ridership type and the average number of rides.

**Key Insights:**

- **Registered users** account for the highest number of rides on both weekends (holidays and non-holidays) and weekdays (non-holidays), with weekdays (non-holidays) showing the most rides overall (about 193 rides). This suggests that registered users are more active during the week, likely due to commuting patterns. Interestingly, their activity slightly decreases on weekends, indicating that they may prefer to use bikes for weekday travel rather than leisure.
- In contrast, average rides for **casual users** increase on weekends compared to weekdays, suggesting that casual riders take advantage of their free time for biking activities during this period. Overall, bike activity is lowest during weekend holidays, which could indicate that many potential users may be using other transportation methods.

**Recommendations:**

1. **To stimulate retention among registered users** the company could implement a points-based loyalty program where registered users earn points for every ride taken, which can be redeemed for discounts on future rentals. The company could stimulate engagement by send personalized offers, reminders, and updates about new bike models, routes, or upcoming events that align with their preferences to registered users.
2. **To boost weekend activity among registered users,** the company could offer targeted promotions such as discounted rentals or loyalty points for rides taken on weekends, potentially increasing overall weekend usage.

3. **To capitalize on the rising average rides among casual users during weekends and holidays,** the company could develop engagement initiatives like organized group rides, loyalty programs and offer perks. For instance, a "Weekend Explorer" plan could offer casual riders unlimited rentals on weekends for a fixed monthly fee, encouraging them to ride more frequently while ensuring steady revenue for the company.

**Business Question 2: How does the average yearly number of bike rentals for both casual and registered users differ across various weather conditions over time, and how to optimize rentals during these different weather scenarios?**

**[Click here to visualize data in Tableau Public]**

**Description:** This line chart compares the average bike rentals between casual and registered users from 2011 to 2012 across four weather conditions (Clear, Cloudy, Rainy, and Snowy). The lines for Casual users are blue, and the lines for registered users are yellow. The X-axis spans the period from 2011 to 2012 and the Y-axis shows the average number of bike rentals both user types.

**Key Insights:** Registered users consistently outrent casual users under all weather conditions. There are noticeable peaks in average rides during Clear and Cloudy weather conditions for both user types. Conversely, Snowy and Rainy conditions result in lowest rentals overall, indicating that rentals benefit from good weather conditions.

Over time, both user types show a growing trend in bike rentals across all weather conditions Indeed, the trend line, which shows the relationship between the year and the average number of bike rides reveals patterns. Registered users show an average increase of 0.17 rides per year, while casual users exhibit a smaller increase of 0.025 rides annually.

**Recommendations:**

1. **Registered users** exhibit higher rental rates; therefore, implementing **loyalty programs with tiered rewards or incentives**—such as discounted rides, exclusive events, or bonus credits—can further engage this user group. This strategy will enhance retention and encourage consistent rentals, particularly during adverse weather conditions.

2. To address the significant drop in rentals during Snowy and Rainy conditions, the company can adopt **a pricing strategy that offers lower rates** on forecasted rain or snow days. Additionally, **special deals such as Bundle Offers**—where users rent a bike and receive a free accessory like a rain poncho, bike lights, or a lock—can motivate users to rent even in less-than-ideal weather.

3. To attract **casual users** during adverse weather, the bike share company could launch a **"Casual Rider Program,"** offering first-time riders a discount on rentals during Snowy

and Rainy conditions. This program might also include free introductory rides for users who sign up for an account during these weather events.

**Business Question 3: How are biking patterns among casual and registered users related to temperature variations, and what strategies can be implemented to potentially increase rentals during specific temperature ranges?**

**[Click here to visualize data in Tableau Public]**

**Description and key insights:** This line chart shows the trend of average rides by temperature, with casual users in blue and registered users in orange. Across all temperatures, registered users consistently outnumber casual users. As temperatures rise, the average number of rides increases for both groups, with a noticeable peak at 40°C.

The trend lines confirm visual observations. For casual users, the equation suggests that for each degree increase in temperature, the average number of bike rides increases by approximately 6.2 rides. For Registered users, the equation suggests that for each degree increase in temperature, the average number of bike rides goes up by about 2.5 rides. This means warmer weather leads to more bike rentals.

**Recommendations:**

1. **Since registered users consistently outnumber casual users**, the company could introduce **promotional campaigns or discounts** during warmer temperatures to encourage more casual users to rent bikes, helping balance ridership across user types.

2. **Given the increase in bike rentals during warmer temperatures,** the company could consider **offering heat-related accessories** (e.g., water bottles, cooling towels) or **shade stations** during extreme heat to ensure rider comfort and safety, while maintaining high rental activity during hot days.

3. **With higher ride volumes during warmer temperatures, t**he company should also ensure an **adequate supply of bikes is available at popular stations**, especially during the hottest periods, to meet increased demand and avoid shortages.

This report provides valuable insights into bike share usage patterns over two years, distinguishing between casual and registered users across various timeframes, weather conditions, and temperature ranges. The findings highlight the key differences in user behavior, emphasizing that registered users dominate during weekdays, while casual users are more active on weekends. Weather and temperature also play significant roles in bike rental activity, with higher temperatures boosting ridership across both user types. These insights will help guide the company in developing targeted strategies to enhance user retention, optimize fleet availability, and increase engagement in various conditions.

**Immediate Next Steps for Leadership:**

Launch Targeted Promotions for Casual Users
Implement a Loyalty Program for Registered Users
Optimize Fleet Allocation Based on Temperature and Demand