

Project Name: Cyclistic Case Study

Objective: To increase the number of annual memberships by analyzing customer behavior and identifying key traits.

Method: Using the R programming language, a comprehensive customer behavior analysis was conducted. The analysis involved the following steps:

1. **Data Collection:** Relevant customer data, including trip history, user profiles, and bike preference data, was collected from Cyclistic's database.
2. **Data Cleaning:** The collected data was cleaned to ensure accuracy and consistency, removing any inconsistencies or outliers that could affect the analysis.
3. **Data Analysis:**
 - a. **User Centralization:** Spatial analysis was performed to identify the geographic concentration of different user types.
 - b. **Travel Patterns:** Route analysis, distance calculations, and trip duration analysis were carried out to understand user travel patterns.
 - c. **Time Analysis:** Temporal data was examined to determine the peak hours, days, and months for bike usage.
 - d. **Bike Preference Analysis:** User preferences for different bike types were assessed.
4. **Statistical Techniques:** Various statistical techniques and visualization tools in R and Tableau were utilized to draw meaningful insights from the data.

Key Findings:

1. **User Centralization:** Identified locations where different user types (casual and annual members) tend to centralize themselves.
2. **Travel Patterns:**
 - a. Determined the routes and areas where users frequently go.
 - b. Analyzed the distance covered in trips and the average trip duration.
3. **Time Analysis:**
 - a. Examined the time of day when users tend to travel.

- b. Identified the most active days and months of the year for bike usage.
- 4. **Bike Preference:**
 - a. Investigated user preferences for types of bikes.

Actionable Insights: Based on the analysis, actionable insights were developed to increase the number of annual members.

Certainly, you can add a section about what's missing from your analysis to provide context for potential future improvements. Here's how you can incorporate it:

What's Missing?:

While the analysis yielded valuable insights, there are some data elements that, if available, could provide even deeper and more comprehensive insights into customer behavior:

1. **Weather Data:** Incorporating weather-related information, such as temperature, precipitation, and weather conditions during bike trips, could help us understand how weather impacts user behavior. For example, it could shed light on whether users are more likely to use bikes during favorable weather conditions.
2. **Age of Users:** Analyzing the age distribution of users and their behavior could reveal trends or preferences specific to different age groups. This information could be valuable for tailoring marketing strategies to specific demographics.

Including these additional data elements in future analyses could further enhance our understanding of customer behavior and lead to more targeted marketing strategies.