TravelTide Reward Program Report

Introduction
To enhance customer loyalty and satisfaction, this project focused on developing a personalized travel rewards program for active users. Using user data, we found unique behavioral characteristics and recommended perks that align with each group's travel habits.

Objectives
The objective was to segment the customer base into meaningful groups based on similarity in behavior and preferences, then design perks that reflect each group's preferences and needs. These insights will structure and personalize the upcoming rewards program.

Methodology
The large dataset consists of four tables: sessions, user, hotel, and flight with over a million users. We used SQL to clean the data and prepare the tables for analysis. The analysis required the active users, who are described as having more than 7 sessions since January 4, 2023. This left 5,998 users eligible for analysis. User based and session based tables were created to filter for active users and query the columns relevant to the analysis.

Seven distinct customer groups were identified using parameters and a decision tree; Family, Business, Dreamers, Seniors, Frequent adults, Frequent young, and Others. Once the users were segmented, I used Tableau to create visuals that would uncover patterns or insights about the groups and their travel behaviors. Finding these unique patterns and behaviors allowed me to assign each segment a tailored perk.

User Groups and Perks
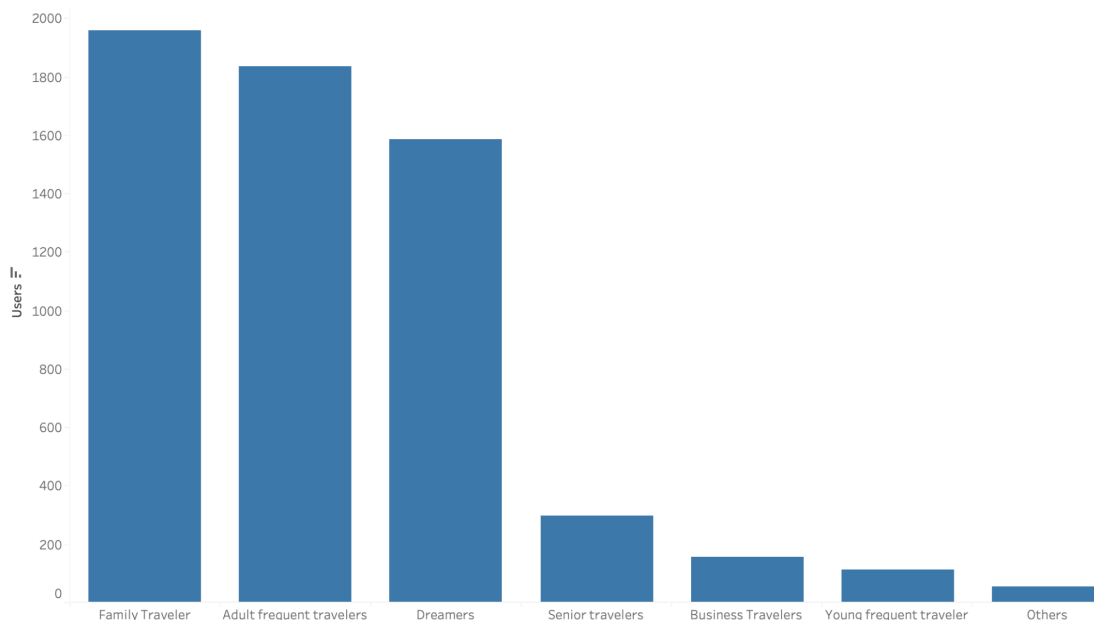
- **Family Travelers -** free checked bag
  - Criteria: Users with children
  - This group is the largest segment in the analysis. They often travel with family and have lots of luggage (high avg. bags). They also travel internationally, using more bags as well.
  - A free checked bag would reduce travel costs and stress for families, making them more likely to book with us.

- **Business Travelers** - Airport lounge access
  - Criteria: Users above 30 years old with more than 5 trips
  - This group travels very often for work but for a short duration, with an average trip length of 4.1 days. The employer usually reimburses the trip, so productivity and comfort are, instead, important.
  - Airport lounge access supports the need for a quiet, comfortable workspace. It is a premium perk a company may not reimburse.

- **Senior Travelers** - Free hotel meal
  - Criteria: Users above 60 years old
  - This group doesn't travel often but takes longer trips. An average of 6 days and 5.8 hotel nights. They spend lots of time in hotels.
  - A free hotel meal would enhance the travel experience and make TravelTide service senior-friendly and hospitable.

- **Dreamers** - Discount on first travel
  - Criteria: Users with less than 2 trip bookings
  - This group has the highest cancellation rate (14.8%) signifying they are interested in traveling but hesitant to commit. Many have multiple browsing sessions without booking.
  - A discount on their first trip would incentivize them to travel.

- **Young Frequent Travelers** - 1 free hotel night with flight
  - Criteria: Users who are below 30 yrs and have taken 2 to 5 trips
  - This group is highly active. They spend significantly on hotel expenses, averaging $2,813.
  - A free hotel night with a flight would increase money value, encouraging them to book more frequently.

- **Adult Frequent Travelers** - Free flight
  - Criteria: Users above 30 yrs who have taken 2 to 5 trips

- ○ This group has taken the most flights and trips overall, 11,851 and 6,822 respectively. They show strong booking consistency and consistent revenue.
  - ○ A free flight would serve as a high-impact reward for this high usage group, encouraging further booking.

- **Other Travelers -** Free seat upgrade
  - ○ Criteria: Users who did not fit into any of the other groups
  - ○ This group is the smallest in our analysis and consists of users with inconsistent travel behaviors
  - ○ A free seat upgrade is a universally appreciated benefit that enhances the experience without being a too costly perk.

Data Issues

One notable data quality issue identified during the analysis was negative hotel nights in the 'nights' column. This occurred in cases when the checkout time was earlier than the check in time, resulting in a negative duration. Upon inspection, this appeared to be caused by a default/placeholder value as the checkout timestamp. The checkout time placeholder value was the same day of the check in or the day before with a time of 11:00. This is likely due to incomplete or error data at the source.

	trip_id	nights	check_in_time	check_out_time
1	437-7723ec64e7174be4ad…	-1	2021-04-23 20:09:56.25	2021-04-23 11:00:00
2	258-ab0db9339da540fea78…	-1	2021-05-01 09:43:38.55	2021-04-30 11:00:00
3	106-c8e272e1051740babe…	-1	2021-04-30 12:12:10.485	2021-04-30 11:00:00
4	674-bf72f20d94744bacbdfc…	-1	2021-05-03 17:57:17.775	2021-05-03 11:00:00

This anomaly affected a small portion of the dataset, 12,067 rows, but critical to address because it could distort certain metrics important to analysis. To ensure data integrity, we converted all hotel night values below zero to 1.

Recommendations and Next Steps

It is recommended that the company implement a segmented rewards program that aligns perks with customer travel behaviors. Regular tracking of perk usage and customer feedback will enable optimization. Future analysis can help refine segments and identify shifts in travel behavior to ensure continued alignment between customer needs and the reward program.