TravelTide: Customer Insight

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Background

TravelTide, an e-booking startup has tasked us with analysing userdata they have provided. The goal is to find useful insights by data analysis that can help Traveltide in forming its reward program for user retention.

TravelTide has given us 5 perks they want to use in their rewards program:

- Free Hotel Meal
- Free Checked Bag
- Free Cancellation
- Exclusive Discounts
- One Night Free Hotel with Flight

Key Features

- Exploratory Data Analysis: insights into customer demographic, behaviour, preferences, and booking patterns.
- K-Means Clustering: applied K-Means clustering to segment customers into distinct groups.
- Optimal Cluster Count: determined the optimal number of clusters using the Elbow Plot and Silhouette Score.
- Perk Insights: analysis revealed which perks are most likely to appeal to specific customer segments.
- Recommendations: provide recommendations for TravelTide, including the possibility of a multi-level rewards program and perk combination.

Key Findings

The exploratory data analysis and K-means machine learning algorithm lead to finding 5 clusters of users. These were in turned linked with the 5 perks assigned by TravelTide.

The distribution per cluster is the following:
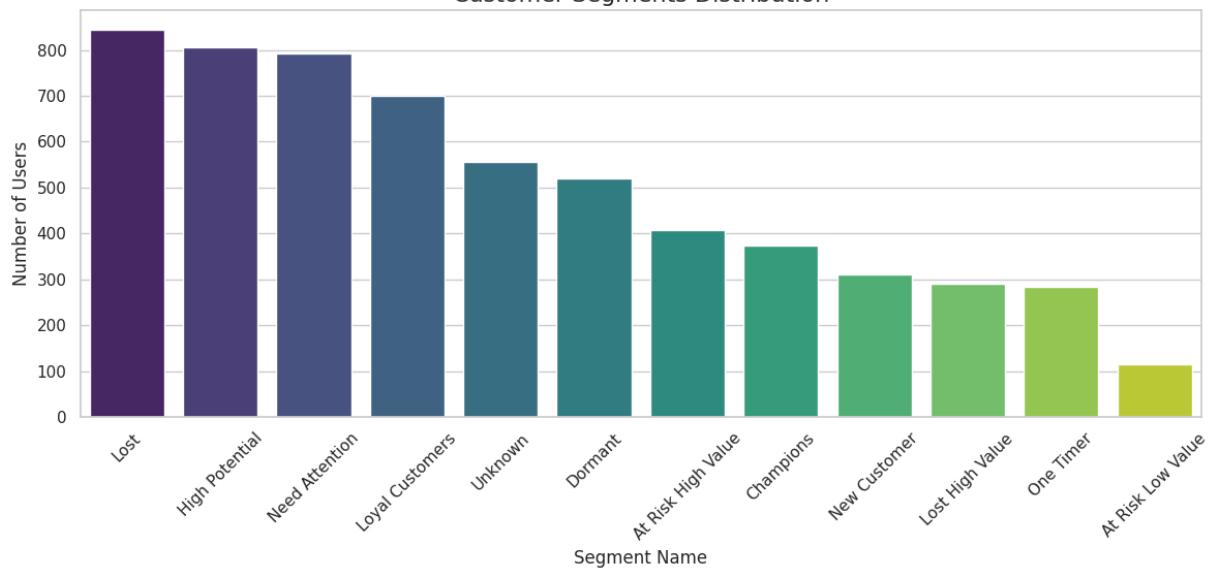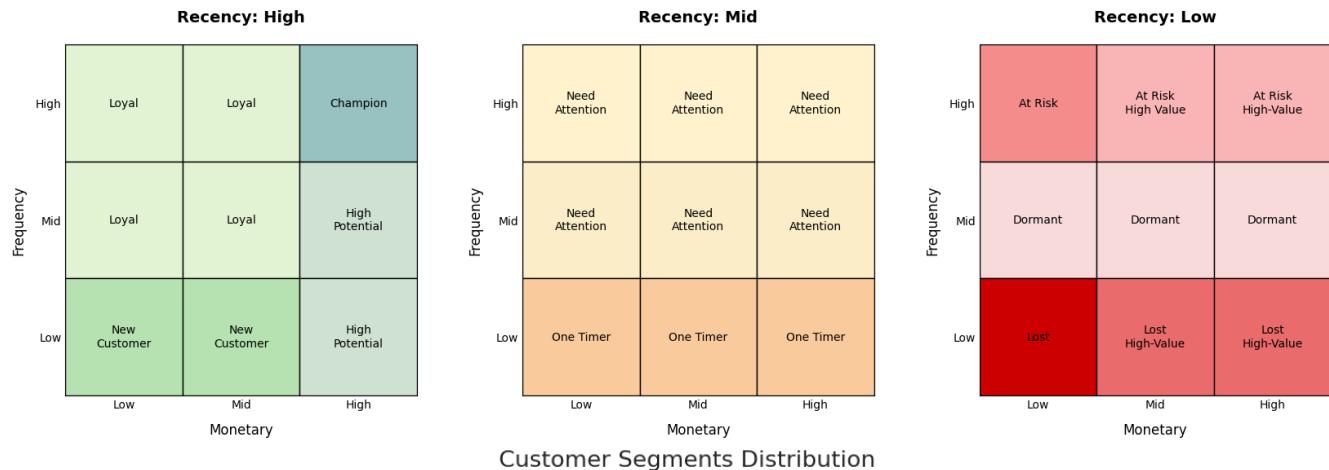
- **One Night Free Hotel With Flight (1,270 users):** This is the largest segment. These travelers favor short, infrequent trips, possibly for holidays or visiting family. This perk is designed to incentivize more frequent booking.
- **Free Checked Bag (1,165 users):** This segment shows a strong interest in saving money while checking bags. This perk offers a welcoming, money-saving deal.
- **Free Hotel Meal (1,088 users):** Characterized by very frequent bookings and short trips, likely for business. The perk offers convenient dining solutions for travelers with limited time.
- **Free Cancellation (973 users):** These users book long trips and many hotels. They benefit most from free cancellation due to their high volume of trips.
- **Exclusive Discounts (490 users):** The smallest segment. These users have the highest cancellation rates, indicating they do not mind paying fees if the initial discount is enticing enough.


Cluster Sizes — bar chart showing Number of Travelers per cluster: One Night Free Hotel With Flight, Free Checked Bag, Free Hotel Meal, Free Cancellation, Exclusive Discounts

Recommendations

To further enhance customer satisfaction and retention, we recommend a few other methods that might be helpful for TravelTide alongside the reward program, or to amplify it.

- **Multi-Leveled Rewards Program:** Implement a tiered system to cater to the diverse needs identified across all clusters. This plays to the fact that many different users had different spendings, frequency and recency as seen below.

- **Combining Perks:** Since several clusters show behavioral similarities, TravelTide should consider offering combinations of perks to increase engagement.
- **Feedback Mechanism:** Integrate a system to collect direct customer input, allowing for real-time program refinement. Further, it allows TravelTide to address some "unknown" factors found for some users.
- **Diversify Genders:** Target marketing strategies to ensure a more balanced and diverse customer base across genders, currently it is female dominated.
- **Domestic Flight Promotions:** Develop special promotions specifically for domestic travel to capitalize on high-frequency local travelers.