# Executive Summary

This analysis focuses on segmenting customers within TravelTide platform to better understand their preferences and behaviors.

We have employed three distinct segmentation methods:
   **a)** Perk-based segmentation
   **b)** Demographic segmentation
   **c)** K-means clustering

**Perk-Based Segmentation:**

We have identified five customer segments based on their likely preferences for perks offered by the platform:

1. **1 Night Free Hotel with Flight:**
   Customers who have booked both flights and hotels and have a total purchase above the average.
2. **Exclusive Discounts:**
   Customers who exhibit higher engagement (page clicks) and have received substantial discounts on either flights or hotels.
3. **Free Hotel Meal:**
   Customers who prioritize hotel bookings over flight bookings.
4. **Free Checked Bag:**
   Customers who frequently opt for checked bags during their travels.
5. **No Cancellation Fee:**
   Customers who do not strongly align with any of the above perks.

**Demographic Segmentation:**

We have segmented customers based on age group, gender, and whether they have children. This demographic segmentation allows for targeted marketing strategies:

- Teenage, Young Adult, Adult, Middle-Aged, Senior, and Elderly segments based on age groups.
- Family and Single segments based on the presence of children.
- Segmentation by gender, including Male, Female, and Others categories.

**K-means Clustering:**

K-means clustering, applied to behavioral metrics such as page clicks, discounts, and purchase amounts, has revealed five distinct clusters of customers:

**1.** Cluster 0: Customers who demonstrate high engagement and significant discounts.
**2.** Cluster 1: Customers with moderate engagement and moderate discounts.

**3.** Cluster 2:  Customers with low engagement and minimal discounts.
**4.** Cluster 3: Customers with high engagement but minimal discounts.
**5.** Cluster 4: Customers with moderate engagement but significant discounts.

**Key Insights:**

-Customers in the "Exclusive Discounts" segment exhibit higher page clicks, suggesting that discounts significantly drive engagement and interest.

- Within demographic segments, customers with children tend to prefer perks that enhance the family travel experience, such as "Free Checked Bag" or "Free Hotel Meal." Targeted family-oriented promotions can be designed for these segments.

-Gender Differences: Gender-based segmentation highlights variations in perk preferences. For example, males may be more interested in perks like "Exclusive Discounts," while females may prioritize perks related to family travel or added convenience.

-Engagement and Discounts: Cluster 0 and Cluster 3 in K-means clustering represent customers who exhibit high engagement but differ in their response to discounts. Understanding the reasons behind this difference can help tailor discount strategies more effectively.

-Cluster Interpretation: Cluster 4, characterized by moderate engagement and significant discounts, might represent a sweet spot for promotions. These customers have shown responsiveness to discounts without needing excessive engagement.

-Targeted Marketing: The clustering results enable the platform to create highly targeted marketing campaigns. For instance, Cluster 1, with moderate engagement and moderate discounts, may respond well to promotions that highlight a balanced offering.

These insights provide a deeper understanding of customer preferences, behaviors, and their interactions with perks and demographic characteristics. Leveraging these insights can help the platform optimize its marketing efforts, enhance customer experiences, and drive revenue growth.

**Recommendations:**

1. Tailor perk-based offers for each segment to maximize customer engagement.
2. Craft marketing strategies that align with the preferences of demographic segments.
3. Continuously monitor and adapt strategies based on customer behavior and feedback.

This multi-faceted segmentation approach enables us to better understand customers, ultimately leading to more personalized and effective marketing efforts, improved customer satisfaction, and increased revenue.