

# Executive Summary: TravelTide Rewards Personalization Strategy

## Challenge

TravelTide, an e-booking platform known for its extensive inventory, faces high customer churn due to an underdeveloped post-booking customer experience. The Head of Marketing, Elena Tarrant, requires a data-backed customer segmentation model to personalize the launch of a new rewards program, moving away from generic marketing to targeted perk invitations.

## Methodology & Findings

The project followed a **detailed** analytical pipeline, documented in the (combined) traveltide-segmentation-analysis (3).ipynb notebook:

1. **Data Curation:** Raw data was filtered to include only active users (those with `$age` 7\$ sessions and activity post-2023-01-04), resulting in **5,998 users**.
2. **Feature Engineering:** Core behavioral metrics were calculated, including session and booking frequency, **Spend Segment** (Budget, Mid-Range, Premium), **Age Group**, and the binary feature `has_children`.
  - o **Crucial Engagement Insight:** Users who successfully converted to a booking had a median of **22.0 page clicks**, significantly higher than non-bookers, who averaged just **8.0 clicks**. This confirms engagement as the strongest predictor of conversion.
3. **Model Selection:** An Unsupervised ML approach (K-Means on PCA-reduced data) was attempted but discarded. Although the Silhouette Score peaked at K=5 (0.525), the resulting clusters lacked clear, mutually exclusive business characteristics.
4. **Final Approach: A Manual Hierarchical Segmentation** was adopted, prioritizing features based on clear business impact observed during EDA (e.g., family travel, age, and spend).

# Key Segments & Strategic Recommendations

The analysis resulted in six highly actionable customer segments, enabling precise reward program personalization.

Segment	% of Base	Core Profile & Strategic Focus	Proposed Reward Perk
<b>Family Market</b>	<b>22.17%</b>	Users prioritizing convenience and large-capacity stays. <b>Focus:</b> <b>Retention &amp; Upsell on bundles.</b>	Priority Booking, Free Checked Bags
<b>Premium High Engaged Other</b>	<b>19.67%</b>	Non-Core ages (e.g., 50-64) but high activity and premium spend. <b>Focus: Loyalty &amp; Exclusivity.</b>	Premium Lounge Access, Status Upgrades
<b>Mid-Ranged High Engaged Core</b>	<b>18.34%</b>	The most reliable, transactionally active 35-49 age group. <b>Focus:</b> <b>Value Maximization.</b>	Points Multiplier on Core Bookings
<b>Price Sensitive Buyer</b>	<b>14.49%</b>	<b>Budget-focused users showing high engagement.</b> The primary target for tactical risk management.	<b>Free Cancellation</b>
<b>Mid-Ranged High Engaged Other</b>	<b>14.95%</b>	Active users outside the core age group, focusing on value. <b>Focus: Sustained Frequency.</b>	Discount Codes, Flash Sales

<b>Premium High Engaged Core</b>	<b>10.37%</b>	The highest-value, most loyal customer group (35-49). <b>Focus: Advocacy &amp; Service.</b>	Dedicated Concierge, Service Vouchers
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## Conclusion

The data confirms that behavioral segmentation provides a powerful lever for the rewards program launch. Future marketing efforts must abandon the generic approach and leverage these six distinct segment profiles to tailor the rewards message, ensuring maximum sign-up conversion and sustained customer retention.