

Exploratory Data Analysis (EDA) & Business Insights – Rough Draft

Objective: Enhancing Customer Retention through Segmentation

- **Goal:** The primary objective is to segment TravelTide's customer base according to their behavior in order to help design a personalized rewards program aimed at improving customer retention.
 - **Outcome:** Our analysis will provide actionable insights that Elena can leverage to implement a more effective rewards program, which will directly support TravelTide's retention strategy.
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1. Data Cleaning & Filtering: Preparing for Insightful Analysis

- **Task:** The first step was to clean and validate the session-level data to ensure that any insights derived from it are accurate and reliable.
 - **Approach:**
 - We excluded irrelevant sessions, such as those with zero duration or minimal activity.
 - We handled missing values and ensured correct mapping between sessions and users.
 - We defined criteria for what constitutes a valid session, with a minimum of 2 page clicks being a threshold for meaningful engagement.
 - **Reasoning:** Cleaning the data ensures that subsequent analysis is based on valid, actionable user behaviors. This is essential for generating meaningful segments and building effective strategies for retention.
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2. Session-Level Insights: Understanding Customer Interactions

- **Key Metrics to Analyze:**
 - **Session Duration & Page Clicks:** These metrics help measure user engagement during their sessions on the platform.
 - **Booking Behavior:** Whether users complete flight and hotel bookings, which reflects their intent and purchasing power.
 - **Cancellation Trends:** Identifying users who tend to cancel bookings frequently can help target at-risk customers.
 - **Importance:** These metrics give us a clear view of user activity and engagement levels, helping to isolate customer segments that may benefit from different rewards offerings.
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3. User-Level Insights: Building Customer Profiles

- **Metrics Developed to Understand Users:**
 - **Total Sessions per User:** Measures how often a user returns to the platform.
 - **Average Session Duration:** Reflects user interest and potential loyalty.
 - **Total Page Clicks:** Gives insight into how engaged users are with the platform's content.
 - **Booking Behavior:** Shows whether users make purchases or if they only browse.
 - **Cancellation Frequency:** Identifies users who might be more likely to churn.
 - **Rationale:** By aggregating session data at the user level, we can better understand individual customer behaviors and design segments based on these characteristics. This step is crucial for designing personalized rewards.
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4. Customer Personas & Demographics: Tailoring Rewards to Needs

We grouped customers into distinct personas based on their behaviors and preferences, enabling us to tailor rewards more effectively:

Frequent Travelers (High-Value Customers)

- **Profile:** Regular business travelers, frequent vacationers, or digital nomads who travel often.
- **Behavior:** High engagement with bookings, loyalty programs, and the platform.
- **Metrics:**
 - Monthly bookings
 - Average spend per trip
 - Loyalty program engagement
- **Rewards Strategy:**
 - Tiered loyalty points
 - Complimentary perks for frequent users (e.g., airport lounge access)
 - Priority customer service

Deal Seekers (Price-Sensitive Customers)

- **Profile:** Budget-conscious customers, students, and occasional vacationers who are motivated by discounts and deals.
- **Behavior:** Engages frequently with promotions but may not always convert.
- **Metrics:**
 - Discount engagement rate
 - Conversion rate from deal pages
 - Cart abandonment rate
- **Rewards Strategy:**

- Early access to deals
- Discount offers for early bookings
- Personalized price alerts for deals on preferred destinations

High-Risk Churn Users (Frequent Cancellers & Low Engagement)

- **Profile:** Customers who cancel bookings frequently or show low platform engagement.
- **Behavior:** High cancellation rate, infrequent bookings, and low session engagement.
- **Metrics:**
 - Cancellation rate
 - Time since last booking
 - Customer support engagement
- **Rewards Strategy:**
 - Flexible cancellation policies for loyal customers
 - Special re-engagement offers (e.g., discounts on the next booking)
 - Proactive customer service

Last-Minute Bookers (Spontaneous Travelers)

- **Profile:** Customers who tend to book last-minute trips, often motivated by spontaneous leisure or business needs.
- **Behavior:** Quick decision-making, high conversion rate, but often minimal planning.
- **Metrics:**
 - Last-minute booking percentage
 - Booking-to-travel time window
 - Same-day booking conversion rate
- **Rewards Strategy:**
 - Fast-track booking features
 - Last-minute hotel deals
 - Push notifications for exclusive last-minute offers

5. Feature Engineering: Creating Metrics for Effective Segmentation

- **Key Features Developed:**
 - **Booking Frequency & Preferences:** Insights into how often users book and their preferred destinations.
 - **Engagement Metrics:** Including average session duration, page clicks, and promotional engagement.
 - **Cancellation Patterns:** To help us identify customers likely to churn and design interventions for them.
- **Why This Matters:** These engineered features provide the basis for meaningful customer segmentation. By creating more granular metrics, we can effectively group customers for targeted marketing strategies.

6. Next Steps: Implementing Segmentation to Drive Retention

1. **Segment Users:** Using the metrics derived above, categorize users into relevant groups (e.g., frequent travelers, deal seekers, last-minute bookers).
2. **Design Personalized Rewards:** Tailor rewards for each group based on their behaviors. For example, emphasize free cancellation for last-minute bookers or offer loyalty points for frequent travelers.
3. **Monitor & Optimize:** Track the effectiveness of the rewards program through key performance indicators like retention rate and customer engagement with the rewards.
4. **Iterate:** Continuously refine the segmentation and rewards offering based on customer feedback and evolving behavior.

Conclusion: This segmentation strategy will enable Elena and the TravelTide team to launch a personalized rewards program that will increase customer retention and engagement. By analyzing customer behavior at both the session and user levels, we can create a more targeted and effective marketing strategy for TravelTide.