

Beachfront Hotel Marketing Analytics Project

Submitted to: Professor Anjuman Antil

Presented By:

Chatchanok Chatchaiyaroek - 48437161

Submission Date: 10th February 2025

University of Europe for Applied Sciences

Marketing Analytics

Winter Semester 2024

Potsdam, Germany

Introduction

In today's data-driven world, businesses across all sectors rely on analytics to make informed decisions, enhance customer experiences, and achieve competitive advantages. This report explores various marketing analytics techniques and tools to address specific business needs, enabling organizations to understand their customers, optimize their offerings, and refine their strategies. By simulating real-world scenarios and leveraging artificial data and advanced analytics platforms, this project provides actionable insights and practical applications for a diverse range of business challenges.

The report is structured into distinct components, each focusing on a unique aspect of marketing analytics:

- 1. **Customer Segmentation**: Understanding customer behavior is pivotal for effective targeting and personalization. By generating artificial customer data and applying segmentation techniques, businesses can identify unique customer groups and craft tailored marketing strategies.
- 2. **Conjoint Analysis**: Analyzing customer preferences for various product or service attributes allows businesses to design offerings that align with customer needs, improving satisfaction and profitability.
- 3. **Google Analytics**: Web analytics tools, such as Google Analytics, provide deep insights into user behavior, acquisition sources, and conversion patterns, helping businesses optimize their digital presence.
- 4. **Keywords & Social Media Marketing**: Long-tail keywords and social media campaigns play a crucial role in attracting and engaging target audiences. This section highlights the process of identifying relevant keywords and designing compelling social media ads.
- 5. **Tableau Dashboards**: Visual analytics enable businesses to present complex data in an accessible and intuitive format, facilitating better decision-making.

Each section of this report uses industry-standard tools like R, Google Analytics, Semrush and Tableau to implement these techniques effectively. By applying these methods, businesses can uncover valuable insights and translate them into impactful strategies.

This report aims to serve as a comprehensive guide to address real-world business challenges and capitalize on opportunities in the competitive marketplace.

About business



'Sea Sand Sun Beachfront hotel' located along the pristine coastline of Phuket, Thailand. Nestled between the crystal-clear waters of the Andaman Sea and lush tropical landscapes, the resort offers an idyllic escape for travellers seeking both relaxation and adventure. Whether you're planning a romantic getaway, a family vacation, or a corporate retreat, Sea Sand Sun provides the perfect blend of luxury, comfort, and exceptional service.

The resort boasts a wide range of amenities, including spacious and elegantly designed rooms with stunning sea views, a rejuvenating spa offering traditional Thai massages. Guests can indulge in activities such as water sports and explore the nearby vibrant cultural and natural attractions that Phuket has to offer.

1. Customer Segmentation

1.1. Data Generation Process

For the customer segmentation, we generated synthetic data for 500 customers, which included the following attributes:

CustomerID:

• **Range**: 1 to 500

• **Description**: A unique identifier assigned to each customer in the dataset. This helps in tracking individual customers without revealing any personal information. Customer IDs are used to differentiate between all 500 customers in the data.

Age:

• **Range**: 18 to 70 years

• **Description**: The age of the customer, which is generated randomly between 18 and 70. Age can be a key factor when analyzing customer preferences, as younger customers may have different travel behaviors compared to older guests.

HotelExpense:

• Range: 100 to 1000 (currency unit)

• **Description**: The amount of money a customer spends at the hotel. This could cover accommodation, dining, activities, or spa services. The values are randomly assigned between 100 and 1000, reflecting a diverse range of customer spending habits.

TravelFrequency:

- Categories: Rarely, Occasionally, Frequently
- **Description**: Indicates how often a customer travels. This attribute is divided into three categories:
 - o **Rarely** (30% of customers): Customers who travel infrequently, likely once or twice a year.
 - o **Occasionally** (50% of customers): Customers who travel a few times a year.
 - **Frequently** (20% of customers): Customers who travel often, several times a year.

PreferredActivity:

- Categories: Surfing, Relaxing, Family Time, Adventure Sports
- **Description**: Represents the type of activity the customer prefers while staying at the resort. The options include:

Surfing: Customers who prefer water-based activities, often looking for a more adventurous experience.

Relaxing: Customers who prefer a calm and peaceful stay, such as lounging by the pool or enjoying spa services.

Family Time: Customers who focus on spending quality time with family, typically requiring family-friendly activities and facilities.

Adventure Sports: Customers looking for an active vacation, seeking activities like hiking, zip-lining, or extreme sports.

RoomPreference:

- Categories: Standard, Deluxe, Suite
- **Description**: The type of room that a customer prefers. The room options include:

Standard (40% of customers): The most basic and affordable room option.

Deluxe (40% of customers): A mid-range room offering better amenities and comfort.

Suite (20% of customers): A high-end, luxury room with extra space and premium features.

StayDuration:

- **Range**: 1 to 14 nights
- **Description**: The length of stay at the resort, randomly assigned between 1 and 14 nights. The duration can vary depending on customer preferences, trip purposes, and available vacation time.

	CustomerID	Age	HotelExpense	TravelFrequency	PreferredActivity	RoomPreference	StayDuration
	<int></int>	< <i>int></i>	<int></int>	<chr></chr>	<chr></chr>	<chr></chr>	<int></int>
L	1	48	340	Occasionally	Adventure Sports	Standard	10
2	2	32	123	Occasionally	Relaxing	Standard	2
3	3	68	778	Frequently	Family Time	Deluxe	3
1	4	31	658	Rarely	Adventure Sports	Suite	13
5	5	20	802	Rarely	Family Time	Standard	7
õ	6	59	136	Frequently	Relaxing	Deluxe	13

(Examples of generated data)

1.2. Segmentation Technique and Results

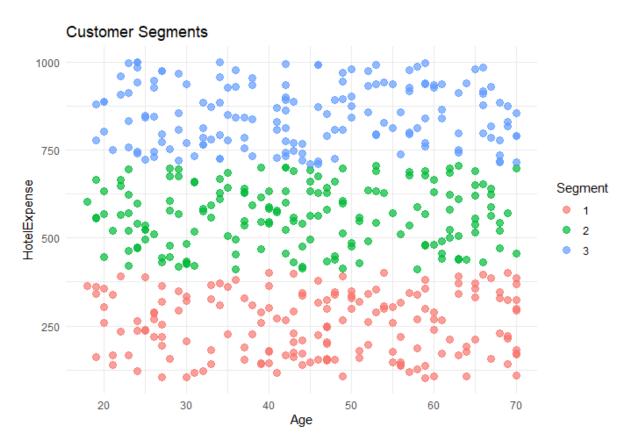
We used the K-means clustering algorithm to segment the customers based on their purchase frequency, average spend, and preferred product category. K-means clustering helps in partitioning the customers into distinct segments that share similar characteristics.

The process involved:

- Normalizing the data to ensure each attribute contributed equally to the distance calculation.
- Applying the K-means algorithm with 3 clusters.
- Assigning each customer to one of the three segments based on the clustering results.

Visualizations and Interpretation

The visualizations below illustrate the segmentation results. Each customer is plotted based on their purchase frequency and average spend, with colors indicating the assigned segments.



Cluster Characteristics

The clusters represent customer segments based on their **Age** (x-axis) and **Hotel Expense** (y-axis). Here's a general description of each cluster:

1. Segment 1 (Red):

Age Range: Predominantly younger customers, roughly between 20–40 years old

Hotel Expense: Low hotel expenses, concentrated between \$100-\$400.

Insight: Likely budget-conscious travelers, possibly younger individuals or those traveling for shorter durations.

2. Segment 2 (Green):

Age Range: Middle-aged customers, roughly between 30–60 years old.

Hotel Expense: Moderate hotel expenses, typically ranging from \$400-\$700.

Insight: This segment might represent families or individuals seeking balanced value in their hotel stays, spending moderately on their trips.

3. Segment 3 (Blue):

Age Range: Older customers, roughly **50–70 years old**, but includes some younger individuals.

Hotel Expense: High hotel expenses, concentrated between \$700-\$1,000.

Insight: These are likely luxury travelers or individuals with higher disposable income, prioritizing premium hotel services.

Potential Business Implications

1. Segment 1 (Red):

Focus on budget-friendly packages, discounts, or promotions for younger travelers.

2. Segment 2 (Green):

Offer family-oriented services or mid-tier room options.

Provide loyalty programs to encourage repeat visits.

3. Segment 3 (Blue):

Highlight luxury amenities, exclusive packages, and personalized services.

Cater to premium customers with concierge-level services.

2. Conjoint Analysis

Conjoint analysis is a powerful statistical technique used to understand customer preferences by evaluating how they value different attributes of a product or service. In this case, the goal is to analyze how customers perceive different combinations of hotel attributes (room type, meal plan, activity, and price) and how these combinations influence their decisions.

We simulated a dataset with 1,200 customer preferences for different hotel attributes:

1. Room Type

- **PoolView**: A room with a view of the pool, ideal for guests who prefer a relaxing view of the hotel's pool area.
- **OceanFront**: A premium room with a direct view of the ocean, which is likely to attract guests who value a scenic beachside experience.

2. Meal Plan

- **Breakfast**: Only breakfast is included, offering guests flexibility with their other meals.
- **FullBoard**: Includes all three meals (breakfast, lunch, and dinner), catering to guests who want a more all-inclusive experience.

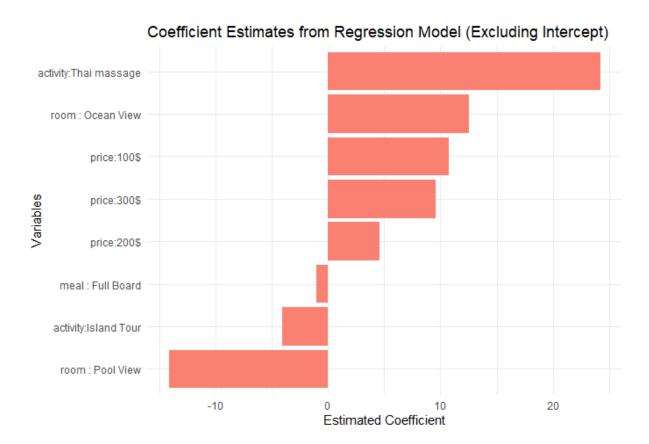
3. Activity

- **NoActivity**: No additional activities included, providing guests with the freedom to explore on their own.
- **Thai Massage**: A traditional Thai massage, appealing to guests seeking relaxation and wellness experiences.
- **Island Tour**: A guided island tour, ideal for guests looking to explore the local area and attractions.

4. Price

- \$100: A budget option, likely to attract cost-conscious customers.
- \$200: A mid-range price point, appealing to guests seeking a balance between affordability and luxury.
- \$300: A high-end price, targeting customers who are willing to pay more for premium experiences.

Interpret Results:



Positive Coefficients:

1. Activity: Thai Massage (highest positive impact)

Offering Thai massages is the most influential positive attribute, significantly increasing consumer preference.

2. Room: Ocean View

An ocean view room also has a strong positive impact, suggesting it's highly valued by customers.

3. Price:

The coefficients for different price levels (e.g., \$100, \$200, \$300) show that customers prefer lower prices, as seen by the higher coefficient for \$100 compared to \$200 or \$300.

Negative Coefficients:

1. Room: Pool View (largest negative impact)

Having a pool view room is associated with the largest negative impact on customer preference, suggesting that it is less attractive compared to other options.

2. Activity: Island Tour

The Island Tour activity negatively affects customer preference, indicating it's less desirable than other activity options.

Neutral or Minimal Impact:

Meal: Full Board

The "Full Board" meal option has a minimal effect, suggesting it's not a strong differentiator in customer preferences.

Summary:

- To attract customers, we should prioritize offering Thai massages, ocean-view rooms, and competitive pricing (\$100 is the most appealing price point).
- Pool view rooms and Island Tours should be reconsidered or de-emphasized as they have negative impacts on customer preferences.
- Meal plans like "Full Board" don't significantly influence decisions and may be secondary considerations.

Marketing strategies

1. Focus on High-Impact Attributes in Promotions

• Promote Thai Massage as a Highlight:

Since "Thai Massage" is the most preferred attribute, emphasize this in marketing campaigns

Bundle Thai massages with other offerings (e.g., discounts for those booking multiple nights).

• Highlight Ocean View Rooms:

Showcase the beauty of ocean-facing rooms in advertising materials (e.g., website, brochures, social media).

Use visuals, testimonials, and phrases like "Wake Up to Stunning Ocean Views."

2. Optimize Pricing Strategies

• Tiered Pricing Model:

Since lower prices (e.g., \$100) are more preferred, target price-sensitive customers during low seasons with discounts.

For higher price tiers (\$200-\$300), include value-added services like free Thai massages or meal upgrades to offset negative preferences.

• Dynamic Pricing:

Introduce pricing that fluctuates based on demand but ensures value for higher-tier prices (e.g., price \$300 includes Ocean View + Thai Massage).

3. Deprioritize Pool View Rooms

• Repurpose or Upsell Pool View Rooms:

Since "Room: Pool View" has a negative coefficient, avoid actively marketing these rooms.

Add incentives like discounts, free breakfast, or spa vouchers to make these rooms more attractive.

Position them as budget-friendly alternatives for less price-sensitive customers.

4. Customize Packages Based on Preferences

• Activity-Based Packages:

Create packages centered on Thai massages and Ocean Views. For example:

- "Luxury Relaxation Package" (Ocean View + Thai Massage + Full Board).
- "Romantic Getaway" (Ocean View + Thai Massage + Dinner at Sunset).

• Avoid Island Tours in Key Packages:

Since Island Tours are less preferred, offer them as optional add-ons rather than part of core packages.

5. Enhance Meal Plans as Upsells

• Full Board Options:

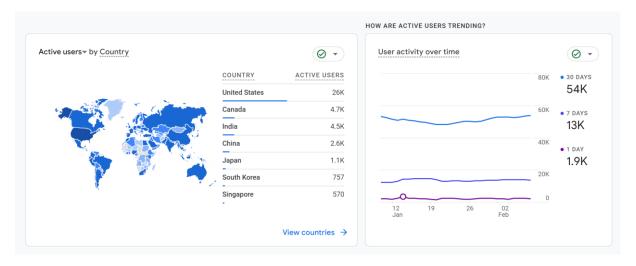
While "Meal: Full Board" has a modest positive effect, use it as an upsell opportunity:

• "Upgrade to Full Board for Just \$X and Enjoy Unlimited Dining."

Include full board in premium packages to further differentiate offerings.

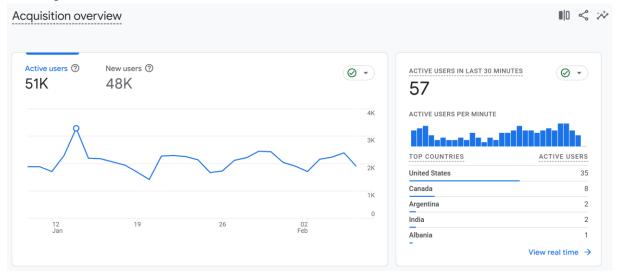
3.Google Analytics Report

3.1.Demographic



- **US Dominance:** The United States has significantly more active users than any other country listed. This suggests a strong market presence and user base in the US.
- **Varying User Engagement:** The different values for 30-day, 7-day, and 1-day active users indicate varying levels of user engagement over different timeframes. Analyzing these trends can reveal patterns and potential areas for improvement.
- **Potential for Growth:** While the US dominates, there's a considerable user base in other countries as well. This suggests potential for growth and expansion in those markets.
- User Activity Trends: Analyzing the user activity over time graph can reveal trends and patterns. Are there specific days or periods where user activity spikes or declines? Understanding these trends can help optimize strategies.

3.2. Acquisition overview



1. Active and New Users Comparison:

The number of new users (48K) is almost as high as the total active users (51K), suggesting that most visitors during this period are new. This could indicate:

- Effective marketing efforts attracting first-time visitors.
- Potentially limited returning visitor engagement (consider strategies to retain users).

2. Daily Trends:

The sharp peak on January 12 likely corresponds to a specific event, campaign, or promotion that attracted a large number of users.

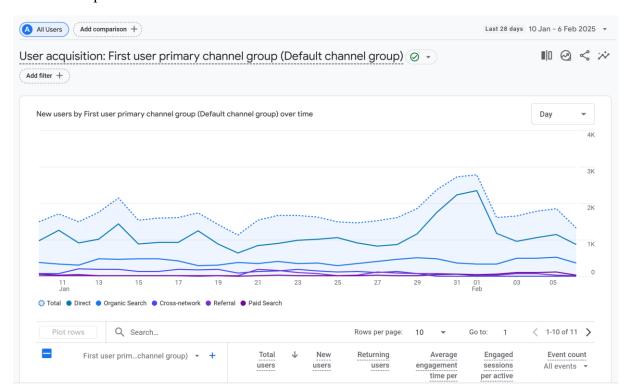
The gradual stabilization afterward suggests typical, steady traffic with no major promotions during the remainder of the period.

3. Real-Time Activity:

The United States dominates real-time traffic, making up more than 60% of users in the last 30 minutes. This might indicate the primary audience is US-based.

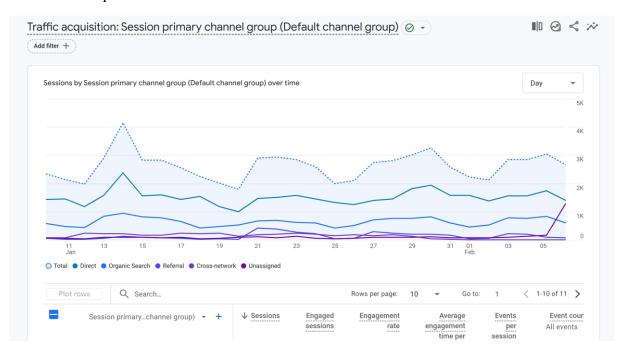
A smaller presence from countries like Canada and India suggests untapped potential in those regions.

3.3. User Acquisition



- 1. **Organic Search is the top-performing channel**, consistently bringing in the highest number of new users. This indicates strong SEO performance and suggests that the website ranks well for relevant keywords.
- 2. The spike in traffic on January 31, 2025 suggests a successful marketing effort, possibly targeting Organic Search and Direct channels. This could be due to:
 - o A special campaign (e.g., sale or product launch).
 - o Seasonal demand (e.g., end-of-month activity).
- 3. Other channels like Referral and Paid Search underperform. This may indicate:
 - o Limited efforts in referral partnerships or paid advertising.
 - o A need to optimize campaigns in these areas.
- 4. Engagement metrics (not shown in detail but summarized below the chart):
 - Review these metrics to ensure that the quality of users (especially from Organic Search and Direct) aligns with business goals.

3.4. Traffic Acquisition



1. Organic Search Dominates:

Organic Search continues to be the strongest channel for driving sessions, suggesting successful SEO efforts.

The peak in Organic Search sessions aligns with the previous chart's spike on **January 31**, **2025**, indicating a campaign or event optimized for search engines.

2. Direct Traffic's Role:

Direct traffic consistently contributes a steady number of sessions. This could indicate a strong brand presence or frequent repeat visitors.

3. Low Referral and Cross-Network Traffic:

Referral and Cross-network channels show limited impact, highlighting potential underutilization of referral programs or ad campaigns.

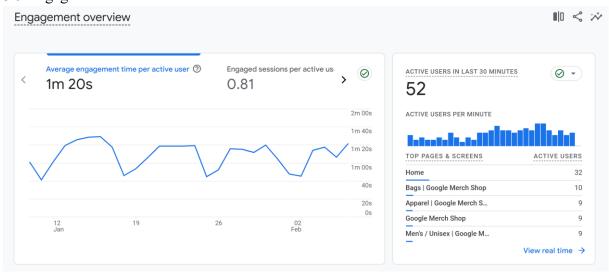
4. Session Engagement:

The engagement metrics below the chart can help analyze the **quality** of traffic. High engagement rates and average engagement time are indicators of user interest and satisfaction with the site's content.

5. Unassigned Traffic:

A small portion of traffic is categorized as "Unassigned," meaning it couldn't be attributed to a known channel. This may require further analysis to ensure proper tracking setup.

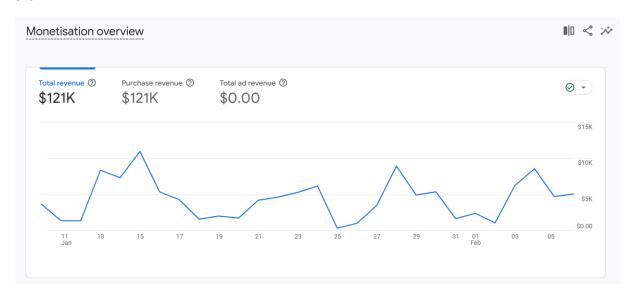
3.5. Engagement Overview



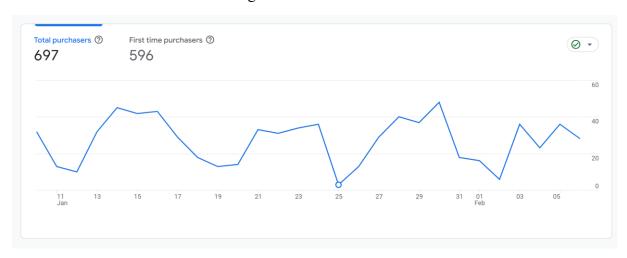
- Engagement Time: An average engagement time of 1 minute 20 seconds might be good or bad depending on the type of website or app you have. For example, for a content-driven site with articles, this could be low if articles are long. For a quick-service site, this might be sufficient.
- Low Session Count: The "Engaged sessions per active user" being less than 1 suggests that users aren't returning frequently within the analyzed timeframe. You may want to investigate why users aren't returning and consider strategies to increase user loyalty.
- Real-Time Activity: Monitoring the "Active Users in Last 30 Minutes" and "Active Users per Minute" can help you understand trends and the impact of specific events (e.g., marketing campaigns, new content releases).

• **Top Pages:** The "Top Pages & Screens" data reveals what content is currently resonating with your audience. You can leverage this information to optimize underperforming pages or create more content around popular topics.

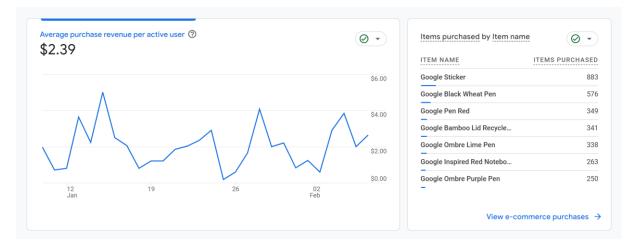
3.6. Monitisation Overview



- Consistent Revenue Stream: The graph shows a relatively consistent revenue stream with some fluctuations. This suggests a stable business model, but further analysis is needed to understand the drivers behind the fluctuations.
- **No Ad Revenue:** The complete absence of ad revenue might indicate that the platform doesn't utilize ads as a monetization strategy, or perhaps there were no ad impressions or clicks during this period.
- **Purchase-Driven Business:** The fact that all revenue is purchase revenue suggests a business model reliant on direct sales (e.g., e-commerce, subscriptions, digital goods).
- **Potential for Growth:** While the revenue is consistent, there's always potential for growth. Analyzing the peaks and valleys in the graph can provide insights into what drives sales and inform strategies to increase revenue.



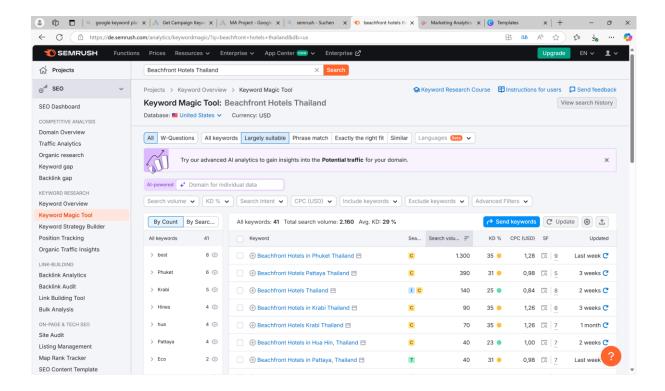
- **High Proportion of New Customers:** A significant portion of total purchasers (596 out of 697) are first-time buyers. This suggests a successful customer acquisition strategy during this period.
- Fluctuations in Daily Purchases: The graph shows daily variations in both total and first-time purchases. Analyzing these fluctuations can provide insights into what drives sales (e.g., marketing campaigns, promotions, day of the week).
- **Potential for Customer Retention:** While acquiring new customers is important, it's crucial to focus on retention. The high number of first-time purchasers indicates a need for strategies to convert them into repeat customers.
- **Growth Trend:** While there are fluctuations, there appears to be a general upward trend in total purchasers, especially towards the end of the period. This could indicate the effectiveness of ongoing strategies or seasonal factors.



- Fluctuating Revenue: The graph shows fluctuations in average purchase revenue per user, suggesting varying levels of spending over time. Analyzing the peaks and valleys can provide insights into what drives user spending.
- **Product Preferences:** The "Items Purchased by Item Name" data reveals clear product preferences. Stickers and pens are particularly popular, followed by other stationery items.
- **Potential for Upselling/Cross-selling:** Understanding product preferences can inform upselling and cross-selling strategies. For example, suggesting related items or offering bundles.
- **Marketing Opportunities:** The data can be used to tailor marketing efforts and promotions based on popular products and user behavior.

4. Keywords & Social Media Marketing

- 4.1. Using keyword research tools Semrush
- 4.1.1. Keyword Context: "Beachfront hotel Thailand"



All Keywords: 41

SEMrush has identified 41 keywords related to "beachfront hotel Thailand."

Total Search Volume: 2,160

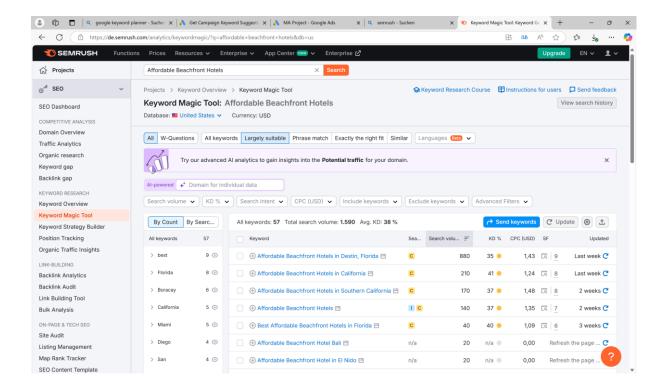
These 41 keywords collectively have a search volume of 2,160, reflecting strong demand for beachfront accommodations in Thailand.

 While the keyword pool is smaller than "Spa hotel Thailand," it has a higher average search volume per keyword.

Average Keyword Difficulty (KD): 29%

An average KD of 29% suggests these keywords are relatively easy to rank for.

4.1.2. Keyword Context: "Affordable beachfront hotels"



All Keywords: 57

There are 57 related keywords that SEMrush has identified, encompassing variations and subtopics around "affordable beachfront hotels."

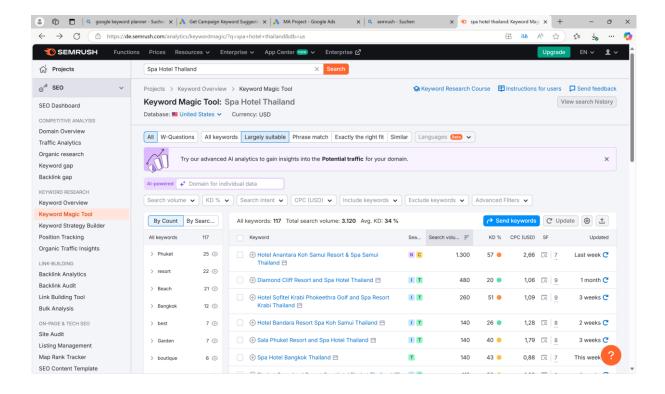
Total Search Volume: 1,590

This indicates moderate interest in the topic, providing a good opportunity to capture a niche audience.

Average Keyword Difficulty (KD): 38%

The average KD of 38% suggests moderate competition for ranking.

4.1.3. Keyword Context: "Spa hotel Thailand"



All Keywords: 117

SEMrush has identified 117 keywords related to "spa hotel Thailand."

These likely include variations like "luxury spa hotels in Thailand," "affordable spa resorts in Thailand," or "spa retreat Thailand."

Total Search Volume: 3,120

• What It Means: The combined monthly search volume for these 117 keywords is 3,120. This represents significant interest in spa hotels in Thailand.

Average Keyword Difficulty (KD): 34%

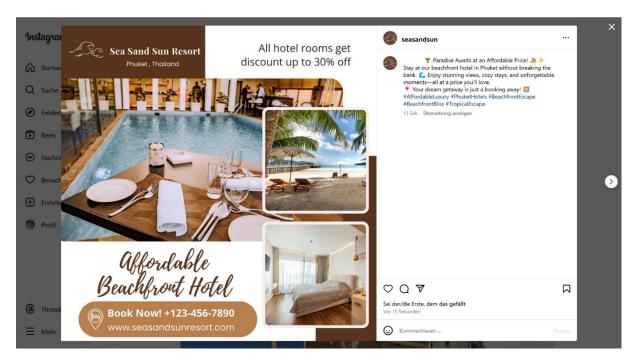
The average KD of 34% indicates that the competition is moderate. It's achievable to rank for many of these keywords with proper SEO strategies.

4.2. Social media ads design for Instagram

4.2.1.Ads design for instagram story

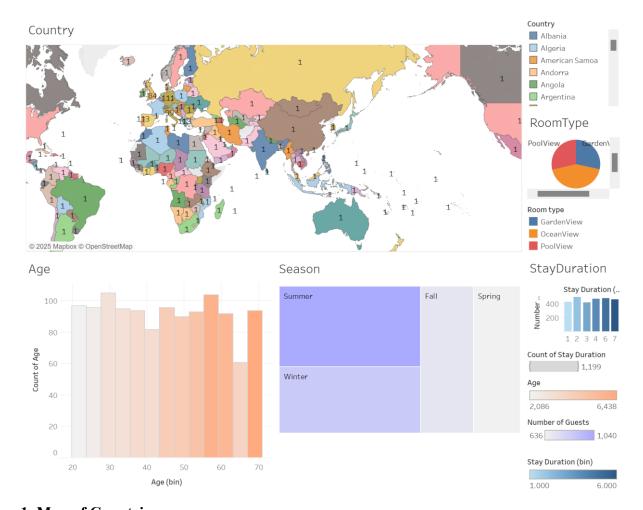


4.2.2.Ads design for Instagram post



This ad effectively combines stunning visuals, a strong offer, and clear CTAs to attract potential guests. It successfully conveys the resort's appeal as a budget-friendly yet luxurious beachfront destination. With minor tweaks like social proof or urgency, it could further enhance conversion rates.

5.Visualisation using Tableau



1. Map of Countries

• **Purpose**: Displays the distribution of guests by their countries of origin.

• Features:

Each country is shaded and labeled with the number of guests from that country.

Countries with a higher count have prominent labels (e.g., "11" for one country indicates the highest number of guests).

• **Insight**: This map helps identify the geographic diversity and dominant source markets for hotel guests.

2. Room Type (Pie Chart)

- **Purpose**: Shows the proportion of different room types chosen by guests.
- Categories:

PoolView: Guests selecting rooms with pool views.

OceanView: Guests opting for ocean-view rooms.

GardenView: Rooms facing gardens.

• **Insight**: Provides an overview of guest preferences for room types, allowing the hotel to tailor room offerings or marketing strategies.

3. Age Distribution (Histogram)

- **Purpose**: Visualizes the distribution of guest ages, grouped into bins.
- Details:

Age groups (e.g., 20s, 30s, 40s, etc.) are on the x-axis.

The y-axis represents the count of guests within each age group.

• **Insight**: The majority of guests appear to be in their 50s-70s, indicating a mature demographic as a significant portion of the customer base.

4. Season (Stacked Bar Chart)

- **Purpose**: Highlights the seasonal variation in guest visits.
- Seasons:
 - o **Summer**: The largest season category for guest stays.
 - o Winter: Also has a significant number of guests.
 - o Fall and Spring: Appear to have fewer guests.
- **Insight**: Helps the hotel identify peak seasons for better planning and marketing.

5. Stay Duration (Bar Chart & Summary)

- **Purpose**: Analyzes the duration of guest stays.
- Details:

A histogram shows the count of guests for each stay duration (1-7) days).

Most stays cluster around shorter durations (1–3 days).

• Summary Metrics:

Count of Stay Duration: 1,199 guests.

o Age: Total age count split across bins.

Number of Guests: Total guest count (636 single guests vs. 1,040 grouped guests).

Stay Duration (bin): Breaks down stay lengths into bins for easier analysis.

• **Insight**: Most guests prefer shorter stays, suggesting trends in visit purposes (e.g., short vacations or business trips).

How This Dashboard Can Be Used

1. Targeted Marketing:

Focus campaigns on countries or regions with higher guest numbers.

Highlight room types that are more popular (e.g., ocean-view rooms).

2. Seasonal Promotions:

Offer promotions during off-peak seasons (Fall/Spring) to balance occupancy.

3. Tailored Services:

Cater to the mature age demographic (50–70) with amenities and packages appealing to this group.

4. Revenue Management:

Use stay duration trends to optimize pricing for short stays.

Conclusion

This comprehensive marketing analytics project has demonstrated the value of leveraging advanced analytical tools and techniques to optimize decision-making for a beachfront hotel.

- Customer Segmentation: The segmentation analysis identified three key customer groups: budget-conscious younger travelers, middle-aged families seeking value, and older luxury-oriented guests. By tailoring offerings such as discounts, family-friendly services, and premium amenities, the hotel can effectively cater to each segment, boosting customer satisfaction and profitability.
- Conjoint Analysis: The conjoint analysis highlights the importance of prioritizing Thai massages, ocean-view rooms, and competitive pricing to attract customers. Marketing should emphasize these attributes while de-emphasizing pool-view rooms and island tours, which negatively impact preferences. Meal plans like "Full Board" can be offered as secondary upsells. Tailored packages and dynamic pricing strategies will optimize appeal across customer segments.
- Google Analytics: The Google Analytics demo data highlights user demographics, acquisition channels, traffic engagement, and monetization trends. Organic search and the US dominate user activity, while engagement metrics reveal opportunities for retention. Monetization relies on direct purchases, with potential growth in repeat customer strategies and optimizing product bundles.
- **Keywords & Social Media Marketing**: Keyword research reveals significant opportunities to target audiences with terms like "Beachfront hotel Thailand" and "Affordable beachfront hotels," which combine high search interest with manageable competition. Meanwhile, "Spa hotel Thailand" showcases the highest demand, making it a prime target for SEO. Social media ads designed for Instagram effectively highlight the beachfront hotel's unique offerings, blending stunning visuals with clear CTAs to attract and convert potential guests.
- **Tableau Dashboard**: The Tableau visualizations reveal key insights: guest origins, room preferences, age distribution, seasonal trends, and stay durations. These insights support targeted marketing, seasonal promotions, tailored services for mature demographics, and optimized pricing for short stays.

Together, these analyses form a robust framework for the hotel to enhance customer engagement, optimize its marketing efforts, and improve overall profitability. By integrating these techniques, the beachfront hotel can maintain a competitive edge in the hospitality industry while delivering an exceptional guest experience.