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# Introduction

# In the dynamic world of hospitality, optimizing a resort booking platform for both profitability and customer satisfaction is a complex endeavor. This data analysis project aims to unlock the secrets hidden within past lodgments, shedding light on the best strategies for the resort's future success. Our analysis is multifaceted, with a focus on determining optimal booking dates, evaluating the impact of promotional codes, proposing price reductions, and planning future pricing strategies.

# Beyond these, we delve into the intricacies of accommodating families by exploring favorable dates for children's inclusion. We also account for the influence of time-related variables such as weekends, weekdays, and less favorable periods for outdoor recreation, all of which can significantly impact booking patterns and pricing structures.

# Throughout this project, we formulate hypotheses, conduct data exploration, employ statistical tests, and leverage visualizations to unearth valuable insights. By the project's conclusion, we anticipate providing a comprehensive set of recommendations that will empower the resort to enhance its offerings, attract a broader clientele, and ensure enduring success in the competitive realm of resort hospitality.

# 1. Hypothesis

Formulating hypotheses is an essential step in any data analysis. In our analysis of the resort booking platform data, we formulated several hypotheses to guide our investigation and draw meaningful conclusions. Here are some hypotheses considered based on our analysis goals:

* Best Booking Dates: The choice of booking dates significantly impacts the average paid amount.
* Price Reduction Suggestions: Implementing suggested price reductions leads to a significant increase in bookings.
* Pricing Plans for the Future: The current pricing plans can be improved for better revenue and customer satisfaction.
* Favorable Dates for Children Inclusion: There is a significant difference in the number of bookings with children between weekends and weekdays.
* Promo Codes Effect: The use of promo codes significantly affects the average paid amount.
* Variation in Pricing on Weekends and Weekdays: There is a significant difference in average paid amounts between weekends and weekdays.
* Effect of Outdoor Recreation Periods: The presence of less favorable outdoor recreation periods significantly affects the number of bookings.

These hypotheses provide a framework for our data analysis. Therefore, we would conduct statistical tests, exploratory data analysis, and modeling to either accept these hypotheses, leading to valuable insights and recommendations for the resort booking platform.

# 2. Summary Statistics and Data Understanding:

**2.1 TIME SERIES ANALYSIS BASED ON ARRIVAL TIME**

Insights from the arrival times from May till October 2023. In this analysis, we filter the table to get aggregated data for the number of adults and babies that arrive daily during the selected period.

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Fig 1.0: Distribution of the Number of Adults that arrived between May and October

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Fig 2.0: Distribution of the Number of Babies that arrived between May and October

**2.1.1 Summary of Findings**

In this analysis, we collected daily data on the number of adults and babies visiting the resort over a period. Our findings revealed distinct patterns. During June, we noticed a significant increase in adult visitors on a specific day, marking the highest single-day adult turnout. However, this surge wasn't consistent throughout the entire month. In contrast, July and August consistently showed a high number of adult visitors. This is typically attributed to the summer peak season, drawing individuals and families for vacations, often aligning with school holidays and favourable weather.

Interestingly, we found a direct correlation: when adult visitors increased, so did the number of accompanying babies. Families with infants tended to visit more when there was a higher turnout of adults, indicating a connection between these visitor groups. Although there was a clear connection between adult and infant visitation, the number of babies visiting was notably lower compared to the adult turnout during this period. This suggests the resort might appeal more to adults than families with infants.

Understanding these visitation patterns can help the resort refine its marketing strategies, allocate resources effectively, and plan its business operations. By catering to various visitor preferences, the resort can enhance the overall experience, attracting more visitors and ensuring sustained growth.

**2.2 TIME SERIES ANALYSIS BASED ON ARRIVAL DURING WEEKDAYS VERSUS WEEKENDS**

Insights from the arrival times from May till October 2023. In this analysis, we aggregate the data for the number of adults and babies that arrive during the weekdays or weekends during the selected period.

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Fig 3.0: Comparing the Number of Adults that arrived during Weekdays/Weekends between May and October

A graph showing a line of different colored lines

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Fig 4.0: Comparing the Number of babies that arrived during Weekdays/Weekends between May and October

**2.2.1 Summary of Findings**

In this analysis, we closely examined data concerning adult and baby visitors over the specific period, paying particular attention to their patterns during weekends and weekdays. The insights provided shed light on a clear trend.

On average, the number of adult visitors during weekends was approximately twice that during weekdays. This surge during weekends is often due to people having more free time and flexibility to plan outings, making resorts like Negombo a popular choice for weekend getaways.

Interestingly, the months of July and August stood out in this analysis. During these summer months, the number of visitors on weekdays was significantly high, almost comparable to the number of visitors on weekends. This anomaly can be attributed to the peak of the summer season, when many people, including families, take extended breaks and plan resort visits on both weekdays and weekends.

On the other hand, when we consider the daily frequency of visitors for other months, weekdays consistently attracted visitors, albeit in smaller numbers compared to weekends. This can be attributed to several reasons. Some individuals prefer weekdays for their quieter and less crowded environment, while others might be local residents or business travellers incorporating a resort visit into their workweek.

A similar pattern emerged for babies accompanying their parents during this period. Families tend to plan their resort visits, including to Negombo Resort, on weekends, when both parents and children can fully enjoy a day out together.

**2.3 BOOKING PATTERNS AND DURATION ANALYSIS**

Analysing the booking patterns, including the duration of stays (Days), using appropriate visualizations. In the data below, the average number of days customers make a booking during the period of May till October, is captured, and illustrated.

A green line graph with numbers

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Fig 5.0: An illustration showing the distribution of the Booking patterns of customers between May and October

**2.3.1 Summary of Findings**

In our analysis, we delved into the booking patterns, specifically focusing on the duration of booking in days, as depicted in the provided visualization. The patterns observed from May to October shed light on varying visitor behaviours.

Early May till June emerged with the highest average days booked per visitor, indicating a preference for longer stays at the outset of better weather and the anticipation of vacation time. This trend further intensified in June, peaking at an average of around 2 days per booking. This surge aligns with the advent of summer, a season synonymous with extended breaks and heightened travel activity. However, an interesting shift occurred in July, witnessing a notable decline in the average duration of stays to less than a day. This change can be attributed to a combination of factors. The summer months often usher in a flurry of activities, leaving limited time for extended stays. Many individuals opt for day trips or short visits to enjoy the resort's amenities without committing to an overnight stay.

Furthermore, factors like increased business-related travel or spontaneous plans could also contribute to the preference for shorter stays during this period. Additionally, the resort's location and accessibility might encourage day visits or brief stopovers for travellers. This trend of shorter stays persisted across the analysed period, suggesting a shift towards more focused and compact leisure experiences, possibly influenced by changing travel trends and evolving preferences in leisure activities.

**2.4 PRICE TREND ANALYSIS**

Analysing the distribution of payment types and their relationship with the paid amount.

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**2.4.1 Summary of Findings**

In our analysis of the price trends for adults and babies based on weekdays and weekends, we observed distinct patterns that offer valuable insights into visitor pricing behaviours over time.

The visualization showcases a consistent high trend, highlighted by red dotted indicators, representing a group of four visitors, presumably adults with kids, during weekends. This trend persisted from May through September, with a slight decline noted towards October. Interestingly, a similar trend for this group of four visitors was observed on weekdays during these months. However, a sharp decline in mid-June was notable, signalling reduced patronage for this group category during weekdays.

Another noticeable trend was the group of three visitors during weekends throughout the mentioned months. While slightly lower in comparison to the group of four, the prices for this category remained relatively consistent on weekends. On weekdays, prices for groups of three were slightly lower than those during the weekends.

Overall, when considering the dotted lines indicating weekends on the graph, it's apparent that there was a higher patronage in terms of pricing for different group categories during weekends compared to weekdays. This observation aligns with common trends, where weekends often attract more visitors due to increased leisure time and availability for family outings.

It's also worth highlighting that single visitors showed a similar pricing trend during both weekdays and weekends, suggesting a consistent preference regardless of the day of the week.

Understanding these pricing trends is crucial for the resort in tailoring their pricing strategies and promotional offers. By aligning their pricing to match these observed variations in visitor preferences, the resort can optimize revenue generation and attract a diverse audience, enhancing the overall guest experience based on specific group categories.

**2.4.2 PRICING MODEL PROPOSAL**

### **We have formulated a pricing Model which proposes a slight reduction in the current prices on only weekdays. Below is a comparison of the current pricing with the proposed pricing model.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **WEEKDAYS ONLY** | **06/30/2023 to 09/30/2023**  **08.30 - 19.00** | **01/07/2023 to 29/09/2023**  **08.30 - 19.00** | **Proposed Pricing Model**  **08.30 - 19.00** | **Equipments** |
| **1 Adult:** | €40.00 | €45.00 | **€35.00** | 1 umbrella, 1 sunbed, 1 deckchair |
| **2 Adults:** | €80.00 | €90.00 | **€70.00** | 1 umbrella, 2 sunbeds |
| **3 Adults:** | €115.00 | €120.00 | **€100.00** | 1 umbrella, 2 sunbeds, 1 deckchair |
| **4 Adults:** | €140.00 | €150.00 | **€120.00** | 1 umbrella, 2 sunbeds, 2 deckchairs |
| **1 Adult, 1 Child:** | €65.00 | €73.00 | **€55.00** | 1 umbrella, 2 sunbeds |
| **1 Adult, 2 Children:** | €88.00 | €100.00 | **€75.00** | 1 umbrella, 2 sunbeds, 1 deckchair |
| **1 Adult, 3 Children:** | €110.00 | €125.00 | **€95.00** | 1 umbrella, 2 sunbeds, 2 deckchairs |
| **2 Adults, 1 Child:** | €103.00 | €115.00 | **€90.00** | 1 umbrella, 2 sunbeds, 1 deckchair |
| **2 Adults, 2 Children:** | €125.00 | €138.00 | **€110.00** | 1 umbrella, 2 sunbeds, 2 deckchairs |
| **3 Adults, 1 Child:** | €135.00 | €148.00 | **€120.00** | 1 umbrella, 2 sunbeds, 2 deckchairs |
| **3 Adults, 2 Children:** | €160.00 | €176.00 | **€145.00** | 1 umbrella, 2 sunbeds, 2 deckchairs |
| **4 Adults, 1 Child:** | €165.00 | €178.00 | **€150.00** | 1 umbrella, 2 sunbeds, 2 deckchairs |
| **1 Child:** | €25.00 | €25.00 | **€25.00** | Height between 1m and 1.40m |

**2.4.3 Explication of Proposed Pricing Strategy for Revenue Enhancement**

The decision to implement a price reduction strategy for weekdays at Negombo Resort stems from a keen understanding of visitor behaviour, gathered through thorough data analysis. By leveraging this understanding and anticipating the potential impact of adjusted pricing, we seek to enhance long-term revenue by encouraging more visitors to choose weekdays for their resort stays.

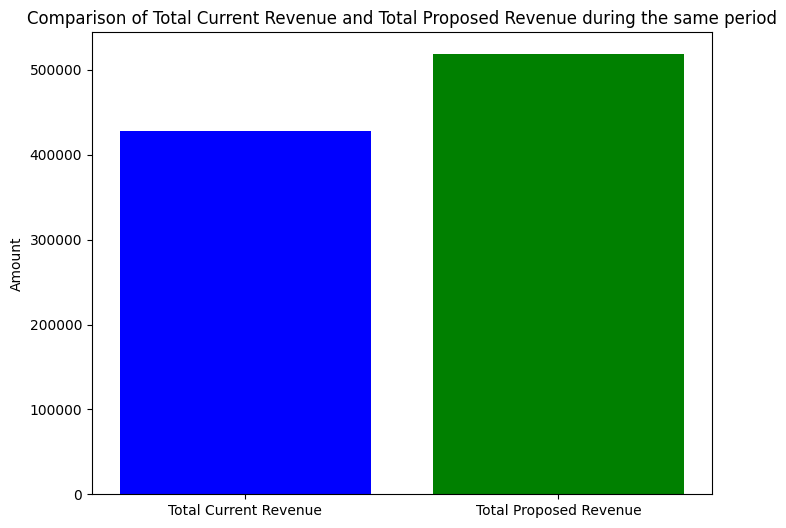
**2.4.5 Anticipated Effectiveness of the Proposed Pricing Model**

**1. Projected Visitor Increase:** Our forecast predicts a notable 1/3 increment in visitor patronage during weekdays as a direct result of the price reduction. This indicates a positive response to the pricing strategy, as more visitors opt for weekday stays due to the cost benefit. The illustration below depicts the difference in the trend between the revenue obtained currently and the anticipated revenue using the proposed pricing model.

A graph of a price trend

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**2. Revenue Enhancement:** The projected increase in visitor patronage translates to a potential surge in revenue. While individual rates are lower on weekdays and remains same as the previous pricing for weekends, the overall revenue is projected to rise due to the substantial increase in visitor numbers.



With an influx of visitors on weekdays, the resort can optimize the utilization of resources that would otherwise remain underutilized. This includes accommodation, staff services, and facility usage.

# 3. Comprehensive Conclusion and Recommendations

Our rigorous data analyses have unveiled essential insights into visitor behaviors and pricing trends at Negombo Resort. By scrutinizing arrival patterns, visitation distinctions between weekdays and weekends, booking durations, and pricing dynamics, we've gained a comprehensive understanding of how these aspects intersect and influence the resort's performance.

The arrival time analysis showcased distinct visitation patterns. June saw a significant surge in adult visitors, likely due to the commencement of the summer season. Conversely, July and August consistently attracted a high number of adult visitors, coinciding with the peak summer period and school holidays. Additionally, a correlation was observed between adult and baby visitation, underlining the family-oriented nature of the resort. Leveraging this understanding can guide targeted marketing and operational decisions, enhancing the overall guest experience.

Comparing visitation patterns between weekdays and weekends underscored significant differences. Weekends experienced a substantial surge in adult visitors, indicating increased leisure time and family outings. However, during July and August, weekdays saw remarkable visitation, suggesting the resort's appeal to locals or those seeking a quieter ambiance. Tailoring marketing strategies to bolster weekday patronage and optimizing resource allocation based on these trends can be advantageous.

In analyzing booking patterns and durations, we identified varying preferences. Early summer months favored extended stays, aligning with better weather and vacation anticipation. Conversely, July witnessed a decline in duration, likely due to busier schedules and a surge in day trips. The consistent trend of shorter stays indicated a shift towards focused, compact leisure experiences, necessitating flexible booking options and targeted marketing initiatives.

The pricing trend analysis elucidated clear patterns in visitor pricing behaviors. Weekends exhibited a high trend in pricing for a group of four visitors, likely families, resulting in higher prices. Mid-June witnessed a sharp decline in prices for this category on weekdays, potentially indicating reduced patronage. Understanding these pricing trends is pivotal for the resort to optimize revenue and tailor promotional offers, attracting a diverse audience.

In conclusion, Negombo Resort's visitor dynamics are multifaceted, influenced by seasonal variations, weekday versus weekend preferences, booking patterns, and pricing strategies. A comprehensive approach that aligns marketing, pricing, and operations with these insights is crucial for sustainable growth and enhanced guest experiences.

**3.1 RATIONALE BEHIND THE PRICE REDUCTION STRATEGY**

**1. Stimulating Demand on Weekdays:**

Weekdays typically experience lower visitor turnout due to work and other commitments. By strategically reducing prices during these days, we aim to stimulate demand and make resort stays on weekdays more attractive.

**2. Balancing Demand and Supply:**

Lowering prices on weekdays helps in levelling the demand between weekends and weekdays. This balance in demand can lead to optimal resource allocation, maximizing the overall capacity utilization of the resort.

**3. Attracting Cost-Conscious Visitors:**

Price-sensitive individuals often seek value for money. By offering reduced rates on weekdays, the resort caters to this segment, enticing them to choose weekdays for their visit and extending their stay due to the cost advantage.

**4. Encouraging Extended Stays:**

The reduced prices on weekdays are anticipated to incentivize longer stays, augmenting the overall revenue from services such as dining, entertainment, and other amenities.

In conclusion, the proposed price reduction strategy for weekdays at Negombo Resort is strategically designed to enhance long-term revenue by addressing visitor preferences and optimizing resource utilization. By aligning pricing with demand patterns and visitor behaviour, we aim to strike a balance, ensuring a positive impact on both guest satisfaction and the resort's financial sustainability. This strategic approach reflects a forward-thinking stance, demonstrating our commitment to providing value, enhancing the guest experience, and securing the resort's position as a premier choice for leisure and relaxation.

**3.2 RECOMMENDATIONS**

1. Dynamic Pricing Strategy:

- Implement dynamic pricing to optimize revenue by adjusting prices based on seasonal demand and booking patterns.

2. Targeted Marketing Initiatives:

- Design targeted marketing campaigns to promote weekday stays, emphasizing the quieter ambiance and specialized weekday activities.

3. Family-Centric Attractions:

- Develop family-focused attractions and activities within the resort to enhance the appeal for families with children.

4. Early Booking Incentives:

- Offer early booking discounts for the upcoming peak season to incentivize early reservations and ensure a consistent flow of guests.

5. Enhanced Child Safety Measures:

- Establish dedicated kid-safe zones, implement childproof amenities, and employ trained childcare staff to ensure a secure environment for children.

By implementing these recommendations and leveraging the insights gained from our analyses, Negombo Resort can strategically position itself in the market, optimize revenue, and deliver exceptional guest experiences tailored to evolving visitor preferences.