Hotel Booking Analysis Report

Question 1: Key Observations and Trends

1.1 Three Meaningful Trends Identified

- **Trend 1: High Cancellation Rate**: 20.2% cancellation rate in the dataset
- **Trend 2: Channel Performance Disparity**: Web bookings outperform mobile and travel agents in confirmation rate (77.21% vs ~67%) and average transaction value (~$29,597)
- **Trend 3: Room Type Preference**: Deluxe, Standard, and Suite rooms have nearly identical average selling prices (~$29,500) and consistent profit margins (23.6%)

1.2 Booking Patterns by Category

- **Channels:** customers use Mobile App, Travel Agent, and Web with different booking channel-of-booking types. Web-Web and Mobile App-Web combinations dominate
- **Room Types:** Business and Leisure bookings spread evenly across room types
- **Star Ratings:** Selling prices and booking values are fairly consistent across star ratings 2 to 5, all near ~$29,000. Profit margin steady at 23.6% regardless of star rating

1.3 Cancellation Behavior Analysis

- Cancelled bookings' average selling price is ~$29,597, nearly identical to confirmed bookings (~$29,474)
- Refund amounts (~$323) and total discounts (~8%) similar across booking statuses
- Indicates cancellations do not heavily bias on price sensitivity alone

Question 2: Root Cause Analysis

2.1 Cancellation Pattern Reasons

- Cancelled bookings most commonly standard room type and booked via Web channel

- Missing check-in/check-out dates (5,468 records) point to incomplete booking or late-stage cancellation

2.2 Channel and Property Performance Factors

- Confirmation rates best on Web platform (~77%), lower on Mobile App (~67%), indicating mobile usability or willingness to pay issues. Travel Agent provides similar booking value but lower confirmation rate (~66%)

2.3 Temporal and Seasonal Trends

- Monthly booking distribution relatively stable, with ~2,100–4,500 bookings per month

- Confirmation rates mostly above 70% throughout year except July & August dip (~63-65%)

- Booking days of the week have similar booking counts and confirmation rates (70-73%) across weekdays and weekends

Question 3: Business Recommendations

3.1 Strategies to Reduce Cancellations

- Enhance Mobile App booking flow to boost confirmation rate from current 67% to Web's 77%
- Ensure mandatory entry of check-in/check-out dates early in the booking process to reduce incomplete bookings
- Implement booking reminders and confirmation follow-ups 48–72 hours before check-in

3.2 Improve Profitability and Repeat Bookings

- Focus on Deluxe and Standard room segments which contribute the majority of bookings and profit margin (23.6%)
- Introduce loyalty programs with cashback and personalized promotions to increase repeat bookings
- Cross-sell dining, transport, and activities bundled with bookings.

3.3 Pricing, Promotions, and Channel Strategy

- Optimize web platform with SEO, better UX, and exclusive deals
- Redesign mobile app booking flow, consider app-exclusive promotions to boost adoption
- Use dynamic pricing algorithms to adjust pricing in real time based on demand, booking channel and stay length

Critical Metrics:

- Cancellation Rate: 20.2%

- Web Confirmation Rate: 77.21%

- Mobile Confirmation Rate: 67.54%

- Average Profit Margin: 23.6%

- Booking Counts Per Month: 2,100–4,500

- Missing Check-in/Check-out Dates: 5,468 (18.23% of data)

Implementation Priorities

Immediate (Next 30 Days):

- Fix mobile app booking flow issues to decrease cancellations

- Implement strict booking data validation for check-in/out dates

Short-term (Next 90 Days):

- Deploy dynamic pricing algorithms for better revenue management

- Improve web platform UX and marketing campaigns

Long-term (Next 6-12 Months):

- Build comprehensive customer retention processes and personalized marketing

- Establish partnerships for bundled promotions

- Enhance predictive models for cancellation risk and customer lifetime value