

BUSINESS PROBLEM

- In recent years, City Hotel and Resort Hotel have seen high cancellation rates. Each hotel is now dealing with a number of issues as a result, including decrease in revenues and their rooms are not fully accommodated. Consequently, lowering cancellation rates is both hotels' primary goal in order to increase their efficiency in generating revenue, and for us to offer thorough business advice to address this problem.
- The analysis of hotel booking cancellations as well as other factors that have no bearing on their business and yearly revenue generation are the main topics of this report.



Assumptions

1. The information is still current and can be used to analyze a hotel's possible plans in an efficient manner.
2. There are no unanticipated negatives to the hotel employing any advised technique.
3. The hotels are not currently using any of the suggested solutions.
4. The biggest factor affecting the effectiveness of earning income is booking cancellations.
5. Cancellations result in vacant rooms for the booked length of time.

Research Question

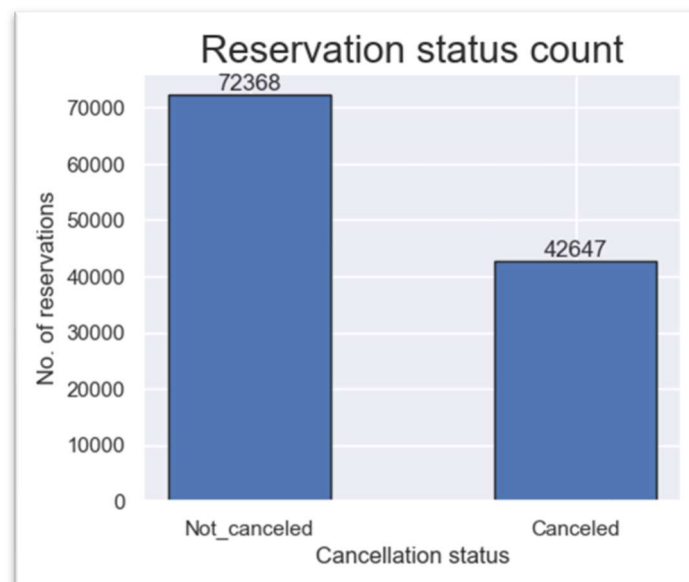
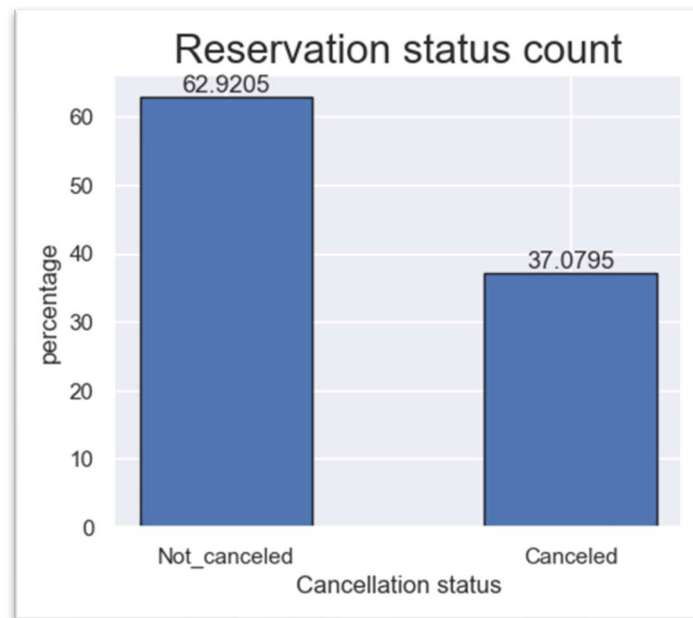
1. What are the variables that affect hotel reservation cancellations?
2. How can we make hotel reservations cancellations better?

Hypothesis

1. More cancellations occur when prices are higher.
2. When there is a longer waiting list, customers tend to cancel more frequently

Analysis and Findings

1. The below bar graph shows the percentage of reservations that are cancelled and those that are not.



- The accompanying bar graph shows the percentage of reservations that are cancelled and those that are not. Almost 63% reservations were not cancelled and 37% were cancelled. It is obvious that there are still a significant number of reservations

that have not been cancelled. There are still 37% of clients who cancelled their reservation, which has a significant impact on the hotels' earnings.

2. Reservation status in different hotels



- In comparison to resort hotels, city hotels have more bookings. It's possible that resort hotels are more expensive than the city hotel.

For Resort Hotel

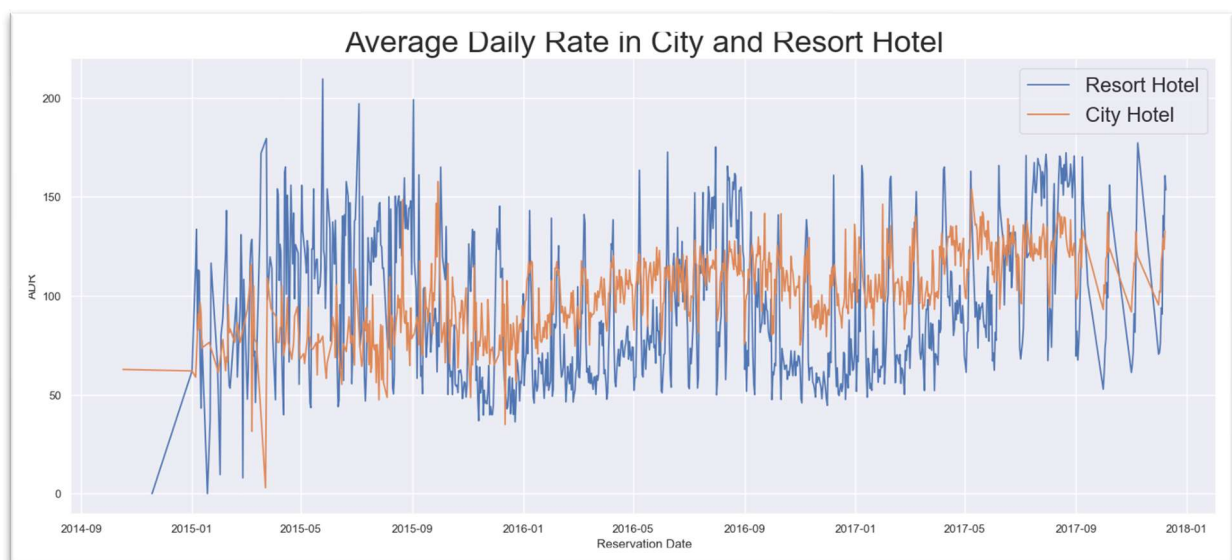
Cancellation status	Number of Reservations	Percentage terms
Not Cancelled	26957	72.8%
Cancelled	10072	27.2%

For City Hotel

Cancellation Status	Number of Reservations	Percentage terms
Not Cancelled	45411	58.23%
Cancelled	32575	41.77%

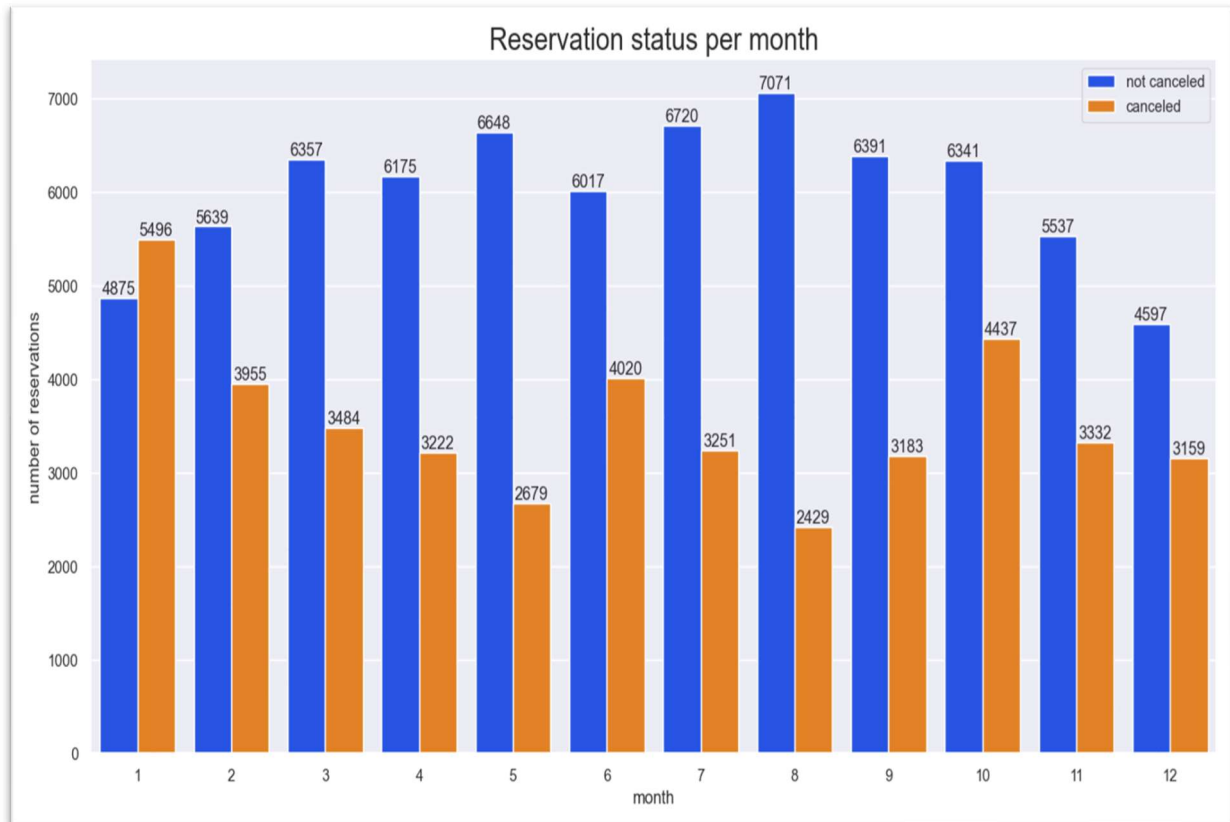
- We can see that Cancellations percentages are higher for City Hotel and It has more no. of reservations than Resort Hotel

3. Is there any effect of price for reservation cancelation in different Hotels



- The line graph above shows that, on certain days, the average daily rates (ADR) for a city hotel is less than that of a resort hotel, and on other days, it is even less. weekends and holidays may see a rise (peak in graph) in resort hotel rates.
- We can clearly observe that even ADR of Resort is Higher than a city Hotel, but city Hotel's cancellations rate is comparatively higher than Resort Hotels. So, the city hotels should provide extra services, or some discounts on weekends or holidays

4. To see the reservation status in different month to understand in which month cancellation more occurs



- We have developed the grouped bar graph to analyze the months with the highest and lowest reservation levels according to reservation status. As can be seen, the number of confirmed reservations is highest in the month of August that is 7071, whereas January is the month with the most cancelled reservations that is 5496.

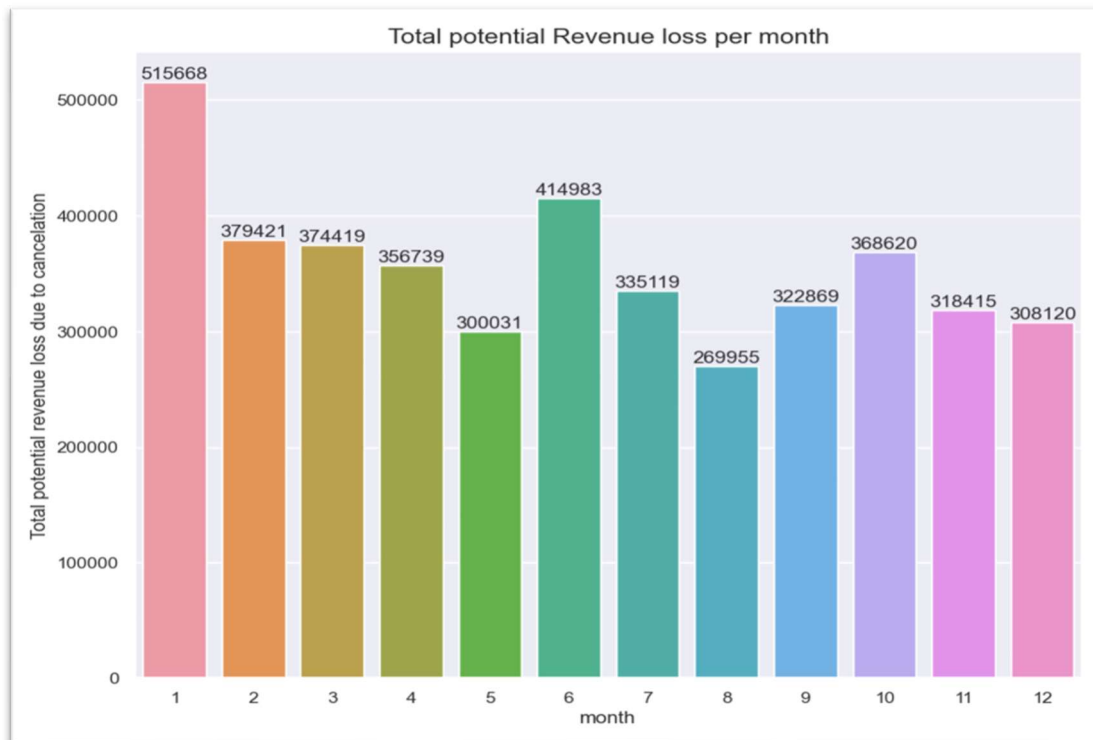
Table Showing cancellation status numbers in absolute and percentage terms

Month	Cancellation Status	Number of Reservations	Percentage terms
January	Not Cancelled	4875	47.01%
	Cancelled	5496	52.99%
February	Not Cancelled	5639	58.78%
	Cancelled	3955	41.22%
March	Not Cancelled	6357	64.60%
	Cancelled	3484	35.40%
April	Not Cancelled	6175	65.71%
	Cancelled	3222	34.29%
May	Not Cancelled	6648	71.28%
	Cancelled	2679	28.72%
June	Not Cancelled	6017	59.95%
	Cancelled	4020	40.05%
July	Not Cancelled	6720	67.40%
	Cancelled	3251	32.60%
August	Not Cancelled	7071	74.43%
	Cancelled	2429	25.57%
September	Not Cancelled	6391	66.75%
	Cancelled	3183	33.25%
October	Not Cancelled	6341	58.83%
	Cancelled	4437	41.17%
November	Not Cancelled	5537	62.43%
	Cancelled	3332	37.57%
December	Not Cancelled	4597	59.27%
	Cancelled	3159	40.73%

- It can be seen that cancellations rate in terms of percentage is highest in January that is 52.99% and cancellations rate in terms of percentage is lowest in August that is 25.57%.

- In the month of January, hotels can start campaigns or marketing with a reasonable amount to increase their revenues as the cancellation is the highest in this month.

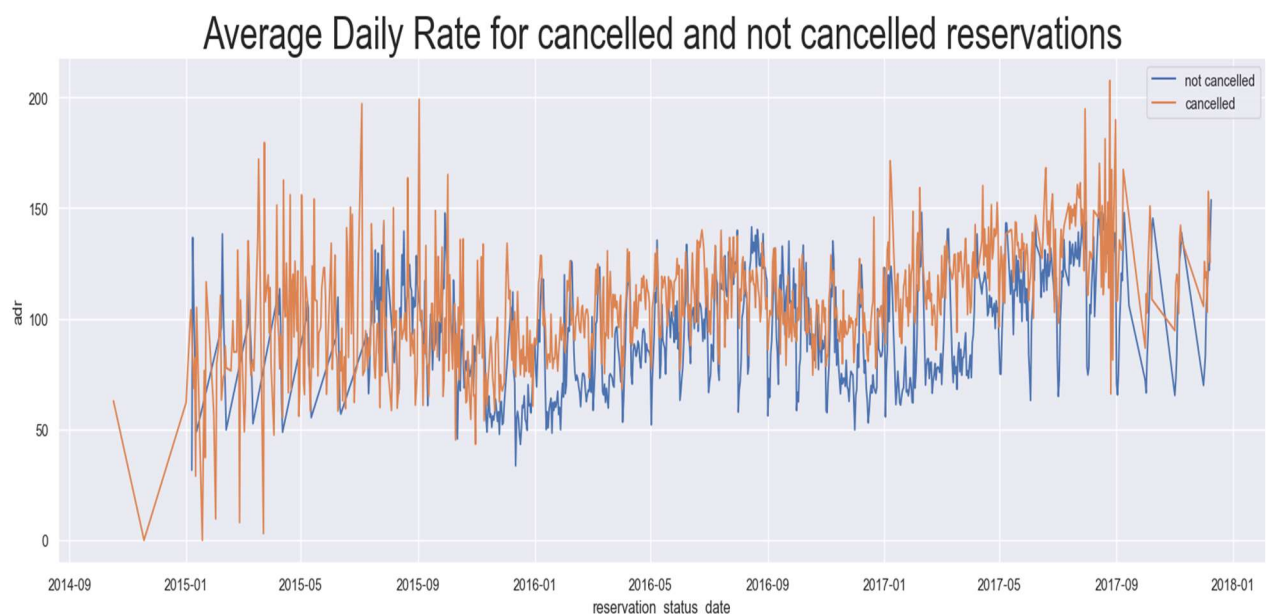
5. Loss of Revenue due to Cancellation month-wise



- It can be seen that loss of Revenue is highest due to cancellations in month of January that is 515668 and it is lowest in month of August that is 269955.

6. Understanding Reservation status (Cancelled, Not Cancelled) and average price to know the price trend over time in both categories so that we can understand people behaviour well

- This is plot of Average Daily Rate for cancelled and not cancelled with Reservation status date.



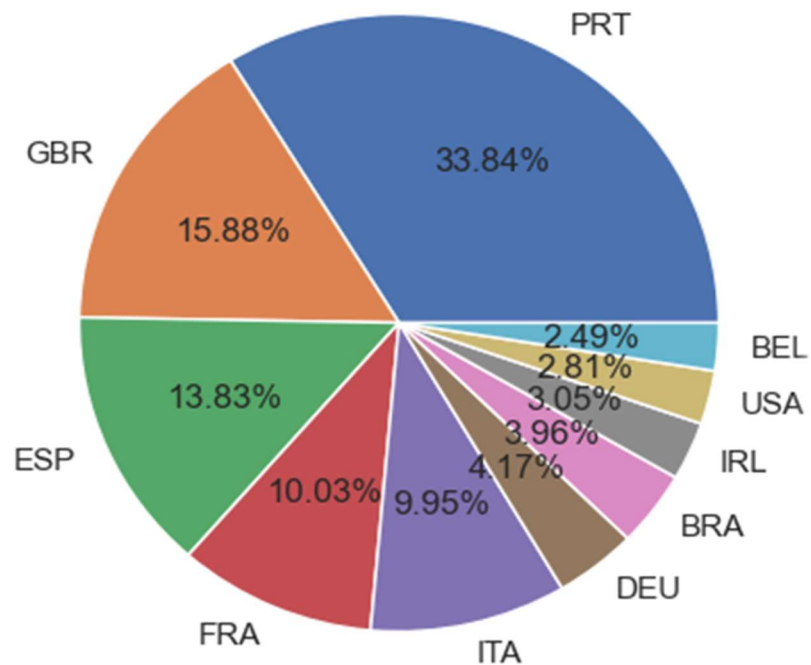
- As seen in the graph, reservations are cancelled when the average daily rate is higher than when it is not cancelled. It clearly proves that the higher price leads to higher cancellation.
- This is the plot of Average Daily Rate with Month for cancelled and not cancelled reservations



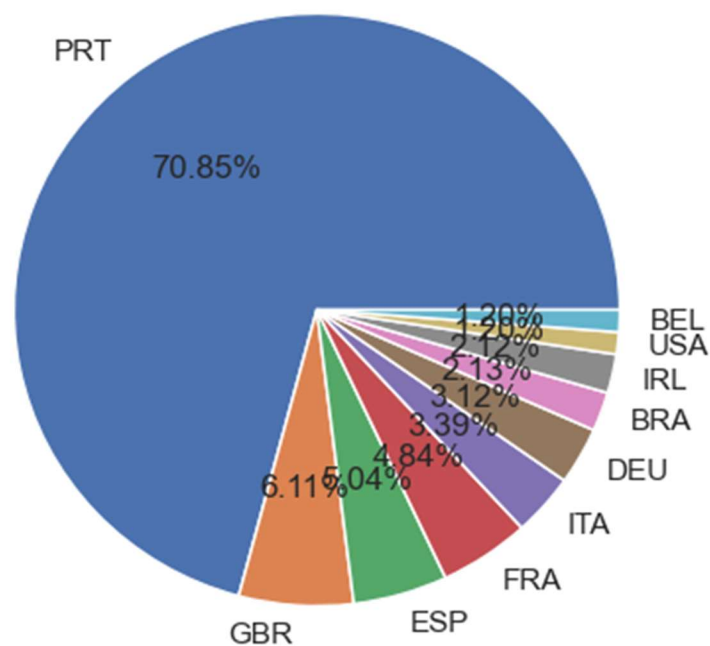
- It can be seen that for different months, ADR for cancelled and not cancelled reservations are different. It may be dependent on holidays, ADR may be high in the month having more Holidays.
- In January, there is a huge difference between ADR of cancelled and not cancelled reservations. That means, in this month, People do not Cancelled their bookings at low ADR and Cancelled their booking at high ADR means people do not want pay high ADR in this month as hotels prices are not reasonable That's why Highest percentage of Cancellations are seen in this month.
- In August Month, Highest number of bookings take place and have the lowest percentage of cancellation. From the above plot, It can be seen that the Difference between ADR of Cancelled and not cancelled bookings is very less. People cancelled their booking at the same ADR at which they do not cancelled their booking that means, In this month, ADR is reasonable and there is no issue of high ADR among people.

7. Top 10 countries in reservation cancellation

Top 10 countries with reservation not cancelled

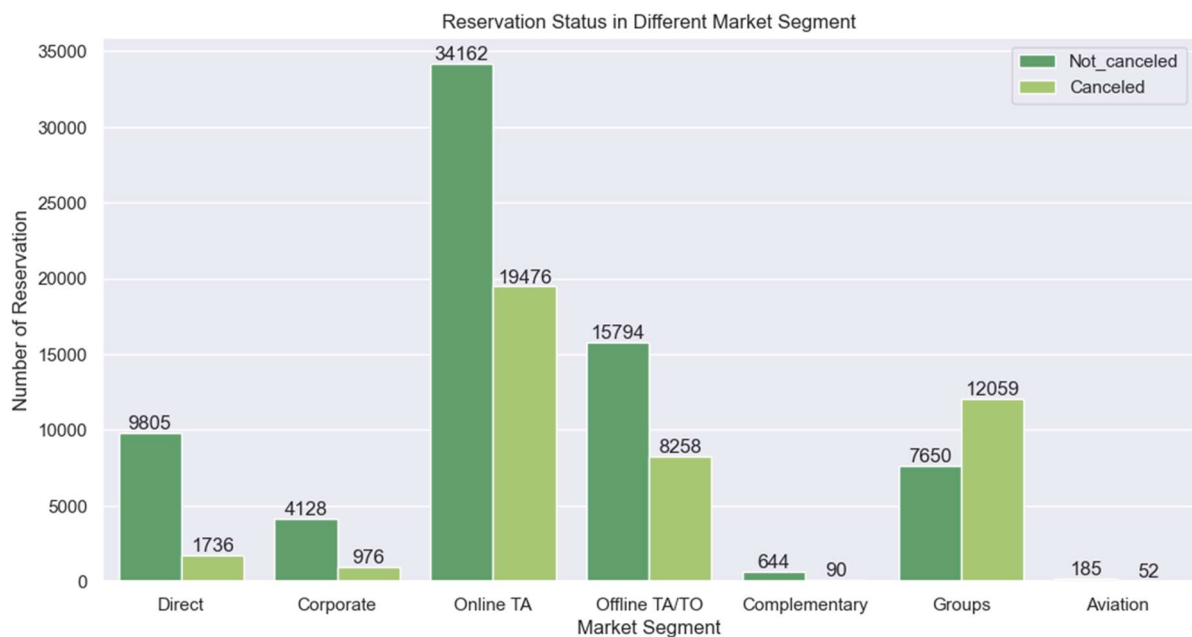


Top 10 countries with reservation cancelled



- From the above two pie charts, among top 10 countries, PRT accounts for 33.84% of total confirmed (not cancelled) reservations. But PRT accounts for 70.85% of total cancelled reservations.
- Hotels in Portugal need to increase the quality of their hotels and their services to reduce cancellation rates as we seen the highest cancellation in this country.

8. Reservation Status in Different Market Segment



From the above bar graph, it can be seen that, Highest number of customers comes through online TA(Travel agents). Also Highest number of peoples who cancelled their reservations comes through online TA.

Market segment	Cancellation Status	Number of Reservations	Percentage terms
Direct	Not Cancelled	9805	84.96%
	Cancelled	1736	15.04%
Offline TA	Not Cancelled	15794	65.67%
	Cancelled	8258	34.33%
Online TA	Not Cancelled	34162	63.69%
	Cancelled	19476	36.31%

corporate	Not Cancelled	12059	80.88%
	Cancelled	7650	19.12%
Groups	Not Cancelled	2679	38.81%
	Cancelled	6648	61.19%
Aviation	Not Cancelled	185	78.06%
	Cancelled	52	21.94%

Online TA and Groups are the market segments having very high cancellation rates.

Percentage of customers from different segments

Online TA	46.64%
Offline TA/TO	20.91%
Groups	17.14%
Direct	10.03%
Corporate	4.44%
Complementary	0.64%
Aviation	0.21%

Around 47% of the customers comes through online TA and only 10% of the customers book hotels directly by visiting them.

Suggestions:

- Cancellation rates rises as the price does, but every month has different ADR and accordingly, customers cancelled their reservations. In order to prevent cancellations of reservations, hotel should work on their pricing strategies and should try to lower the rates for specific hotels based on locations. They can do social media Campaign and provide some coupons, discounts to the consumers so they can see the lower cancellations.

- In the month of January, hotels can start campaigns or marketing with a reasonable amount to increase their revenues as the cancellation is the highest in this month
- They can also increase the quality of their hotels and their services mainly in Portugal to reduce cancellation rates as we seen the highest cancellation in this country
- As the ratio of cancellation of the city hotels is comparatively higher than resort hotels. So the city hotels should provide extra services, or some discounts on weekends or holidays.
- Hotel should try to diversify its market segment as they are heavily dependent on online TA which has one of the highest cancellation rates.