A Commercially Viability, Data Driven Hotel Overbooking Strategy

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Abstract Commercial hotel booking data guides a probability model designed to optimize hotel overbooking. The task is to develop a profitable overbooking strategy, given the uncertainty of a reservation's arrival and the cost of providing alternative accommodations. Then a logistic regression model estimates the probability of cancellation given days until check in, booking agency, deposit, price paid, etc. The probability model in conjunction with logistic regression shows the maximum number of additional reservations to schedule. Splitting data into training and testing sets, shows this over booking strategy is TBD more profitable than accepting every booking, and TBD more profitable than abstaining from overbooking.