

**ZMATH 2003c.02643**

**Pecorella, Anthony C.; Taylor, Crystal T.; Perez, Elizabeth A.**

**ACE is high.**

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We design a model that allows an airline to substitute its own values for ticket prices, no-show rates and fees, compensation for bumped passengers, and capacities to determine its optimal overbooking level. Our model is based on an equation that combines the two cases involved in overbooking: The first sums all cases in which the airline doesn't fill all seats with passengers, and the second sums all cases in which there is an overflow of passengers due to overbooking. The model includes the possibility of upgrading passengers from coach to first-class when there is overflow in coach. Furthermore, we use a binomial distribution of the probabilities of bumping passengers, given different overbooking percentages, to supply the airlines with useful information pertaining to customer relations. We apply our model with different values of the parameters to determine optimal overbooking levels in different situations. By using our model, an individual airline can find an optimal overbooking level that maximizes its revenue. A joint optimal overbooking strategy for all airlines is to agree to allow bumped passengers to fly at a discounted fare on a different airline. (orig.)

*Classification:* M35 K65 K95