

Vacation time! New research uses characteristics of consumers to segment buyers and offer personalized prices and perks

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A "normal" version of life is returning in the wake of the COVID-19

pandemic that includes travel and vacations. New research in *Manufacturing & Service Operations Management* predicts demand for multiple types of hotel rooms based on guest characteristics, travel attributes and room features. This methodology delivers insights on segmentation, classifying each guest into segments (or a mixture of segments) based on their characteristics.

"Being able to recommend personalized offers using this approach can provide the necessary edge for any online seller, airline, hotel or retailer in today's highly [competitive environment](#)," says Sanghoon Cho of Texas Christian University.

The study, conducted by Cho, Mark Ferguson and Pelin Pekgun all of the University of South Carolina, and Andrew Vakhutinsky of Oracle Labs, looks at [customer](#) behavior utilizing an Oracle Hospitality Global Business Unit application.

"Understanding the true demand of customers for a product is critical to be able to offer the right product to the right customer. However, instances where customers may choose not to purchase due to [high prices](#) or lack of interest in the available offerings, can lead to a distorted view of future demand. Moreover, each customer is unique and a one-size-fits-all policy may not be effective when facing a customer population with varying preferences," continues Ferguson, a senior associate dean for academics and research and Dewey H. Johnson Professor of Management Science in the Darla Moore School of Business. "We suggest a method that overcomes both challenges simultaneously."

"These findings can help providers formulate more efficient marketing policies and offer personalized recommendations that are more likely to be accepted," concludes Pekgun, faculty director of the Master of Science in Business Analytics program and associate professor of

management science at the Darla Moore School of Business.

This model will become part of Oracle Hospitality's Applied Artificial Intelligence platform PRIME and will be used to select the optimal personalized offers for rooms and products. It is also intended to be used within the predictive analytics part of the price differentiation optimization tool to find the optimal surcharge for premium rooms based on the characteristics of the booking guest.

"Oracle Hospitality focuses on leveraging such models to drive specific positive business outcomes, greater revenue, increased guest engagement and reduced operational friction. Our goal is always to help our hospitality customers improve revenue performance," says Jason Bryant, vice president of Oracle Hospitality.

More information: Sanghoon Cho et al, Estimating Personalized Demand with Unobserved No-Purchases Using a Mixture Model: An Application in the Hotel Industry, *Manufacturing & Service Operations Management* (2022). [DOI: 10.1287/msom.2022.1094](https://doi.org/10.1287/msom.2022.1094)

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