

Analyzing the Effect of Personal Characteristics on Revenue Management Decisions Through Data Mining

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Abstract

In this paper we analyze pricing and capacity allocation decisions in a simple two-class airline revenue management scenario using data mining techniques. Our study is based on a lab experiment with a 2x2 between subjects design. We consider four treatments based on class-1 price being low or high and whether the pricing decision is made solely or jointly along with the capacity allocation decision. We study the connection between experiment performance and personal factors such as cognitive reflection, maximizing/satisficing tendency, risk-aversion and loss aversion, as well as demographic information such as gender and education background. We use data mining techniques such as feature selection and cluster analysis.

Keywords

Behavioral Operations, Pricing and Revenue Management, Data Mining, and Personality Traits.

Biographies

Ümmühan Akbay is an Assistant Professor at Management department of Işık University, İstanbul, Turkey. She received her Ph.D. in Industrial Engineering from Sabancı University. She holds an M.Phil degree in Operations Research from Columbia University Graduate School of Business and a B.Sc. degree in Industrial Engineering from Bilkent University. She was a visiting professor at the Industrial Engineering program, Özyeđin University between 2017-2020. Her research interests include behavioral operations management, behavioral and experimental economics, supply chain management, game theory, decision analysis, energy markets, healthcare operations management and revenue management.

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