

A binary differential evolution algorithm for airline revenue management: a case study

A.K. Yazdi; M.A. Kaviani; T. Hanne; A. Ramos Galán

Abstract-

In the current highly competitive airline market, many companies have failed due to their low revenue rates. For this reason, many of them have to develop strategies to increase their revenue. In this study, we develop revenue management (RM) strategy for the Iranian airline industry. More specifically, we present a mathematical model that considers some conditions not studied in previous research in order to provide a more realistic RM modeling of airlines that fits well for the special characteristics of Iranian Airways. A binary differential evolution algorithm is employed to solve the model due to the stochastic nature of data and the NP-hardness of the considered problem. To generate maximum revenue among the six types of airplanes that fly the four capital cities of Iran, the airline under investigation is advised to operate only 21 flights to those cities and cancel the rest of the flights.

Index Terms- Revenue management; Airline industry; Optimization; Binary differential evolution; Booking; Overloading; Cancellation

Due to copyright restriction we cannot distribute this content on the web. However, clicking on the next link, authors will be able to distribute to you the full version of the paper:

[Request full paper to the authors](#)

If your institution has an electronic subscription to Soft computing, you can download the paper from the journal website:

[Access to the Journal website](#)

Citation:

Yazdi, A.K.; Kaviani, M.A.; Hanne, T.; Ramos, A. "A binary differential evolution algorithm for airline revenue management: a case study", Soft computing, vol.24, no.18, pp.14221-14234, September, 2020.