Preference learning for eco-friendly hotels recommendation: a multi-criteria collaborative filtering approach

ABSTRACT

The crucial role of customers' positive experience and their subsequent word-of-mouth have been highlighted by both scholars and practitioners for all industry sectors. In response to an increasing concern of environmental sustainability and sensitivity of consumers for deteriorating environment, eco- friendly (green) products and services gained tremendous attention. TripAdvisor is increasingly known as one of the most popular e-tourism platforms. Understanding and predicting the traveler' preferences by advanced big data analytics technology is an important task that the recommendation engine of this platform does. In this paper, we aim to develop a new soft computing method with the aid of machine learning techniques in order to find the best matching eco-friendly hotels based on the several quality factors in TripAdvisor. We develop the method using dimensionality reduction and prediction machine learning techniques to improve the scalability of prediction from the large number of users' ratings. The proposed soft computing method is evaluated on a large dataset discovered from the TripAdvisor platform. The results show that the combination of dimensionality reduction and prediction machine learning techniques is robust in processing the large number of the ratings provided by users on the features of eco-friendly hotels and predicting travelers' choice preferences of eco-friendly hotels in TripAdvisor.

Keyword: Tripadvisor; Big data analytics; Sustainable tourism; Eco-friendly hotels; Travelers' preference; Machine learning