

## Developing an Integrated Decision Making Framework for Evaluating Hotel Website under Fuzzy Environment

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### Abstract

Assessing hotels' website based on several evaluative attributes is a critical issue for the managers in this industry. This study applies VlseKriterijumska Optimizacija I Kompromisno Resenje under fuzzy environment (FVIKOR) to assess hotels' website performance with respect to 12 attributes. First, the evaluative factors were chosen by the experts. Then, using triangular fuzzy number, the data set were gathered. The main objectives of this paper are to prepare the most effective attributes in evaluating hotels' websites. Moreover, developing a decision model for assessing the performance of hotels is another objective of this research.

Keywords: Performance evaluation, Hotel industry, Website, FVIKOR

### 1. Introduction

Internet has helped businesses reach customers who were previously not accessible (Samad, Nilashi, & Ibrahim, 2019). It has had great impact on customer purchasing behavior (Wang & Law, 2019). Nielsen and Norman (2018) specified that online shopping gives customers a wide view before buying a specific product (Nelson & Norman, 2018). Law and Bai (Law & Bai, 2008) indicated that the Internet has not only made many changes in the sale and purchase of products, but has also made significant changes in attracting customers in other areas such as tourism and hospitality. In the online hotel market, travelers can get a variety of facilities, including the food menu, food prices, discounts, number of empty rooms and other specific information on the hotels environments (Suo, Lu, & Lin, 2020). A hotel' website play an important role in customer' decision making. Therefore, the most important part in online hotel marketing is to design a very effective website design for hotels which increases the satisfaction of the customers (Ha & Im, 2012). The efficiency of hotel websites is thus very vital if hoteliers have aim to attract consumers and provide a pleasant and satisfying online experience.

As internet is very important in hotels' performance, the issue of website performance evaluation have received much attention from many scholars (Nilashi & Ibrahim, 2014). There are several investigations on website assessment to increase the level of performance in managing hotels websites (Stringam & Gerdes, 2019). But, there is a lack on website performance evaluation by

applying Multi-Criteria Decision Making (MCDM) methods (Samad et al., 2019). In fact, MCDM is an approach in which decision makers (managers) can select the best website among several website based on multiple attributes (Erdoğan, Aydın, Balki, & Sayin, 2020; Fallahpour, Olugu, Moghasssem, & Musa, 2014; Fallahpour, Olugu, Musa, Wong, & Noori, 2017; Nilashi, Ahmadi, Ahani, Ravangard, & bin Ibrahim, 2016; Nilashi et al., 2019). Ip et al. (Ip, Law, & Lee, 2012) utilized Analytic Hierarchy Process with fuzzy numbers (FAHP) for assessing performance of hotel website. They determined the most useful criteria for improving the website effectiveness in attracting tourists. As Woodside, Vicente, and Duque (Law, Bai, Woodside, Mir, & Duque, 2011) indicated, richness of content and ease of use are the most important factors to determine website performance. The literature shows that many studies have been conducted in this area; however, implementation of VIKOR, as a robust MCDM technique, under fuzzy environment is very rare in website performance evaluation. Accordingly, this study aims to develop a MCDM model for hotels' website functionality evaluation through VIKOR under fuzzy environment.

The structure of this article is as follows. In Section 2, the related work is presented. In Section 3, Fuzzy VIKOR (FVIKOR) is explained. In Section 4, case study and results are given. In Section 5, conclusion, limitation and future works are presented.