Chapter 8

University Website Performance Evaluation Using Fuzzy SWARA and WASPAS–F

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ABSTRACT

The internet has become an indispensable tool for humanity to access any knowledge. Many companies use the internet to provide their customers with information about their organizations. Website development is a tiring process that requires huge investments. If the performance of the website falls below the expected performance, it will have a negative impact on the website owner. Therefore, the measurement of website performance is an important task for companies. Since many factors or criteria affect the website performance, the use of multi-criteria decision-making methods will be helpful for the performance measurement. In this chapter, fuzzy SWARA and WASPAS-F methods are used to evaluate the performance of 10 state universities’ websites located in Turkey. According to the results, the website of Erciyes University has been determined to have the best performance among the 10 universities evaluated. Future research may extend the sample size of the websites of universities.

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INTRODUCTION

Nowadays, the internet has become undoubtedly the most important and indispensable part of our lives. In many areas, such as commercial activities, cultural activities, and educational activities etc., the internet has become an inevitable tool for accessing the information and communication. Many organizations that provide services to their customers present information about their enterprise on their websites using the internet. Website development has a complicated and exhausting process, requiring huge investments. Despite all this, if the website does not show the expected performance value, it will result in a negative effect on the website owner. Therefore, the evaluation of website performance has become a necessity for organizations.

There are many factors that affect the performance of the website. Factors vary with respect to the type of website to be evaluated, but some general criteria may be as follows: accessibility, content, and personalization etc. If the alternatives need to be evaluated with respect to the performance levels in the factors or the criteria and the number of factors or criteria is high, MCDM methods are used to solve these types of problems. In the literature, there are some single MCDM methods used to evaluate websites. For instance, Guo and Zhao (2010) proposed analytic hierarchy process (AHP) to assess the quality of information service of high-tech industry information centre located in China. Kumar and Zayaraz (2011) used AHP to choose the right web service based on QoS constraints. Additionally, there are also integrated model to evaluate the performance of websites. Büyüközkan and Ruan (2007) proposed fuzzy AHP and fuzzy TOPSIS (Technique for order preference by the similarity to ideal solution) to rank Turkish government websites. Kaya and Kahraman (2011) integrated fuzzy AHP and fuzzy ELECTRE to evaluate the quality level of the e-banking websites. Burmaoglu and Kazancoglu (2012) used fuzzy AHP and fuzzy VIKOR to evaluate e-government websites from a group of chosen European Union countries. Kabak and Burmaoğlu (2013) combined fuzzy DEMATEL (Decision Making Trial and Evaluation Laboratory) and fuzzy ANP (Analytic Network Process) to evaluate the performance of electronic public procurement websites. Ecer (2014) integrated AHP and COPRAS-G (grey complex proportional assessment) to evaluate and rank bank websites. Vatansever and Akgül (2014) proposed fuzzy AHP to assess the quality of private shopping websites in Turkey. Kang et al. (2016) developed fuzzy hierarchical TOPSIS based on E-S-QUAL to assess e-commerce websites. Büyüközkân et al. (2016) proposed intuitionistic fuzzy AHP and intuitionistic fuzzy VIKOR methods to assess hospital web services. Stanujkic et al. (2017) developed fuzzy MCDM model based on triangular intuitionistic fuzzy numbers to assess
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