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Determination of quality characteristics importance based on improved quality function deployment model. (Chinese. English summary) [Zbl 1449.90157](#)

J. Tongji Univ., Nat. Sci. 47, No. 9, 1359-1368 (2019).

Summary: Aiming at the fuzzy and uncertain information of language evaluation in traditional quality function deployment (QFD) on the construction process of quality house, an improved QFD model combining hesitant fuzzy 2-tuple linguistic variables, multiple criteria decision making methods such as AHP and TOPSIS is proposed, to determine the importance ranking of quality characteristics. The proposed model consists of three stages. Firstly, the relationship between user needs and quality characteristics is evaluated. Secondly, the relative importance weight of user needs (C_s) is determined. Lastly, the importance ranking of quality characteristics (Q_s) is determined. Through the above steps, the accuracy of importance ranking of quality characteristics is improved. Finally, an example of importance ranking of quality characteristics of the digital language learning system from one enterprise was given to demonstrate the effectiveness of the proposed approach. This research may provide a reference for improving the design quality of E-learning system of user-centered.

MSC:

[90B50](#) Management decision making, including multiple objectives

[03E72](#) Theory of fuzzy sets, etc.

Keywords:

quality function deployment; quality characteristics; hesitant fuzzy 2-tuple linguistic; multiple criteria decision making

Full Text: [DOI](#)