

Ranking service system alternatives by applying computer simulation-
enabled MCDM

鄧維兆, 李友錚, 陳文欽

Hospitality Management

Management

simond@chu.edu.tw

Abstract

When using computer simulation analysis to help a decision maker choose the alternative for solving operation problem in the past period, the alternative for solving operation problem usually is chosen by single objective criterion. However, we often ignore that the evaluation of the alternative has the characteristic of multiple objective criteria. In the service industry, decision maker need to deal with queuing problem, service capacity optimization, service efficiency and service quality problem wisely. Who can hold the immediate useful information and make the suitable decision, he has the greatest competence. Therefore, propose a computer simulation-enabled MCDM framework which integrating computer simulation analysis, Taguchi method, expert opinion and multiple criteria decision making is our research goal. In this approach, Taguchi method is used to shorten the time of simulation experiment. Computer simulation analysis is used to get some useful information for making decision rapidly and do not interrupt the real production. Expert opinion is used to determine the preference weights of criteria. Multiple criteria decision making is used to extensively choose the optimal alternative. Eventually, using an assumptive operation system problem in service industry to implement the proposed computer simulation-enabled MCDM framework and show the possible effective assistance for decision maker.

Keyword : Computer Simulation, Taguchi Method, Expert Opinion, Multiple Criteria Decision Making, Service Industry