Abstract

The present paper is an attempt to find various characteristics of a queuing network in which two parallel biserial servers are linked to a common server in series under fuzzy environment. Waiting lines or queues are extensively used to analyze the production and service processes exhibiting random variability in arrival times and service times. It is usually assumed that the time between the two consecutive arrivals and servicing time follows a special probability distribution. However, in real world this type of information is obtained using qualitative data and expressed by words like quick, medium and slow rather than the probabilistic values. The \(\mu\)-cut approach and fuzzy arithmetic operations are used to estimate the uncertainty associated with the input parameters. The proposed model is illustrated with a numerical illustration.

References


Index Terms

Computer Science  Fuzzy Systems

Keywords

Queue network  Mean queue length  Waiting time  Biserial servers  Fuzzy arrival rate

Fuzzy service rate

Triangular fuzzy numbers.