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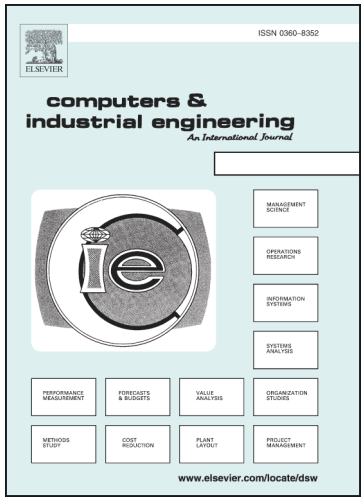

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A fuzzy EOQ model with backorders and forgetting effect on fuzzy parameters: an empirical study

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Abstract

The study of learning effect on inventory models with imprecise parameters is a research topic that emerged recently. The research papers have published so far studied this aspect from a theoretical point of view and thus the literature lacks the investigation of this topic from a practical point of view. To close this research gap, we conducted a semi-structured interview with a number of industry experts to gain insights into the prevalence of learning and forgetting in real applications. Based on the insights gained from the interviews, we have developed a recently published model by countering the assumption of full transfer of learning. The model developed herein proposes a situation where the knowledge gained by the operator in setting imprecise parameters deteriorates over the planning cycles due to intermittent planning process. A numerical study suggests that accounting for knowledge depreciation on imprecise parameters leads to reduction in maximum inventory, which consequently reduces the total cost of the system.

Keywords: Fuzzy EOQ, backorders, semi-structured interview; learning; forgetting, knowledge depreciation.