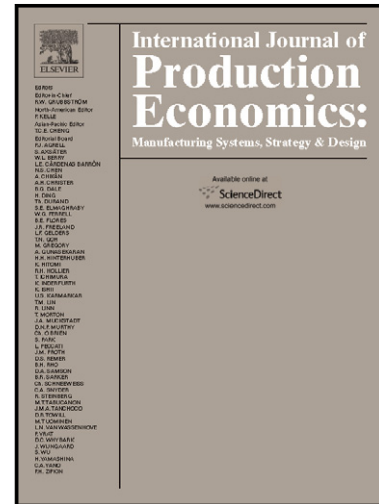


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Intelligent multi-objective decision-making model with RFID technology for production planning

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Abstract

A multi-objective production planning problem in the labor-intensive manufacturing industry is investigated. An intelligent and real-time multi-objective decision-making model is developed to provide timely and effective solutions for this problem by integrating RFID technology with intelligent optimization techniques, in which RFID technology is used to collect real-time production data, a novel $(\mu/\rho + \lambda)$ -evolution strategy process with self-adaptive population size and novel recombination operation is proposed and integrated with effective non-dominated sorting and pruning techniques to generate Pareto optimal solutions for real-world production. Experiments based on industrial data were conducted to evaluate the effectiveness of the proposed model. Experimental results show that the proposed model can effectively solve the investigated problem by providing production planning solutions superior to industrial solutions.

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