An applicable method for scheduling temporary and skilled-workers in dynamic cellular manufacturing systems using hybrid ant colony optimization and tabu search algorithms / Aidin Delgoshei, Ahad Ali

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Abstrak

ABSTRACT
In this paper, a new method proposed for location-allocation of skilled workers in a dual constraint cellular manufacturing systems. The main aim is to determine best trading off values between in-house manufacturing and outsourcing, while performance of human resource is not fixed and part demands are considered uncertain. For this purpose, a multi-period scheduling model is developed which is flexible enough to use in real industries. To solve the proposed model, a hybrid Ant Colony Optimization and Tabu Search algorithms is developed and results are compared with a Branch and Bound algorithms. Results showed that utilizing system capability by operator promoting and using temporary workers can effectively reduce system costs. It is also found that workers performance has significant impact on total system costs. The results also demonstrated the superiority of the proposed method on providing solutions with better quality