عنوان مقاله:

Balancing and sequencing U-shaped mixed model assembly line problem considering setup times between tasks and demand ratio-base in dynamic environments

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خلاصه مقاله:

In mixed model assembly lines, several products with high similarity are simultaneously produced on an assembly line as per the sequence without any additional setup times between the models. This paper concentrates on mixed model assembly line balancing and sequencing type-II problem. The problem has some particular features such as U-shaped workstations and setup times between two consecutive tasks in dynamic periods wherein each period also affects the flowing period. This research intends to reduce cycle time and inventory costs. To this end, a non-dominated sorting genetic algorithm (NSGA-II) is used to solve the problem. Small scales of the problem are solved using both NSGA-II and GAMS software to evaluate the effectiveness of NSGA-II, and the obtained outcomes are compared. The computational results indicate that the NSGA-II is capable of providing high-quality solutions for small scales of the problem. Finally, conclusion and future research are provided.

کلمات کلیدی:

Balancing, sequencing, mixed model U-shaped, setup times, dynamic

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