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Minimizing makespan of multimachine production system in flow shop environment by means of mixed integer programming model (Article)

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Abstract

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To face the challenges of industrial globalization and sustain in the competitive market, the manufacturers have to gratify the customer demand by launching the products on time having variable design and volume at low price. In this regards, the necessity of adopting the epitome of flexible mass production flow shop structure along with the appropriate production planning tools and techniques like scheduling knows no bound. As a consequence, numerous approaches have already proposed for scheduling the production flow shop. However, before the adoption of any of these conventional approaches it is an utmost need for the manufacturer to realize its consequences and the appropriateness. Therefore, in this endeavour, we anticipated mixed integer linear-programming model for machine scheduling in flow shop environment based on multi - machine and multi -product scenario. Real data from industry has been collected by conducting several site visits at a local production system. The model then was analysed using What's Best Excel Solver. The result shown by adopting the appropriate sequence, it is possible to achieve the minimum completion time compared to other possible sequence combination of products. By minimizing the makespan , the idle times of some of the machine will be reduced meanwhile the utilization of the machine will be maximized consequently. © IAEME Publication Scopus Indexed.

Author keywords

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