

An Integrated Mixed-Integer Programming Model to Address Concurrent Project Scheduling and Material Ordering

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Abstract : Concurrent planning of project scheduling and material ordering can provide more flexibility to the project scheduling problem, as the project execution costs can be enhanced. Hence, the issue has been taken into account in this paper. To do so, a mixed-integer mathematical model is developed which considers the aforementioned flexibility, in addition to the materials quantity discount and space availability restrictions. Moreover, the activities duration has been treated as decision variables. Finally, the efficiency of the proposed model is tested by different instances. Additionally, the influence of the aforementioned parameters is investigated on the model performance.

Keywords : material ordering, project scheduling, quantity discount, space availability

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