

Abstract

Adel M Belal

Applying Integer Linear Modeling to Solve Time Cost Tradeoff Problems in Construction Projects

Time-Cost Optimization (TCO) problem is essential in construction project planning and control. The acceleration of project activities can be achieved through different developed and published TCO models and methods. In this paper, an Integer Linear Model is developed to obtain solutions of time-cost tradeoff (TCT) problems for a real construction project. The proposed model is applied to crash the duration of a real construction project so as to maintain the original duration at minimum cost. The obtained results show the benefits of applying TCO using a suitable model in acceleration project activities at minimum cost. For each model solution, the new activities durations (after crashing) are applied in Primavera Project Planner (P3) to ensure the accuracy of results. Scheduling Project (using P3) for all resulted solutions shows full compatibility for the desired project finished date