

A linear programming approach to maximize savings by stretching noncritical activities.

ABSTRACT

In this research, some concepts of linear programming and critical path method are reviewed to describe recent modeling structures that have been of great value in analyzing project time-cost trade-offs problems. This paper mainly provides a framework for the approach of stretching noncritical activities to complete the project in shortest possible duration at least cost within available maximum budgeting. This is achieved by crashing all activities simultaneously in the project network then using Linear Programming (LP) technique to build a model to maximize the savings that will yield from stretching noncritical activities. The noncritical activities can be stretched to their normal time until all slack in the different noncritical paths network is used up. The resultant savings from using of linear programming model must be subtracted from the initial cost of crashing all activities to obtain the final cost of project.

Keyword: Linear programming; Time-cost trade-off approach; Crashing; Stretching.