Post Evaluation of Project Cost Overrun by Using Interpretive Structural Modeling

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Abstract

The problem of cost overrun in construction projects is a result of various interacting factors. This study attempts to identify the critical factors causing a cost overrun in a large construction project of gas plant taken as a case study. A group of project management experts from the academia side and from the top managers from the project had met in a brainstorming discussion for identifying the factors which caused the project overrun and the interrelationship among the identified factors. Thirteen factors were identified and analyzed based on the group brainstorming. Interpretive Structural Modeling (ISM), a well-established methodology for simplifying the complex structure of interacting elements, is used to model the structural relationships among the thirteen interacting factors that ultimately influenced the overall cost overrun. The ISM identified four factors (two external and two internal) as the root causes of the budget overrun. These factors are: the weakness of the U.S. Dollar; changes in governmental regulations; poor cost estimation and poor coordination among the project parties. Taking appropriate actions to minimize the influence of these factors can ultimately lead to better control of future project costs. This study is of value to managers and decision makers because it provides them with a powerful yet very easy to apply tool for investigating problems related to cost overrun.