

## Optimization Technique for the Contractor's Portfolio in the Bidding Process

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**Abstract :** Selection between the available projects in bidding processes for the contractor is one of the essential areas to concentrate on. It is important for the contractor to choose the right projects within its portfolio during the tendering stage based on certain criteria. It should align the bidding process with its origination strategies and goals as a screening process to have the right portfolio pool to start with. Secondly, it should set the proper framework and use a suitable technique in order to optimize its selection process for concertation purpose and higher efforts during the tender stage with goals of success and winning. In this research paper, a two steps framework proposed to increase the efficiency of the contractor's bidding process and the winning chance of getting the new projects awarded. In this framework, initially, all the projects pass through the first stage screening process, in which the portfolio basket will be evaluated and adjusted in accordance with the organization strategies to the reduced version of the portfolio pool, which is in line with organization activities. In the second stage, the contractor uses linear programming to optimize the portfolio pool based on available resources such as manpower, light equipment, heavy equipment, financial capability, return on investment, and success rate of winning the bid. Therefore, this optimization model will assist the contractor in utilizing its internal resource to its maximum and increase its winning chance for the new project considering past experience with clients, built-relation between two parties, and complexity in the exertion of the projects. The objective of this research will be to increase the contractor's winning chance in the bidding process based on the success rate and expected return on investment.

**Keywords :** bidding process, internal resources, optimization, contracting portfolio management

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