

Construction Contractor Pre-Qualification Using Multi-Attribute Utility Theory: A Multiplicative Approach

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Abstract : The industry is often criticized for inefficiencies in outcomes such as time and cost overruns, low productivity, poor quality and inadequate customer satisfaction. To enhance the chances for construction projects to be successful, selecting an able contractor is one of the fundamental decisions to be made by clients. The selection of the most appropriate contractor is a multi-criteria decision making (MCDM) process. In this paper, multi-attribute utility theory (MAUT) is employed utilizing the multiplicative form of utility function for ranking the prequalified contractors. Performance assessment criteria covering contracting company attributes, experience record, past performance, performance potential, financial stability and project specific criteria are considered for contractor evaluation. A case study of multistoried building for which four contractors submitted bids is considered to illustrate the applicability of multiplicative approach of MAUT to rank the prequalified contractors. The proposed MAUT decision making methodology can also be employed to other decision making situations.

Keywords : multi-attribute utility theory, construction industry, prequalification, contractor

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