

**PARTNER PERFORMANCE EVALUATION PROBLEM FOR CONSTRUCTION
PROJECTS**

MUSUMBA^{1*} G. W* & WARIO², R.

¹Department of Computer Science, Dedan Kimathi University of Technology, P.O. Box
657-10100, Nyeri, Kenya

²Department of Computer Science and Informatics, University of Free State, Private
Bag X13 Kestell 9866-South Africa

Received January 2017; Revised March 2017; Accepted June 2017

ABSTRACT

A team of contractors with varied specializations collaborate in construction projects. Each member's performance determines the success of these projects. These collaborations' competitiveness can be jeopardized if indications of how partners perform are not determinable. This is attributable to stepwise nature of human evaluations. Few research works have investigated techniques for evaluating contractors' performance. This study defined partners performance evaluation problem (PaPEP) in the construction sector as a multi attribute represented in a hierarchical structure. Analytical Hierarchy Process (AHP) a Multi-Criteria Decision Making (MCDM) algorithm was designed and used by different project consultants to evaluate the performance of partners to implement a mechanical engineering works for a building. Six case study groups were used to verify the results. PaPEP is a MCDM problem, solvable using AHP. Using AHP, it has been shown how evaluation preference and consensus can be attained if a group decision-evaluation process is used in the PaPEP. It can be stated that AHP can be incorporated in the design and development of new techniques for the PaPEP for construction projects. AHP algorithm can be used when evaluators' judgements is precise.

Keywords: Multi Criteria Decision Making (MCDM), Analytical Hierarchy Process (AHP), Partners Performance Evaluation Problem (PaPEP), Performance Prediction

*Correspondence to: **George W. Musumba**, Department of Computer Science, Dedan Kimathi University of Technology, P.O. Box 657-10100, Nyeri, Kenya. **E-mail:** musumbaggw@gmail.com