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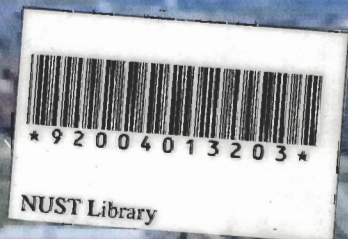
FACULTY OF THE BUILT ENVIRONMENT

Department of Quantity Surveying

AN EVALUATION OF THE EFFECTIVENESS OF VALUE ENGINEERING IN THE CONSTRUCTION FIRMS IN BULAWAYO, ZIMBABWE.

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*A Dissertation submitted to the Department of Quantity Surveying in partial
fulfillment of the Bachelor of Quantity Surveying Honours Degree*

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ABSTRACT

Cost, schedule, and quality are the main indicators of value in construction projects. These indicators are highly interrelated and require some balance and trade-off among them to achieve efficient overall control over project performance. Today this underpins what is known as Value Engineering. Most of the related past work only implicitly assume uniform quality when evaluating time/cost tradeoffs, but do not model quality explicitly. For a contractor who subcontracts most tasks of a project and who face decisions concerning the level of quality to perform for each task, this is not a realistic assumption. In this paper, the researcher extends the standard discrete time/cost trade-off problem by assuming that each option for each task is evaluated for its duration, cost, and also its quality. Focusing on these value indicators, the primary objective of this study is to establish how construction firms have adopted and benefited from the concepts of Value Engineering and to establish ways of improving client satisfaction. To facilitate this evaluation, performance data have been collected, using a questionnaire survey, from 12 contractors. The survey was followed by structured interviews with construction practitioners working for contractors to elicit procedures followed when creating clients' value for money, concepts utilized and benefits, in terms of time, cost and quality that have accrued as a result of adopting Value Engineering principles. Using the collected data, performance was analysed and shows that even the application of Value Engineering concepts is not helping much in terms of reducing costs and shortening projects duration. However, the concepts are producing pre-determined or required results on individual work packages including expected quality levels of project outcomes. While cost and schedule data was perceived to provide objective metrics that are fairly easily quantifiable, the other aspect of a project, the level of "quality" achieved, may be more subjective. This is mirrored by many different definitions of quality that emerged. Additionally, when subjectivity is involved, the "eye of the beholder" becomes a major factor in evaluating how well a project performed and how successful it was perceived. It is thus recommended that more research be conducted in the area of implementing Value Engineering to involve all the project stakeholders. Some pertinent findings of the study are discussed. Generally, Value Engineering can be used by contractors to make management decisions that explicitly model and consider quality as well as time and cost, so that better and more appropriate decisions can be made for a particular situation.