



**COLLEGE OF ENGINEERING, DESIGN, ART AND TECHNOLOGY  
SCHOOL OF ENGINEERING**

**INVESTIGATION OF VARIATIONS IN PAVED ROAD CONSTRUCTION  
UNIT RATES - A CASE STUDY OF UGANDA**

**BY**

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**A Dissertation Submitted to the Directorate of Research and Graduate Studies of  
Makerere University in partial fulfillment of the Requirements for the Award of a  
Degree of Masters of Science in Civil Engineering of Makerere University**

**May 2012**

## ABSTRACT

The global economic situation that has affected all sectors of economies has seen widespread variations in prices of many sectors including construction. In Uganda, the road sector has seen an upward trend in the prices of construction and maintenance over the past years. This trend has caused concern not only to the GoU but also to the public which has attributed it to corruption, inefficiency of government departments handling procurements and non-competitive procurement practices. Escalating costs of road construction undermine the Government's efforts to improve roads, reduce the amount of infrastructure that can be provided from a given funding commitment in addition to creating adversarial relationships between parties. There has been no in-depth analysis of what causes road work construction cost escalation and its trend. This study was meant to derive pavement construction unit rates and to investigate the relationships between derived rates and actual contractors' bid rates. It was also meant to find out why contractors operating in the same environment have far different rates and also to establish cost trends.

The methodology involved the use of checklists, interviews and case studies. This entailed derivation of unit rates for individual inputs of pavement layers based on recommendations of the MoWT specifications. The resultant unit rates were as a result of the prevailing market prices. Contractors' rates were obtained from the leading implementers of both development and rehabilitation road projects and were stratified into two groups of regional and international contractors. A comparative analysis was done to establish whether there were significant differences between the derived and contractors' rates for the different classifications of contractors. In addition, construction cost trends were determined from previous projects while putting into consideration the financial indices.

Data analyses showed that there were strong correlations between contractors' rates and derived rates with coefficients of 0.915 and 0.745 for international and regional contractors respectively. For both classes of contractors, the probability value ( $p$ )  $p < \alpha/2$  thus at 95% confidence level, the null hypothesis was rejected. Trend analysis showed that rates for G15, gravel and surfacing were increasing hence responsible for the current high costs of road construction. Future studies should be carried out to derive unit rates for other road construction activities such as drainage, structures and ancillary works. In addition, future studies should focus on packaging projects according to type, size, duration of construction and location in order to provide insights that influence the bid prices.

### Key Words

Contractors' unit rates, cost escalation, derived unit rates, paved roads, Uganda.