ABSTRACT

Construction supply chains encompass the Flows of Materials, Cash, Labor, Information, Plant, Equipment and Temporary Works that originate from a variety of different parties. Project Lead Time Management, Quality and in effect cost management are some of the primary measures of road construction project success. Generally, a road construction project is considered successful if the project is completed within the expected timeframe, stated cost and budget. In Kenya, majority (70%) of road construction projects have had time overruns in their completion. This has led to led to unnecessary cost overruns by upto Kshs 5 billion in some cases. Inspite of these, no study has been done to establish the influence of Supply Chain Flows and Supply Chain Performance on Lead Time of road construction projects in Kenya. This research was thus centered on establishing the Influence of Supply Chain Flows (moderated by Supply Chain Performance) on the Lead Time of Road Construction Projects in Kenya. The study was guided by the following objectives; to establish the relationship between information flow, material flow, labour flow and cash flow management on road construction projects' lead time in Kenya. This study was anchored on Simulation Theory and Goldrat's Theory of Constraints (TOC). Preliminary investigations was carried out by visiting two road construction projects over a period of two weeks to gain an understanding of the ways in which supply chain flows impacted on supply chain performance & subsequently on road construction project lead time. This was followed by the main cross sectional survey designed to collect the required data. Stratified random and purposive sampling was used to select the sample size. The study comprised of a target population of 116 and a sample size of 90 respondents determined by Yaro Yamane Formula (1967). Data was collected using structured questionnaires and focus group interview guides. The Cronbach's Alpha coefficient was used to measure the reliability on a 5-point Likert Scale for multiple items obtained from a pilot survey while content validation of the questionnaire was done by supervisors from the school of business. The Cronbach's Alpha coefficient for the pilot study was: validity α=0.929 and reliability α=0.930. The Data analysis was done by multiple regression analysis and content analysis. The hypotheses were tested using Pearson chi-square test of independence at a significance level of 0.05. The findings show that the information flow($F=15.311, R^2 = 0.483$, Sig=0.000 at α=0.05), material flow($F=12.738, R^2 = 0.605$, Sig=0.024 at α=0.05), labour flow($F=15.655, R^2=0.328$, Sig=0.028 at α=0.05) and cash flow($F=13.679, R^2=0.681$, Sig=0.027 at α=0.05) management were significant determinants of road construction lead time. Also, supply chain performance had a higher significant moderating effect on the relationship between (information flow, material flow, labour flow and cash flow management) on lead time of road construction projects($F(1,87)$ 29.284, $R^2=0.633$, p=0.026, α=0.05) compared to before moderation at ($F=19.124, R^2 = 0.629$, Sig=0.045 at α=0.05). The study concluded that supply chain performance has a higher significant moderating effect on the relationship between supply chain flows (information flow, material flow, labour flow and cash flow management) and lead time of road construction projects. The study thus recommends thatcontractors should acquire and establish a sofware that would help manage information flow in road projects. Contractors should acquire an inventory management sofware to manage material demand and supply. Contractors and project managers establish a highly skilled and effective labour force at the initial stages of engagement. The GoK should also strive to improve the technical training in various technical areas applicable tothe road construction industry. The GoK being the client in most projects should also ensure cash for each road project is available before procurement of the contractors. Finally, KeNHA should put regulations requiring all road