

INTEGRATION LEAN CONSTRUCTION CONCEPT TO THE SRI LANKAN ROAD CONSTRUCTION INDUSTRY.

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ABSTRACT

The interconnection of activities required for the design and construction of building and infrastructure involves the interplay between people, technology, situations, and decisions. It requires the astute coordination of labor, materials, and plant to realise the planned progress of work. Minimizing waste maximizing value while continuous improvement is the concept of lean. Lean construction has proven to be an alternative for such improvements so as to satisfy client by creating customer value. Through its origins in the Toyota Production System, lean is now applied as an innovative way to manage the design and construction of projects with the use of tools which address project constraints, such as complexities and uncertainties, among others. This research is an effort to implement lean construction concept to the Sri Lankan road construction industry.

Research approach involved the use of primary data, collected from Questioner survey and semistructured interviews with qualitative and quantitative mixed type research. The foremost objective was to optimize the cost, quality and time in road construction with the application of lean construction concept and identify most important lean tool among 5S, Construction process analysis, just in time, Value stream mapping, Kanban and last planner and adapted to road construction industry. Finally, the aim is to identify the most important lean construction tool for road construction improvement.

Further, this paper explores barriers for successful lean implementation and provides a concise description of the overcome barriers and gain techniques to proceed effective and efficient in road construction activities. Thus, the study concludes that Lean Construction is suitable and acceptable in the Sri Lankan context. Overall, the study offers an approach to test Lean Construction in a road construction industry using an opinion survey.

Keywords: Lean construction concept, road construction, Toyota production system