

Establishing a Sustainable Construction Industry: Review of Barriers That Inhibit Adoption of Lean Construction in Lesotho

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Abstract : The Lesotho construction industry fails to embrace environmental practices, which has then lead to excessive consumption of resources, land degradation, air and water pollution, loss of habitats, and high energy usage. The industry is highly inefficient, and this undermines its capability to yield the optimum contribution to social, economic and environmental developments. Sustainable construction is, therefore, imperative to ensure the cultivation of benefits from all these intrinsic themes of sustainable development. The development of a sustainable construction industry requires a holistic approach that takes into consideration the interaction between Lean Construction principles, socio-economic and environmental policies, technological advancement and the principles of construction or project management. Sustainable construction is a cutting-edge phenomenon, forming a component of a subjectively defined concept called sustainable development. Sustainable development can be defined in terms of attitudes and judgments to assist in ensuring long-term environmental, social and economic growth in society. The key concept of sustainable construction is Lean Construction. Lean Construction emanates from the principles of the Toyota Production System (TPS), namely the application and adaptation of the fundamental concepts and principles that focus on waste reduction, the increase in value to the customer, and continuous improvement. The focus is on the reduction of socio-economic waste, and protestation of environmental degradation by reducing carbon dioxide emission footprint. Lean principles require a fundamental change in the behaviour and attitudes of the parties involved in order to overcome barriers to cooperation. Prevalent barriers to adoption of Lean Construction in Lesotho are mainly structural - such as unavailability of financing, corruption, operational inefficiency or wastage, lack of skills and training and inefficient construction legislation and political interferences. The consequential effects of these problems trigger down to quality, cost and time of the project - which then result in an escalation of operational costs due to the cost of rework or material wastage. Factor and correlation analysis of these barriers indicate that they are highly correlated, which then poses a detrimental potential to the country's welfare, environment and construction safety. It is, therefore, critical for Lesotho's construction industry to develop a robust governance through bureaucracy reforms and stringent law enforcement.

Keywords : construction industry, sustainable development, sustainable construction industry, lean construction, barriers to sustainable construction

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