Lean Construction Techniques: A Framework Towards Elimination of Waste in Construction Industry

Richard Hannis Ansah¹, Shahryar Sorooshian¹, and Shariman Bin Mustafa¹
¹Universiti Malaysia Pahang
Lebuhraya Tun Razak, 26300 Kuantan Pahang, Malaysia.
richanisah13@gmail.com

Abstract

The responsibility of the project management team is to discover, utilize and deploy tools, skills, techniques and available resources for meeting and controlling schedule, budget and quality. However, it’s been argued that the current practices of project management or conventional project management approaches rest on defective model and its control and therefore has been criticized to be ineffective to influence construction projects cycle significantly. This has resulted in a number of wastes created in the industry. In this dynamic environment with complexities, uncertainties, fast tracked and short duration projects, multiple competing, frequent changing demands from clients, technology and the market, the application of the concept of production philosophy, known as ‘Lean Production’, which focuses on the elimination of wastes including; overproduction, lead time, transportation, inappropriate processing, inventories, unnecessary movements, rework, making do and design wastes has been very significant and effective approach, thus, ‘Lean Construction (LC)’. The concept of LC as indicated by many researchers leads to improved delivery systems and processes through the elimination of wastes, increase productivity, fulfill client’s requirements, ensures environmental sustainability and improve overall project and financial performance. This paper discusses the concept of LC and highlights the significance of its application in the construction industry.

Keywords
Conventional Project Management, Lean Construction (LC), Lean Production, Performance, Waste,

Biography

Richard Hannis Ansah is a Research Assistant at the Faculty of Industrial Management, University of Malaysia Pahang. He holds Postgraduate Diploma in Human Resources Management from ICM, Postgraduate Certificate in Human Resources Management from Management Development and Productivity Institute (MDPI), Ghana, Bachelor of Arts in Political Science and Linguistics at University of Ghana, and currently pursuing Master of Science in Industrial Management at University of Malaysia Pahang. He has published and reviewed a number of journal and conference papers. Hannis has completed research projects with Ghana Statistical Services and University of Ghana. His research interests include; construction, TQM, procurement, supply chain and logistics, operations research, manufacturing, lean, project management, operational health and safety, human resources management, etc. He has worked as a procurement specialist with a major construction company (SASCO GROUP) in Qatar, research supervisor at Ghana Statistical Services, research and teaching assistant at University of Ghana, among others.

Shahryar Sorooshian is a Senior Lecturer at the Faculty of Industrial Management, University of Malaysia Pahang. He had his PhD in Industrial Engineering from Malaysia. He has published a wealth of books, journal and conference papers with honors and awards. Dr. Sorooshian has completed research projects with University of Malaysia Pahang and Taylors University. His research interests include; industrial management, managerial decision makings, business/management performance, operational management, SMEs, simulation, optimization, reliability, scheduling, construction, TQM, supply chain and logistics, E-commerce, balance scorecard, counseling and psychotherapy, manufacturing, lean, among others. He is member of board of some prestigious journals and conferences including; Research Journal of Business Management, Asian Journal of Industrial Engineering, Singapore Journal of Scientific Research, Journal of Applied Sciences, International Journal of Operations and Logistics Management, Iranian Journal of Management Studies, Scientific Journal of Management Science and Engineering, Asia Pacific Journal of Management & Entrepreneurship Research, International Journal of Research

© IEOM Society

Shariman Bin Mustafa is currently a senior lecturer at the Faculty of Industrial Management, University of Malaysia Pahang. Mr. Sharman holds a PhD form Malaysia. He has published a number of books, journal and conference papers with honors and awards. He has completed research projects with some institutes including University of Malaysia Pahang. His research interests include; industrial management, Solar Cell System Design, Mechanical engineering, manufacturing engineering, simulation, optimization, construction, TQM, construction, operations research, Ship Navigation System, FMEA, among others. He is a member board of a number of journals and conferences. He served as Deputy Dean of the Faculty of Industrial Management, University of Malaysia Pahang.