

Industry 4.0 Implementation in Sri Lankan Manufacturing Firms: A Lean Perspective

Lahiru Bandara^{1*}, Amila Withanaarachchi², Suren Peter³

¹*Department of Industrial Management, University of Kelaniya, Dalugama, Kelaniya, lahiruadikari1997@gmail.com*

²*Department of Industrial Management, University of Kelaniya, Dalugama, Kelaniya, amilaw@kln.ac.lk*

³*Business School, Sri Lanka Institute of Information Technology, Malabe, Sri Lanka, suren.p@sliit.lk*

Manufacturing industries require the highest quality and efficiency throughout their value chain, to compete with countries having a labor cost advantage. Today, manufacturing firms are in a fast-phased run to automate their processes and increase value chain integration through advanced technologies. Industry 4.0 has gained traction within this community, where its components like IoT, Big data, and Cloud computing are being used by manufacturing firms to optimize and increase the efficiency of their workplaces. Obtaining the proper outcomes from these advanced technologies has been an issue for most of its users. Very few studies were found in the literature, that propose ways to mitigate the issues faced by these companies in their Industry 4.0 journey. Lean concepts are a popular and proven methodology used by firms worldwide to decrease the complexity and increase the productivity of their processes. Based on a systematic literature review, the study identifies the current knowledge on mitigating the barriers faced by manufacturing firms in Industry 4.0 implementations. To address the knowledge gap identified in the literature review, the study proposes and statistically tests a framework, on how the manufacturing environment can be improved to obtain the expected outcomes of Industry 4.0 implementations, through a lean theoretical lens. Thus, the stakeholders of the company can contribute towards successful implementations of Industry 4.0 while organizational processes are being standardized and optimized to integrate these advanced technological shifts.

Keywords: *industry 4.0, manufacturing, lean*