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Procurement optimization with Industry 4.0 in ERP based Sri Lankan apparel industry: a systematic review of literature

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Apparel industry is the Sri Lanka's largest export industry and the highest net foreign exchange earner since 1992. It Provides wide range of clothing solutions for renowned international brands. Therefore, satisfying both customers and suppliers is a mandatory requirement in apparel industry. To survive in the market and acquire competitive edge, industries need to invest in advanced technology. However, most companies fail due to poor integration of technology in their supply chain. The concept of Procurement 4.0 has emerged to optimize supply chain performance developing new value propositions and meeting new business needs. It is the integration of Industry 4.0 concepts in procurement. To adapt these new technologies in an enterprise, a strong ERP system which can act as a platform for integration is required. Although Industry 4.0 concepts have been studied in different industrial contexts, a limited number of researches have been conducted on the use of emerging technologies such as Internet of Things (IoT), Robotic Process Automation (RPA), Big data and Cognitive analytics, Artificial Intelligence (AI) and Cloud technologies etc. in relation procurement while more existing researchers have focused on e-procurement. Therefore, this study explores how the ERP based apparel industry can optimize their procurement process with the emerging procurement technologies from Industry 4.0. In this study, a systematic review of literature was conducted based on the keyword-based search and content analysis, and 20 articles were selected out of 50 articles depending on the relevance to the major areas of study. Based on the findings, a framework was developed incorporating Industry 4.0 technologies that can be used in each step of the procurement process and their impact on procurement performance have been identified. In conclusion, this research provides a framework for implementing technology-based procurement practices. Apparel manufacturers can use the developed framework as a guideline to identify the current state of technology implementation in procurement process and to identify the next potential steps towards procurement 4.0. Further, the results of the study could be generalized and applied to any manufacturing industry. Future researches can be carried out to validate this model through a case study approach.

Keywords: Apparel industry, Procurement process, Industry 4.0, Optimization