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Development of an industry 4.0 based information sharing model for the apparel industry in Sri Lanka: A systematic review of literature

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The world is currently experiencing the benefits of the fourth industrial revolution which is termed as Industry 4.0. The objective of this research is to identify the most appropriate Industry 4.0 tools to improve the productivity of intra and inter-organizational information flow in the Sri Lankan apparel industry. Inefficient Information flows across the supply chain partners in the Sri Lankan apparel industry has been identified as a major drawback contributing to reduced performance levels. The interruption of the flow of information within the organization and with other stakeholders cause problems such as disruption of smooth production flow, production delays, confusion among employees and poor customer interactions, etc. The methodology used in this research was a structured literature review in which research papers published under the keywords industry 4.0, sustainable supply chains, and information sharing models were reviewed. Approximately 20 research papers published between the years 2015-2019 in key research databases including Scopus, Emerald Insight and Research Gate were referred and reviewed to gather facts using the above keywords. It has been identified that there is a lack of researches in the area of information sharing within the organizational level using industry 4.0 tools. Then a pilot survey has been conducted with two of the leading Sri Lankan apparel manufacturing companies in order to gain an industrial perspective. The developed model is focused on improving the productivity of information sharing within different functional units of the organization and among the end-to-end Supply Chain partners by combining Industry 4.0 tools. This model guides the companies in the apparel industry to create efficient information sharing across the supply chain, through mapping the information flow across the partners upon the ERP integration with industry 4.0 tools. Briefly, the model suggests extracting data from the work floor through IoT devices, analyzing using big data and Artificial Intelligence before transmitted to the relevant departments. Using Augmented Reality and simulations work floor activities can be easily communicated to the workers. Cloud-based solutions are used for vertical integration with other organizations.

Keywords: Apparel supply chain, Industry 4.0, I-ERP Systems, Information sharing models