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Application of industry 4.0 concepts to optimise workforce performance in human resource processes: context of Sri Lankan apparel industry

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To cope with the new technologies driven by the fourth industrial revolution such as Cloud based systems, Internet of Things, Virtual Reality, Artificial Intelligence, skill development is vital in order to enhance the performance of the workforce. Advancement of the technology will affect disruptively for all organisational functions including human resource. There is a threat that humans will be replaced by advanced technological systems in the near future. It will badly affect all areas of operations including human resources, if organisations fail to absorb the technology. Even though these technologies have been widely used in many countries, developing countries such as Sri Lanka are far behind. This paper focuses on how to improve the performance of the employees by developing necessary skills, using various technologies included in Industry 4.0. Previous researchers have mentioned about how industry 4.0 applications disrupt human resource but not how to fulfil those gaps. Sri Lankan apparel industry has been identified as one of the key industries to implement these concepts to measure the workforce performance since it involves both human and machinery in its processes. By introducing advanced technologies to areas such as recruitment, talent on-boarding and off-boarding, training and development, both time and cost for unnecessary processes can be reduced while increasing the efficiency and effectiveness of the employees. Initial data collection has been conducted through two questionnaires based on a sample of 30 individuals from each level which are above executive and below executive from human resource departments. Five apparel firms were chosen to collect the data as a quantitative approach. Questionnaire was developed to discover the relationship between variables such as industry 4.0 application, skill development, job satisfaction and job performance to check how they intervene with enhancing performance. Data analysis was done through structural equation modelling using AMOS supporting software. The study suggests ways to optimise skills and satisfaction level of workforce performance using industry 4.0 applications with smart human resource concepts. In addition, an innovative model will be introduced to enable apparel industry to enhance the process of human resource development using technologies through industry 4.0 application.

Keywords: Apparel industry, Industry 4.0 application, skill development, smart human resource