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# Assessing the digitalisation level of the Tanzanian apparel industry: Industry 4.0 perspectives

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## Abstract

**Purpose** – Industry 4.0 has an inimitable potential to create competitive advantages for the apparel industry by enhancing productivity, production, profitability, efficiency and effectiveness. This study, thus, aims to assess the digitalisation level of the Tanzanian apparel industry through the Industry 4.0 perspectives.

**Design/methodology/approach** – A mixed-methods-based approach was deployed. This study deployed semi-structured interviews, document review and observation methods for the qualitative approach. For the quantitative approach, closed-ended questionnaires were used to ascertain the digitalisation levels and maturity level of the textiles and apparel (T&A) factories and small and medium-sized textile enterprises in Tanzania. The sample size was 110, with participants engaged through the purposive sampling technique.

**Findings** – Industry 4.0 frameworks evolved into practices mainly since 2011 in several service and manufacturing industries globally. For Tanzania, the findings indicate that the overall maturity level of the T&A industries is 2.5 out of 5.0, demonstrating a medium level of adoption. Thus, the apparel industries are not operating under the industry 4.0 framework; they are operating within the third industrial revolution – Industry 3.0 – framework. For such industries to operate within the fourth industrial revolution – Industry 4.0 – that is only possible if there is significantly well-developed industrial infrastructure, availability of engineering talent, stable commercial partnerships, demand from the marketplace and transactional relationship with customers.

**Research limitations/implications** – This study's limitations include: firstly, Industry 4.0 is an emerging area; this resulted in limited theoretical underpinnings in the Tanzanian perspectives. Secondly, the studied industries may not suffice the need to generalise the findings for the entire country, thus needing another study.

**Originality/value** – Although Industry 4.0 conceptual frameworks have been on trial in several industries since 2011, this is amongst the first empirical research on Industry 4.0 in the Tanzanian apparel industry that assesses the digitalisation levels.

**Keywords** Apparel industry, Industry 4.0, Digitalisation, Digital transformation, Digitalised technological system, Tanzania

**Paper type** Research paper

## 1. Introduction

For the past 11 years, several service and manufacturing factories have witnessed the growing interest in digital transformation – Industry 4.0 – globally (Bongomin *et al.*, 2020; Taifa *et al.*, 2021a). In today's context, almost all countries have installed Industry 3.0's and some Industry 4.0's technologies. The Tanzanian textiles and apparel (T&A) factories have also installed advanced technologies (Taifa and Lushaju, 2020). Researchers and academicians have undertaken much research to explore the benefits of implementing the fourth industrial revolution-related frameworks to enhance production, productivity, profitability and customer satisfaction (Taifa *et al.*, 2020). For example, in many developed

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