

# **The Role of Digital Technologies in the Circular Transition of the Textile Sector**

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## **Abstract**

In recent years, the Circular Economy has gained significant traction, driven by increased awareness among governments, companies, and consumers about the imperative to optimize resource consumption. The clothing industry, recognized as one of the most resource-intensive sectors, is now actively adopting circular practices to supersede traditional linear strategies. These circular practices may cover all the aspects of product lifecycle from the design and production, usage, to the end of life aiming at valuing as much as possible the resources used. In parallel to that, the fourth industrial revolution is reshaping manufacturing companies by integrating key enabling technologies on the shop floor, enhancing operational efficiency alongside existing information systems. Nevertheless, exploring how these technologies may facilitate the circular transition of the textile industry has been performed in a scattered manner by some authors, and a comprehensive picture covering the entire product lifecycle is still missing. Therefore, this paper aims to address this research gap through a review of the extant literature to integrate the existing studies into a unique framework helping textile industries to exploit the digital transformation to undertake a circular transition too.

**Keywords:** Circular Economy, Digital, Clothing, Product lifecycle