

ARTIFICIAL INTELLIGENCE AND CIRCULAR ECONOMY: A STATE OF THE ART

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Introdução

The adoption of artificial intelligence (AI) in business helps in the correct allocation of resources and their efficient use (Di Vaio, Syriopoulos, Alvino & Palladino, 2021). The benefits of AI allow operational activities previously performed by humans to be replaced by higher-value work and unify processes by solving complex problems (Nishant, Kennedy & Corbett, 2020). In this way, we access better and faster results (Burger, Kanbach, Kraus, Breier & Corvello, 2023).

Problema de Pesquisa e Objetivo

Intending to suggest consistent AI applications in the transition to a circular economy, we developed a study focused on how artificial intelligence can contribute to the transition of companies to a circular economy. The research roadmap is based on a systematic literature review and our assessment to identify AI contributions in the transition of the business to a circular economy.

Fundamentação Teórica

Ünal, Urbinati, Chiaroni, and Manzini (2019), showed that the adaptation and configuration of a circular business model require certain internal and external contextual factors, valuing the local thinking of waste in management practice, as expected from sustainable conduct between the productive chain. Although sustainability may be an effective way for companies to survive in the future, the implementation of sustainability systems may require the integration of various types of processes, to obtain better efficiency and cost-effectiveness (Aytekin et al., 2022).

Discussão

Our study aimed to identify how artificial intelligence can contribute to the transition of companies to the circular economy. Our results demonstrate that the basic precepts of CE can be improved with the use of AI, providing efficiency and effectiveness. The transition from a linear economy to a circular economy requires commitment from the organization, in addition to financial resources that enable companies to adopt technological control that reduce time and human and financial resources.

Conclusão

The three categories help to elucidate the strong perception of the relationship between the circular economy and emerging technologies, AI Organizational, Financial, and Implementation Management, and the influence of the synergy between Industry 4.0 and the circular economy. The role of applying technologies and artificial intelligence to assist in the deployment and closure of the circular economy, and supply chain collaboration in existing businesses, and new businesses with circular characteristics.

Referências Bibliográficas

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