

Targeting Net-Zero through Industry 4.0 based on People, Process, and Technology (PPT) Framework: A Literature Review*

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Abstract

The fourth industrial revolution, or industry 4.0 (I4.0), is being adopted by organizations to enhance their performance and competitiveness. Aligning digital transformations with net-zero sustainability strategies has become crucial in today's business environment. However, the impact of I4.0 technologies on achieving net-zero objectives varies, highlighting the need to understand critical success factors for targeting I4.0 applications towards net-zero sustainability. This pilot study aims to examine the existing literature on I4.0's role in achieving net-zero goals and assess the critical success factors for effectively integrating I4.0 technologies with net-zero sustainability strategies. The study conducts a comprehensive review of business and management articles from the Web of Science database, identifying critical success factors within the People, Process, and Technology (PPT) dimensions. The PPT framework, commonly used in organizational contexts, assists in facilitating digital transformations. The study finds that critical success factors encompass aspects such as employees and managers (People), business and government processes (Process), and different technology types and characteristics (Technology). The study provides valuable insights and guidance for researchers and practitioners seeking to leverage I4.0 technologies to accomplish net-zero sustainability objectives. Understanding the key factors that contribute to success allows organizations to strategically align their digital transformation efforts with net-zero sustainability goals. Additionally, the study highlights avenues for future research and exploration in this field.

Keywords: Fourth industrial revolution, Industry 4.0, Net zero, PPT framework.