The Challenges and Opportunities Associated with Different Digitalization and Automation Technology Approaches for the Construction Industry

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Abstract:

The implementation of Construction 4.0, characterized by the integration of advanced digital technologies in the construction industry, presents both challenges and opportunities for professionals across various roles and sectors. This study aims to comprehensively investigate the diverse approaches employed in the implementation of Construction 4.0 and their impacts on the construction industry. Survey data from a diverse sample of industry professionals, spanning a wide range of educational qualifications, roles, and experience levels, is analyzed using a range of statistical techniques, including categorical, binary, frequency, descriptive, inferential, regression, correlation, and factor analysis. The study sheds light on the critical factors influencing the successful adoption of Construction 4.0, providing valuable insights for practitioners, educators, and policymakers to optimize strategies and practices in this transformative era of construction technology.

Keywords:

Digitalized construction industry, Digital construction, Digitalization, Digital transformation, Industry 4.0 technologies, Construction 4.0, Emerging technologies, Critical success factors, Smart buildings, Infrastructure.