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DIGITAL TWIN APPLICATION IN CONSTRUCTION COST MANAGEMENT

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Abstract

In line with the current construction revolution, it is time for the construction industry to embrace innovation and technology. This is corresponding with the National Construction Policy 2030 (NCP 2030) that comes out with the aim to digitalize the entire construction industry towards the IR 4.0. The focus is to boost the nation's construction industry's competitiveness and recognition worldwide. The construction industry has undergone a significant transformation in recent years such as BIM, IoT including Digital Twin due to the incorporation of digital technologies. A digital twin is a virtual representation of a physical asset. It is still a relatively new concept in the construction industry, but it offers an innovative method for improving cost management strategies in construction projects. Applications of the digital twin in construction cost management have the potential to revolutionize conventional methods. Therefore, this study seeks to determine the level of understanding of construction industry players on the concept of digital twin applications in construction cost management by providing the concept and to explore the challenges and strategies in implementing the digital twin applications in construction cost management. This research employed a mixed-method approach by means of questionnaire survey and interview for data collection. 35 samples that consist of construction industry players from different organizations participated in this study. The data collected from the survey and interview are analyses through descriptive and content analysis. Overall, the findings find out the understanding of digital twin applications with its challenges and strategies to overcome it. This research contributes to the body of knowledge regarding digital twin applications and construction cost management. © 2025 by MIP.

Author Keywords

challenges; construction cost management; digital twin; strategies

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