Table S1: Number of citations of selected articles

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| **Serial number** | **Authors/ References** | **Title** | **Method** |
| 1 | Zheng et al. (2019) | An application framework of digital twin and its case study | Case study |
| 2 | Hasan et al. (2021) | Augmented reality and digital twin system for interaction with construction machinery | Laboratory experiment |
| 3 | Sacks et al. (2020) | Construction with digital twin information systems | Case study |
| 4 | Alizadehsalehi and Yitmen (2021) | Digital twin-based progress monitoring management model through reality capture to extended reality technologies (DRX) | Quantitative model |
| 5 | Jiang et al. (2021b) | Intelligent Building Construction Management Based on BIM Digital Twin | Laboratory experiment |
| 6 | Xu et al. (2019) | Cognitive facility management’: Deﬁnition, system architecture, and example scenario | Case study |
| 7 | Zhuang et al. (2018) | Digital twin-based smart production management and control framework for the complex product assembly shop-floor | Case study |
| 8 | Peng et al. (2020) | Digital Twin Hospital Buildings: An Exemplary Case Study through Continuous Lifecycle Integration | Case study |
| 9 | Kim et al. (2021) | Enhanced subcontractors’ allocation for apartment construction project applying conceptual 4D digital twin framework | Case study |
| 10 | Jiang (2021) | Intelligent Building Construction Management Based on BIM Digital Twin | Laboratory experiment |
| 11 | Antonio et al. (2019) | Office building occupancy monitoring through image recognition sensors | Laboratory experiment |
| 12 | Wu et al. (2021) | Regard: Symmetry-based coarse registration of smartphone’s colourful point clouds with CAD drawings for low-cost digital twin buildings | Laboratory experiment |
| 13 | Tan et al. (2019) | Application of IoT-aided simulation to manufacturing systems in cyber-physical system | Laboratory experiment |
| 14 | Agostinelli et al. (2021) | Cyber-physical systems improving building energy management: Digital twin and artificial intelligence | Case study |
| 15 | Zhao et al. (2022) | Construction Theory for a Building Intelligent Operation and Maintenance System Based on Digital Twins and Machine Learning | Mixed research |
| 16 | Porsani et al. (2021) | Interoperability between building information modelling (BIM) and building energy model (BEM) | Laboratory experiment |
| 17 | Kaewunruen and Xu (2018) | Digital twin for sustainability evaluation of railway station buildings | Case study |
| 18 | O’Grady et al. (2021) | Circular economy and virtual reality in advanced BIM‐based prefabricated construction | Case study |
| 19 | Kaewunruen et al. (2020) | Digital twin aided sustainability and vulnerability audit for subway stations | Case study |
| 20 | Rocca et al. (2021) | Integrating Virtual Reality and Digital Twin in Circular Economy Practices: A Laboratory Application Case | Laboratory experiment |
| 21 | Liu et al. (2021c) | Digital twin-based safety risk coupling of prefabricated building hoisting | Case study |
| 22 | Lee and Lee (2021) | Digital twin for supply chain coordination in modular construction | Case study |
| 23 | Bevilacqua et al. (2020) | Digital twin reference model development to prevent operators' risk in process plants | Laboratory experiment |
| 24 | Villa et al. (2021) | IoT open-source architecture for the maintenance of building facilities | Case study |
| 25 | Torrecilla-García et al. (2021) | Overall introduction to the framework of BIM-based digital twinning in decision-making in safety management in building construction industry | Mixed research |
| 26 | Zhou et al. (2021) | The Modelling of Digital Twins Technology in the Construction Process of Prefabricated Buildings | Mixed research |
| 27 | Lu et al. (2020a) | Semi-automatic geometric digital twinning for existing buildings based on images and CAD drawings | Case study |
| 28 | Lu et al. (2020b) | Digital twin-enabled anomaly detection for built asset monitoring in operation and maintenance | Case study |
| 29 | Wan et al. (2019) | Developing a city-level digital twin–propositions and a case study | Case study |
| 30 | Chevalier et al. (2020) | A reference architecture for smart building digital twin | Laboratory experiment |
| 31 | Chen and Huang (2020) | Digital twin in circular economy: remanufacturing in construction | Qualitative model |
| 32 | Cheng *et al.* (2023) | Machine learning enabled learning based optimization algorithm in digital twin simulator for management of smart islanded solar-based microgrids | Laboratory experiment |
| 33 | Wang *et al.* (2022a) | BIM Information Integration Based VR Modeling in Digital Twins in Industry 5.0 | Laboratory experiment |
| 34 | Tan *et al.* (2022) | Digital Twin-driven approach to improving energy efﬁciency of indoor lighting based on computer vision and dynamic BIM | Case study |
| 35 | Wu *et al.* (2022) | Digital twins and artificial intelligence in transportation infrastructure: Classification, application, and future research directions | Case study |
| 36 | Jiang et al. (2022a) | Digital twin-enabled smart modular integrated construction system for on-site assembly | Case study |
| 37 | Choi and Yoon (2023) | In-situ observation virtual sensor in building systems toward virtual sensing-enabled digital twins | Case study |
| 38 | Xie *et al.* (2023) | Digital twin enabled fault detection and diagnosis process for building HVAC systems | Case study |
| 39 | Jiang *et al*. (2023) | Intelligent control of building fire protection system using digital twins and semantic web technologies | Case study |
| 40 | Jiang *et al.* (2022b) | Digital twin enabled sustainable urban road planning | Case study |
| 41 | Honghong *et al.* (2023) | Digital twin enhanced BIM to shape full life cycle digital transformation for bridge engineering | Case study |
| 42 | Wang *et al.* (2022b) | Deep learning for assessment of environmental satisfaction using BIM big data in energy efficient building digital twins | Laboratory experiment |
| 43 | Lv *et al.* (2022) | SmartCity Construction and Managementby Digital Twins and BIM Big Datain COVID-19 Scenario | Quantitative model |
| 44 | Sun and Liu (2022) | Research on Intelligent Dispatching System Management Platform for Construction Projects Based on Digital Twin and BIM Technology | Case study |
| 45 | Zhang *et al.* (2022) | Artiﬁcial Intelligence-Enabled Sensing Technologies in the 5G/Internet of Things Era: From Virtual Reality/Augmented Reality to the Digital Twin | Case study |
| 46 | Yang *et al.* (2022a) | A Novel Embedding Model Based on a Transition System for Building Industry-Collaborative Digital Twin | Laboratory experiment |
| 47 | Popescu et al. (2022) | Building Better Digital Twins for Production Systems by Incorporating Environmental Related Functions—Literature Analysis and Determining Alternatives | Qualitative model |
| 48 | Zhao *et al.* (2021) | Digital-Twin-Based Evaluation of Nearly Zero-Energy Building for Existing Buildings Based on Scan-to-BIM | Case study |
| 49 | Daniotti *et al.* (2022) | The Development of a BIM-Based Interoperable Toolkit for Efﬁcient Renovation in Buildings: From BIM to Digital Twin | Case study |
| 50 | Bariah *et al.* (2022) | Digital Twin-Empowered Smart Cities: A New Frontier of Wireless Networks | Case study |
| 51 | Wang *et al.* (2022c) | Digital Twin-Enabled Real-Time Synchronization for Planning, Scheduling, and Execution in Precast On-Site Assembly | Mixed research |
| 52 | Madubuike and Chimay (2023) | Digital Twin–Based Health Care Facilities Management | Case study |
| 53 | Yang *et al.* (2022b) | Forecasting and Monitoring Smart Buildings with the Internet of Things, Digital Twins and Blockchain | Case study |
| 54 | choi *et al.* (2022) | Digital Twin-Based Integrated Monitoring System: Korean Application Cases | Case study |
| 55 | Corrado *et al.* (2022) | Combining Green Metrics and Digital Twins for Sustainability Planning and Governance of Smart Buildings and Cities | Case study |
| 56 | Allam *et al.* (2022) | Unpacking the ‘15-Minute City’ via 6G, IoT, and Digital Twins: Towards a New Narrative for Increasing Urban Efﬁciency, Resilience, and Sustainability | Qualitative model |