

Building Information Modeling and Internet of Things Integration in the Construction Industry: A Scoping Study

ABSTRACT

Building Information Modeling (BIM) has emerged as a prospective technology used to advance the practices of construction projects. Also, Internet of Things (IoT), as a technology that connects sensing devices to share information across platforms, has become essential in building and construction environment. The integration of BIM-IoT in the construction industry, a high-risk industry, might increase overall performance and reduce related hazards. However, there is a dearth of studies on the integration of BIM and IoT in the construction industry. Scoping review of literature was performed using various databases such as IEEE Xplore, Science Direct, ACM, Emerald Insight, and Taylors & Francis databases to explore the study demographics, research direction, category, adoption, and performance of the BIM-IoT integration for the construction industry. Out of 2270 articles identified, a total of 81 key and vital articles were found and collected in scoping review to formulate the research questions. The study results revealed that the literature related to BIM-IoT integration and adoption is moderately steady, with constant output in the last four years. Twelve of the contributions were identified, and five were identified to be proposed more and conducted by researchers: investigation, evaluation, model, framework, and system. Also, fifteen (18.51%) studies were identified from the selected works that were evaluated using performance measurement. The findings shed light on some of the most significant difficulties in research related to BIM-IoT integration in the construction industries as well as potential future initiatives.