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A framework to improve BIM implementation among South African construction companies

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2021
https://hdl.handle.net/10539/32978

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Abstract

The construction industry is key in the economic growth of many countries as it supports economic factors such as employment creation, gross domestic product growth and production just to mention a few. Therefore, the efficiency and effectiveness of this sector cannot be overemphasized. Building information modelling has proved to be the cornerstone of collaboration and efficiency within the construction industry to an extent that implementation and application is now mandatory in some of the more economically developed countries for all public sector projects. The implementation of building information modelling in the South African construction industry is still in the infancy stage. This research seeks to provide a framework for improving BIM implementation among South African construction companies based on their existing maturity. To achieve the research objectives and to answer the research questions, the online survey, literature review and case study research methods are adopted. The data collection methods include online questionnaire, Metasynthesis and interviews. Quantitative data analysis is done through Microsoft excel spreadsheets while qualitative data is analysed through the MAXQDA qualitative analysis software. Findings suggest that very few construction companies in South Africa have adopted the use of BIM but should work with all stakeholders during the implementation process to achieve success. Furthermore, the government of South Africa which is the largest client in the industry should lead the process of BIM implementation. The research presents a framework which can be adopted and or adapted by construction companies in the implementation of BIM. In summary, the South African construction industry stands to benefit from the implementation of BIM. However, the successful implementation requires a collective effort from all the involved stakeholders.