



# FIG Working Week 2024

19-24 May

Accra, Ghana

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# Benefits and Challenges of 5D BIM adoption: Perception of Quantity Surveyors.

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## BACKGROUND TO THE STUDY

- Building Information Modelling (BIM) has revolutionized the construction industry, changing the way buildings are designed, constructed, and managed (Malagnino et al., 2021).
- One of the most significant advancements in BIM technology is 5D BIM, which adds cost estimation and management capabilities to the traditional 3D model, and time scheduling to the 4D model (Abdullahi B Saka et al., 2019).
- Despite its potential benefits, there are still many challenges associated with the adoption and implementation of 5D BIM (Le, 2021).





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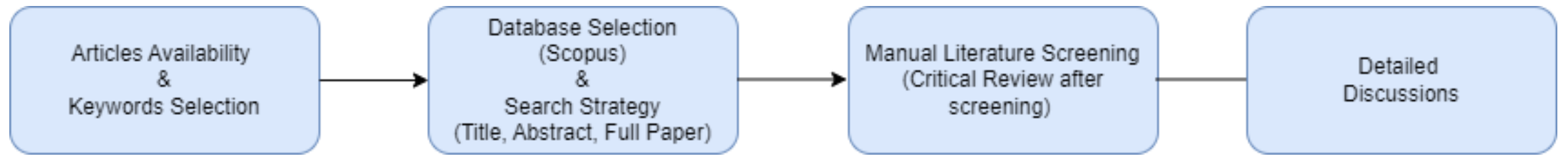
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## METHODOLOGY

- Content Analysis was utilized in the study based on the Scopus database
- Inclusion & Exclusion Criteria was adopted in selecting final documents for the review.





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## CHALLENGES IN 5D BIM ADOPTION AND IMPLEMENTATION

- Lack of Standardization
- - Skills Gap among construction professionals.
- - Integration with Existing Construction Processes
- - Cost
- - Legal and Contractual Issues
- - Resistance to Change
- - Lack of Industry Awareness

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## BENEFITS OF 5D BIM ADOPTION AS PERCEIVED BY QUANTITY SURVEYORS

- - Improved Cost Control
- - Enhanced Collaboration
- - Accurate Cost Estimation:
- - Improved Planning and Scheduling
- - Reduced Rework
- - Improved Decision Making
- - Enhanced Risk Management



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## CONCLUSION

- 5D BIM is an advanced level of BIM that integrates cost data into the model, providing real-time cost analysis and management throughout the project lifecycle.
- The benefits of 5D BIM adoption in construction cost management are numerous, including improved collaboration, increased efficiency, reduced risk of errors, and better decision-making.
- However, there are also several challenges that must be overcome for successful implementation, including change management, technical expertise, integration with legacy systems, data management, cost, standardization, legal and contractual issues, and resistance to change.

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## CONCLUSION cont.

- To overcome these challenges, construction stakeholders should invest in change management training to help their employees adapt to new workflows and processes, hire or train employees with the necessary technical skills, invest in software solutions that can integrate with legacy systems, develop scalable data management solutions, carefully evaluate the costs and benefits of 5D BIM adoption.
- Participation of industry groups to develop standardized workflows and processes, work with legal experts to develop contracts that address legal and contractual issues, and address resistance to change through effective communication and training.

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## CONCLUSION cont.

- The successful adoption of 5D BIM requires a comprehensive strategy that addresses these challenges and leverages the benefits of 5D BIM in construction cost management.
- Early Introduction of BIM knowledge into the curriculum of Quantity Surveying Departmental courses for students to acquire first hand training will help to create and develop the right awareness of 5D BIM for the future generations to leverage on.

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## CONCLUSION cont.

- By adopting 5D BIM, Cost consultants can improve their project efficiency, reduce the risk of errors, make better-informed decisions leading to improved project outcomes and increased profitability.
- As technology continues to advance, 5D BIM will become an increasingly essential tool in construction cost management, hence construction professionals and consulting firms that embrace this technology will have a competitive advantage in the industry..

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## THANK YOU FOR YOUR ATTENTION

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**SUSTAINABLE DEVELOPMENT GOALS**

International Federation of Surveyors supports the Sustainable Development Goals

## Commission 10

Construction Economics and Management

Serving Society for the Benefit of People and Planet



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