

## **ABSTRACT**

The greatest wealth of the world is made up of real estate, which is estimated at more than 50% of total global worth. Research has shown that the cost of maintaining real estate is greater when compared to the cost of development in the long run. Building Information Modelling (BIM) is regarded as an approach of minimising huge maintenance costs. As such, countries including UK, UAE, Canada, New Zealand, Australia and USA have introduced BIM in their building and construction projects. In South Africa, despite advocacy by the BIM Institute and other construction industry players, BIM adoption is still behind the global trend. This research applies the risk management process for those risks related with the implementation of BIM in maintenance of commercial buildings in Gauteng, South Africa. The mixed research method is used in this study through archival research, survey strategy and case study approach. Qualitative data analysis through descriptive and pattern coding is done using NVivo software, while quantitative data analysis is done using the risk matrix analysis tool.

The results show that the major risk categories for BIM implementation in maintenance of commercial buildings are Technical, Financial or Economic, Legal and Management related. A total of fifteen risks from all the categories were identified to be the riskiest and recommendations on the best response measures were made. The conclusion is that asset managers do not realize the benefit of BIM largely due to lack of BIM education, wrong and misleading information and the fear of the unknown. Subsequently, there is a need to follow in the footsteps of property industries such as the Irish industry that recognized this shortfall very early and led BIM leaders to focus on targeting the building owners and facilities managers and or asset managers to be better informed and correctly educated.

**Keywords:** Building Information Modelling, Risk Assessment, Building Maintenance