COLLEGE OF BUILT ENVIRONMENT
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THE BENEFITS OF BUILDING INFORMATION MODELLING IMPLEMENTATION IN CONSTRUCTION INDUSTRY PETALING JAYA, SELANGOR

A Project Report Submitted in Partial Fulfilment of The Requirements
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NURIZZATI SYAMIMI BINTI ZAIFUL
2021610298
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ABSTRACT

The purpose of this paper is to explore the benefits of implementation of Building Information Modelling (BIM) implementation in the construction industry. Building Information Modelling (BIM) has emerged as a revolutionary technology in the construction industry, transforming the way projects are designed, constructed, and managed. This abstract explores the numerous benefits of BIM implementation in the construction industry. BIM facilitates the creation and management of a digital representation of a building or infrastructure throughout its lifecycle, enabling improved collaboration, enhanced visualization, and efficient decision-making. The construction industry in Malaysia faces challenges in BIM adoption due to lack of consensus, cultural barriers, cost concerns, technological obstacles, and limited case studies. The adoption rate is low, and cost is the primary challenge. The industry is still in its early stages, with traditional processes preferred and interoperability issues affecting BIM implementation. Technological barriers, such as hardware and software risks, resistance to change, and investment in training, further impede BIM adoption. A survey by the Construction Industry Development Board revealed that only 17% of Malaysian construction industry respondents had experience with BIM. Addressing these challenges and promoting BIM diffusion within construction organizations is crucial for successful BIM adoption in Malaysia. Hence, this research aims to identify the restriction and determine the benefits of Building Information Modelling implementation from the stakeholder perception. This research used quantitative method in order to achieve the objectives of this study. Hence, questionnaires that was created using GoogleForm and were distributed to the target audience. The findings of the study on the perception of respondents towards Building Information Modelling (BIM) regarding barriers in using BIM in the construction industry can be summarised, majority of respondents (scale of 3 to 5) agree with the suggested and preferred barriers based on the secondary data, indicating their perception towards BIM barriers in the construction industry. This research has identified 12 factors as positive influence factors that strongly represent the most discussed benefits achieved by implementing BIM in construction practices.

Keyword: Building information modelling, Malaysia, property industry, project management.

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CHAPTER 1

RESEARCH BACKGROUND

1.1 Research background

The implementation of Building Information Modelling (BIM), a relatively new, extremely common and hyped-up methodology that has been proposed to combat problem of mass construction waste generation, particularly during two vital phases, namely the stage of design and preconstruction (Vasudevan, 2019), offers a sustainable evaluation method for simulations of the life cycle, productive costing, enhancing the quality of engineering, promising new graduate crops, and improved collaboration in producing alternative ideas and assessing the effect of such ideas in the construction industry (Enegbuma et al., 2014).

Previous studies have established BIM as a possible method to provide information on design and development for use during construction operations (Sadeghi et al., 2019), can provide the means to transmit data more efficiently than the different formats and channels previously used (Gerrish et al., 2017) and in a regular 2D drawing, BIM software can reduce the cost of preparing 2D projects drawings, especially when there are rapid changes in designs (Ashcraft, 2008).

In the project programming process, the use of BIM helps the project team to evaluate space and appreciate the complexities of space standards and land legislation, saving time and giving the team the chance to do more value-added activities (Azhar et al., 2012). According to Husain et al., 2018, several nations at the global level are beginning to realise and are currently investing in the possibilities that the BIM model can give the construction industry in order to improve their capabilities accordingly. And some of the countries already implement BIM as mandatory/standardised guidelines of government (Sinoh et al., 2020).