



The Federal Strategy for Managing Construction Projects with Building Information Models

Bilal Manzoor*

Department of Civil and Environmental Engineering, University Technology Petronas, Seri Iskandar, Malaysia

***Corresponding author:** Bilal Manzoor, Department of Civil and Environmental Engineering, University Technology Petronas, Seri Iskandar, Malaysia, E-mail: bilal_18003504@utp.edu.my

Received date: 27 January, 2022, Manuscript No. RJE-22-60310;

Editor assigned date: 29 January, 2022, PreQC No. RJE-22-60310(PQ);

Reviewed date: 13 February, 2022, QC No RJE-22-60310;

Revised date: 19 February, 2022, Manuscript No. RJE-22-60310(R);

Published date: 26 February, 2022, DOI:10.4172/rje.1000110.

Introduction

Malaysia's construction industry confronts considerable obstacles in terms of long-term growth, such as high building prices and a lack of awareness. Building Information Modeling (BIM) and sustainable development must be integrated to overcome these issues. As a result, the goal of this research was to develop techniques for incorporating BIM into sustainable building projects. To classify the ways for achieving this goal, a thorough literature study was conducted, followed by a questionnaire survey of 129 construction project stakeholders. To investigate the detailed impact of BIM adoption techniques in sustainable construction projects, mean score and Exploratory Factor Analysis (EFA) were used. The findings found that "workshops, lectures, and conference events are used to increase public awareness," as well as "better information on the costs and benefits of sustainable materials" and "strengthened sustainable development." EFA was also used to do a group analysis, which included identifying the standardization-related strategy, the economic-related strategy, the awareness-related strategy, and the environment-related strategy. Future scholars, policymakers, and practitioners will be able to investigate the limitations of future studies thanks to this research.

Other than profit, health, and wellbeing, the construction sector benefits society. It has a big impact on community services while also improving people's quality of life and safety. In the building sector, the government has a ready supply of public infrastructure that it may offer to the country. Sustainability has become a mainstream concept in the construction industry as a result of growing concern that human activities are having a significant negative influence on the environment. The World Commission on Environment and Development (WCED), which defines sustainable development as "development that meets current demands without jeopardizing future generations' ability to satisfy their own needs," is today's widely accepted definition of sustainability. As a result, prudence must be exercised when undertaking construction projects so as not to deplete available money to the point that future generations will be unable to meet their own needs. The sustainable construction process aims to maintain the natural environment while also promoting human dignity and economic justice, which is very much in line with the values and goals of those points of view. It strives to instill environmental

accountability, social awareness, and economic profitability in key participants who create the built environment by combining the main concepts of sustainable development. Thus, in the context of building design, construction, use, and maintenance, sustainability in construction can be defined as a technique of finding a balance between economic, environmental, and social factors. However, research has revealed that the majority of developing countries have a low level of sustainability. The poor level of sustainability of building projects, according to Abolore, is due to participants' lack of awareness of the concept of sustainability. When Jamaludin looked at the awareness, drivers, attitudes, and impediments to sustainable construction, he came to the same conclusion. The level of sustainable construction implementation was found to be low, which could be due to people's lack of acquaintance with the concept. The fundamental issue in implementing sustainability, according to Durdyev, is not one of comprehension, but one of appropriateness. While sustainability is recognized, it is not implemented correctly due to financial constraints, an uneconomical construction project, or the issue of sustainable resource management, which is overlooked given that implementing the comprehensive nature of sustainable construction to achieve the desired goals is a difficult task.

Stakeholder collaborations will aid in improving the overall performance of sustainable building techniques by addressing difficulties faced by owners, the general public, clients, and consumers. BIM may make building life far more efficient than traditional methods by offering an online forum for people to collaborate on, allowing them to easily go from designs to implementation to post-design to maintenance. BIM gives the design a level of utility that allows it to solve problems while also contributing to environmental sustainability. An comprehensive building performance study may be performed, performance effects can be detected, an appearance simulation can be run, and a visualization of the building can be shown using this intelligent BIM model. BIM is most suited for sustainable building projects and applications that require data on sustainability and energy efficiency, while it can be utilized in a range of industries. This is a method of implementing improvements that will benefit the environment in the long run. Previous research has demonstrated that employing BIM technology helps to reduce waste, which is a crucial aspect of a sustainable project. The convergence of BIM and LCA, according to Curry, is based on a life cycle cost analysis. Prior to understanding the perceptions related to using BIM, especially as part of sustainable construction, Bynum examined sustainable design applications to numerous situations and applications, including by architects and developers. Based on analysis and simulations of day-lighting models, Kota studied the application of BIM for measuring day lighting within sustainable buildings. It is critical to do additional study in order to have a better understanding of techniques for implementing BIM in Malaysian sustainable construction projects. Previous studies did not go into great detail about these techniques, but they must be carefully evaluated if successful initiatives for enhancing BIM technology adoption in sustainable construction projects are to be established and implemented. These strategies were identified in this study, and their impact on Malaysian sustainable building projects was investigated.

BIM has transformed the way sustainable construction projects are managed. BIM may be used to assess constructions to determine their benefits and drawbacks, as well as opportunities, while taking into account other issues such as financial, technical, and environmental

considerations. BIM is thought to have the potential to benefit the construction sector, with widespread adoption having a considerable impact on sustainability. BIM stands for "elaborate an integrated and holistic building strategy" that incorporates design, construction, and operating aspects, as well as the usage of modeling. Ensure that construction does not deplete natural resources is a major problem in

building-oriented designs and implementation approaches. Through creativity and application of these advanced technologies to the construction industry regulation of energy conservation, these things were shown to be beneficial in achieving a proper balance of the two goals, namely, reducing the environmental effect and streamlining construction procedures.