

The Drivers Towards Green Construction-An Empirical Study in Malaysia

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Abstract: The transition from conventional to green construction has improved the construction industry in terms of its construction performance. However, even at the most fundamental level, there are still many obstacles towards achieving a comprehensive green construction. Therefore, this research aimed at investigating the drivers towards green construction and examined the hypothesis, $H_1 =$ drivers of green construction has a significant direct effect on construction industry benefits. A total of 346 questionnaires survey were gathered from clients, contractors, consultants and developers. The data were analyzed using Exploratory Factor Analysis (EFA) and structural equation modeling, SEM-AMOS. The results from EFA with varimax rotation managed to arrive with seven distinct dimensions. The dimensions were renamed as “organization strategy,” “managerial concerns”, “project strategy,” “procurement strategy”, “client requirements”, “environmental requirements” and “green technology requirements”. Meanwhile, the construction industry benefits were denoted as “project benefits” and “organization benefits”. The value for all items was significant which was >0.006 ($p>0.006$). Subsequently, the result of hypothesis testing using SEM-AMOS was also supported. Finally, this research concludes that the findings will help construction stakeholders identify the most important drivers towards green construction as well as improve the way in which green construction is implemented in Malaysia.

Key words: Drivers, green construction, SEM-AMOS, survey, project strategy

INTRODUCTION

Green construction is a process undertaken during construction that requires construction stakeholders to aware, understand and implement the current practices and innovation (environmental requirement, efficient resources, health and safety requirement, green technology, energy minimization, organization management and supervision, quality improvement, material saving, water saving, waste minimization, land saving, eco-labeling, research and development as well as training) to improve the conventional construction and environment (Arshad, 1985). The terms “green construction” and “green building” are often used interchangeably in the industry. Thus, it is important to discuss the differences between green construction and green building prior to drivers and benefits of green construction.

Literature review: Green construction is a significant link to construct green building. It can be categorized as land

efficiency, energy efficiency, material efficiency, water efficiency and environmental protection while assuring essential demands such as quality and safety. The general goal of practicing green construction is to responsibly satisfy the needs of human development. To date, there is no specific green construction rating system or tool established in Malaysia. However, there are elements of green construction which are embedded in the green building rating systems, namely, sustainable site planning, materials and resources and innovation. Table 1 summarizes the similarities between green building and green construction in the Malaysian context.

From the above table, it can be observed that green building rating system is the assessment of the overall process of green building from its inception until operation and maintenance which is employed to obtain the green building certification (i.e., platinum, gold, silver and certificate). In view of green construction, the area focuses on the process during construction and for the purpose of sustainable development