The Implementation of Environmental Management in Construction Project: A Review

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ABSTRACT

It has been widely known that the construction industry is one of the major contributors to the environmental pollution from its activities. Many factors contribute to the minority implementation of Environmental Management in construction project. These challenges and barriers that may affect the successful management of environmental cause the need for a more coherent and structured approach in construction organizations. This study aims to identify the factors for the implementation of the environmental management of construction project. The literature review done to gain information on the implementation factors. Based on the literature review, the theoretical framework was formulated to provide the hypothesis. In conclusion, the implementation of environmental management in a construction project is depending on several factors such as barrier factor, supporting factor and team management support.

INTRODUCTION

State of the environment is actually linked to our quality of life. Knowing that almost every task possesses an environmental impact [1], [2] labeled that construction activities are being as a major contributor to environmental pollution. This impact associated with construction field is makes undesirable remnants which include (a) destruction of non-renewable resources, (b) devastation of landscapes and (c) formation of safety and health problem both relating directly & indirectly to the people involved with the construction industry [3].

Earlier, the actual concern on environment of construction development is still in low condition. However, with the increasing consciousness of environmental protection due to the exhaustion associated with non-renewable resources, global warming, along with extremity associated with breakdown with ecology along with biodiversity result, this matter acquires larger interest of the construction practitioners worldwide [4]. The national policy on the environment focused on three elements; (i) sustainable development, (ii) growth of quality of life and environment, (iii) economic, social, cultural improvement.

In contrast to different industrial sectors, construction creates fairly massive amount contaminants, which includes noise, air flow, solid waste and water. [5] Stated that about half of all non-renewable resources mankind utilizes are used in construction, which makes it turning into on the list of the least sustainable industries in the world. Key consequences from the construction sector upon the environment result from existing site dereliction, habitat destruction, use of natural resources, use of water resources/water discharges, carbon emission, noise pollution, construction waste, health and safety, land use, and energy consumption [6]. This paper attempt to identify the factors for the implementation of the Environmental Management of Construction Project.

Development of Malaysian Construction Industry:

The Construction sector being one of the major contributors to the growth of Malaysia’s economy. A report by Department Of Statistic Malaysia, 2013 showed that construction sector put up a double-digit growth of 10.1 per cent (Figure1) elicited because of the vigorous performance of Residential at 21.2 per cent and a turnaround
in Non-Residential to 8.1 percent (Q2 2013: -0.9 per cent). Moreover, Special Trade stayed durable at 8.8 per cent. Meanwhile, Civil Engineering eased to 4.4 per cent, partly due to the completion of several higher impact projects within the preceding year. The seasonally adjusted for Construction rose to 1.4 per cent in this quarter (Q2 2013: 1.1 per cent) [7].

Fig. 1: Construction - Value Added, Annual Percentage Change and Percentage Share.

The Malaysian construction industry is split into two areas, general construction which consists of residential construction, non-residential construction and civil engineering construction. The second area is special trade works, which comprises activities of electrical works, metal works, sewerage, sanitary and plumbing works, refrigeration and air-conditioning works, carpentry, tiling and flooring works, painting works and glass works [8]. Due to the amount of industry linked to the construction industry makes up the industry to be a major productive sector in Malaysia and could be described as a substantial economic driver in Malaysia.

Towards Environmental Management in Construction Industry:

Environmental management define as the practical solution in construction industry to saving energy, water, and material together with reducing the negative impacts to environment. The construction industry is criticized extensively for fragmentation in the industry’s organizational and operational processes which, allegedly, led to poor performance, dangerous activities and wastefulness. Construction projects embody vast quantities of energy and matter (as well as continuous and large inputs of resources) in the delivery of safe and functional construction outputs[9]. [10] Defines that environmental management as the integration between business and environment, which ‘involves the research of overall technical and organizational activities aimed towards minimizing the environmental impact caused by a company’s business operations.

RESULTS AND DISCUSSION

From the reviewed the existing literature found that three factors that influence the practices of environmental management in the construction industry. There are; barrier factors, supporting factors, and team management support.

(i) Barrier Factors:

The full implementation of environmental management, it seems that there is a certain level of resentment and barriers exist both internally and externally. As stated by [11] these barriers distinguished as internal and external by other academics into seven points; knowledge deficiency, owner/ manager attitudes, human resources, finance, customer attitudes, operational and legislation & accreditation.

(ii) Supporting Factors:

It is crucial to identify the supporting factors for the implementation of environmental management in the construction industry. [12] studied the implementation of environmental management in the construction industry in China, in term of environmental impact, behaviors, measures and critical factors. The research has found thirty factors affecting the implementation of environmental management.
(iii) Team Management Support:
Government or authorities are a reaffirming body that can demonstrate to the commitment of environmentally responsible operations in construction projects since they are a very dominant client and could restrict to those firms that have an environmental management system in place. The critical role played by the public sector to drive the improvement of its operation in the construction industry through contractual requirements. Also, it is important to educate the end-users to be able to create market demand for environmentally friendly construction [12].

Summary:
Based on the literature review conducted, several factors for the implementation of environmental management are found. The review of knowledge classification methods highlights found three important factors in implement of environmental management, namely barrier factors, supporting factors and team management support. This factor should be considered into the environmental management strategic plan.

REFERENCES