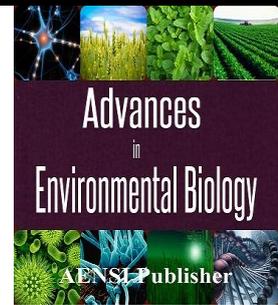




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Value Management and Client Attitude in Developing Sustainable Construction

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ABSTRACT

Sustainable development offers a platform for incorporation of environmental programs and development techniques. It identifies that development depends on the effective and ecologically responsible use of all society's rare resources, which is crucial to satisfy human requirements and enhance the quality of lifestyle. Since sustainable construction is a significant issue for every developing as well as developed country, therefore, project managers are required to implement those value management (VM) skills and tools for solving the problems associated with sustainability development. Value management as a strong process to provide the balance in triumvirate of sustainability has been studied in order to promote the elements of sustainable thinking and actions required to be adopted systematically by sustainable development practitioners in the construction industry. Lack of client commitment to implementation sustainable construction is also a major barrier within the industry's projects. VM study argues client needs and improve communication among project stakeholders. This paper is based on the integration of value management and sustainable construction development and the role of client attitude.

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INTRODUCTION

The environment is one of the major issues that affects human's life. When an environmental issue has been caused, it will be far more important than healing the results, and this is the philosophy protection of environment. There is an increasing pressure on the need to achieve sustainability and relevant authorities must formulate effective ways to achieve the target, which is implemented as a cornerstone for future policies. Considering to the current research, sustainability is an important topic that human should be concern about it [1]. Sustainable development is about making a world in which an appropriate balance is created among economic, social and environmental goals. The integration of social, economic and environmental factors into planning, implementation and decision-making so as to ensure that development serves present and future generations [2]. However, construction activities mostly cause different types of pollution such as land deterioration, resource depletion, waste generation, air pollution, noise pollution and water contamination [3, 4]. Sustainable construction is an emerging field of science that aims at incorporating the general sustainable development concepts into conventional construction practices [5]. The achievement of sustainable construction development is necessary to effort in all areas of society to meet the appropriate criteria [6]. But, there are the barriers to addressing sustainable construction development in the industry such as lack of training and knowledge in sustainable construction, unfamiliarity with green technologies in the design, lack of expressed interest, limited evidence of success, long payback period and at last but not least, lack of client commitment [7].

On the other hand, VM process outcomes have a number of intangible advantages such as increased understanding of client needs and interaction between project stakeholders [8]. The goal of value management is to reconcile differences in view between stakeholders, and, internal and external customers as to what constitutes value. To deliver most effective value rather than minimum cost, VM will take account of many issues, which cover ecological protection and social desire [9]. These characteristics can support the sustainability aim and solve the barriers of sustainable construction. Thus, VM can be defined as a system that theoretically able in achieving sustainable construction development [10]. Further search on useful ways to

integrate sustainable development issues without posing liabilities to VM facilitators or leading to conflict with the other client's requirements seems a necessary investigation in the construction industry. Overall, there are many scholarly publications on the subject of sustainable construction practices and value management, but the integration of value management with sustainable construction are very few. While the incorporating of sustainable development with value management process has been suggested in the literature, it has not yet been broadly studied around the globe. Therefore, this research explains the integration of value management and sustainable construction by considering the effects on client attitude.

Value Management:

Male *et al.* [11] defined value management as “a proactive, problem solving or seeking service which emphasis on teamwork and communication, encourage creativity and innovation, focus on the client requirements and increase the likelihood of achieving optimum value for money at lowest overall life-cycle project cost”[11]. In addition, VM is an appropriate vehicle for collating the knowledge requirements of the project and managing them throughout the construction process and then using what has learnt to inform the clients of future projects [12]. Therefore, VM has the capability to assist the absorption of sustainability at the conceptual and design stage of a project. VM is a powerful system to provide the balance between the society, environment and economics issues, mainly because of the integrated decision-making method inherent in the VM study, the potential of VM in distilling objectives towards the ideal results and the effective facilitation. VM may affect and promote implementation of sustainable construction vary widely across the client perception. Since VM process mostly initiates at an early phase of project life cycle, therefore, it is suggested that project managers embed factors related to sustainable development at the early stages of the VM workshop. VM may keep a strategic position to integrate sustainable development issues into construction projects. The features of VM and its intrinsic link with sustainability build a framework that facilitates the potential for efficient integration [10]. Table 1 shows the advantage of VM for solving the problems of sustainable construction. The use of VM to achieve sustainability is further supported by its special characteristics.

VM Characteristic	Barriers of Sustainable construction development
Gathering information, gathering idea	Shortage of knowledge in sustainable construction
Encourage creativity and innovation	Unfamiliarity with green technology
Provide the function to meet the required performance at the lowest overall cost. Eliminate unnecessary cost, enhancing the value, maximising the overall project performance	High initial cost, long payback period
Communication, team working	Lack of expressed interest
Focus on the client requirements	Lack of client commitment

Integration of Value Management and Sustainable Construction:

VM team members have opportunities to guarantee that construction projects generate minimal destruction to the environment and society as they are sought before essential decisions that would influence the project are being made [10]. The theory of integration of VM and sustainable development refers to the combination of sustainable development practices into VM study to enable that the sustainability issues are considered and incorporated throughout the whole process and decision-makings in VM. A VM process is, therefore, a structural approach, which includes of pre-workshop, six-phase workshop and post-workshop. The abilities of the value manager consist of the ability to find a value problem, structure a process (occurring through the orientation phase), bringing VM participants from competing value systems together and present improvements consequently (during the workshop phase), and make certain that these final results are implemented (through the implementation phase) [11]. At pre-workshop phase, the facilitators should introduce the significance of sustainable construction development to the clients in order to secure their commitments. Having identified sustainable construction development as an aspect of the project's goals, they would be made clear to all team members and integrated throughout function analysis stage. Ideas produced during creativity stages are evaluated towards the described functions and objectives. The proposals are then developed and presented to the decision-makers team. Therefore, the integration of VM and sustainable construction highlight the approximated cost savings and the functions that protect the environmental and social interest and provide long-term economic return. However, the perception that factors of sustainable construction development adds costs and VM goals to decrease cost may lead to seemingly conflicting interest [10]. With VM ability for reducing unnecessary cost, it is possible that sustainable construction could be attained without unnecessary cost increase. So, it can be confirmed that sustainable construction development can be economically viable.

Client Attitude:

In the construction industry, the effectiveness of implementing sustainable construction development is also highly depended on client's willingness. Client's willingness is contributed by what she can gain. It could be challenging to demonstrate how the use of sustainability factors is economically viable over the life cycle of a

construction project [9]. Although sustainability would mostly increase the project quality, but many clients have been identified as less interested in sustainable construction development [10]. It may be rooted in the facts that clients may seldom familiar with details of a construction project; they are uncomfortable with the risk in the building cost projections; they want to manage the expose within the narrowest limits available [13]. On the other hand, one of the critical problems in sustainability as discrepancy between what clients say they do and what they really do is that “green” products might not meet client requirements regarding cost, performance and output quality[7]. In this, VM study clarifies client requirements and improves communication among project stakeholders [8]. So, VM study provides a means for the client to contribute to a green built environment and the option to promote improvements in the construction project [5].

Conclusion:

One of the critical issues of sustainable construction developments is that the clients are less interested in implementation sustainability. The purpose for paying attention to clients is the intention of the project managers to resolve any conflict and introduce sustainability to increase quality of projects output. VM has a variety of methods that are used to achieve the perfect method to satisfy the client’s demands at the best price. These techniques may also provide support for the aims of the sustainability. Therefore, VM may assist in assimilation of sustainability at the design stage of a project. VM may also affect and promote implementation of sustainable construction vary widely across the client attitude.

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